

SHIVAJI UNIVERSITY, KOLHAPUR



Accredited by NAAC 'A' Grade

Revised Syllabus for

Bachelor of Arts

B.A. Part-III - MARATHI

CHOICE BASED CREDIT SYSTEM

(Syllabus will be implemented from June, 2020)

शिवाजी विद्यापीठ, कोल्हापूर
SHIVAJI UNIVERSITY, KOLHAPUR

मराठी अभ्यास मंडळ

Board of Studies in Marathi

पसंतीवर आधारित श्रेयांक पद्धती

Choice Based Credit System

बी.ए. भाग-३ (मराठी) : B.A. Part-III (Marathi)

अभ्यासक्रम : Syllabus

Introduced from June 2020 onwards

समकक्षता / Equivalence

		जुना अभ्यासक्रम		नवा अभ्यासक्रम
सत्र क्र. Sem.	अभ्यास- पत्रिका क्र. Paper No.	अभ्यासपत्रिकेचे नाव	अभ्यास- पत्रिका क्र. Paper No.	अभ्यासपत्रिकेचे नाव
V	VII	काव्यशास्त्र	VII	साहित्यविचार
V	VIII	भाषाविज्ञान आणि मराठी भाषा	VIII	मराठी भाषा व भाषाविज्ञान
V	IX	मराठी वाङ्मयाचा इतिहास	IX	मध्ययुगीन मराठी वाङ्मयाचा इतिहास (प्रारंभ ते इ.स.१५००)
V	X	मराठी भाषा : उपयोजन आणि सर्जन	X	मराठी भाषा व अर्थार्जनाच्या संधी
V	XI	वाङ्मयप्रवाहांचे अध्ययन (ग्रामीण साहित्य)	XI	वाङ्मयप्रवाहाचे अध्ययन : मध्ययुगीन
VI	XII	काव्यशास्त्र	XII	साहित्यविचार
VI	XIII	भाषाविज्ञान आणि मराठी भाषा	XIII	मराठी भाषा व भाषाविज्ञान
VI	XIV	मराठी वाङ्मयाचा इतिहास	XIV	मध्ययुगीन मराठी वाङ्मयाचा इतिहास (इ.स.१५०० ते १८००)
VI	XV	मराठी भाषा : उपयोजन आणि सर्जन	XV	मराठी भाषा व अर्थार्जनाच्या संधी
VI	XVI	वाङ्मयप्रवाहांचे अध्ययन (दलित साहित्य)	XVI	वाङ्मयप्रकाराचे अध्ययन : ललित गद्य (व्यक्तिचित्रे)

सूचना : १. सत्र पाच (V) साठी विद्यापीठाने प्रत्येक अभ्यासपत्रिकेनुरूप अंतर्गत मूल्यमापनासाठी १० गुणांसाठी सेमिनार सुचविला आहे. सदर सेमिनारसाठी त्या त्या अभ्यासपत्रिकेच्या अभ्यासक्रमानंतर सेमिनार विषय दिले आहेत. त्यापैकी एका विषयावर प्रत्येक विद्यार्थ्याने सादरीकरण करणे आवश्यक आहे. त्यामध्ये विषयानुसार उद्दिष्टे, प्रास्ताविक, विषयविवेचन, निष्कर्ष आणि संदर्भ या सूत्रानुरूप सादरीकरण गरजेचे आहे. ज्या विषयावर सेमिनार दिला आहे त्याची टिपणे विद्यार्थी व संबंधित विषय शिकविणाऱ्या शिक्षकाच्या स्वाक्षरीसह महाविद्यालयाच्या विभागात जतन करून ठेवणे आवश्यक आहे.

२. सत्र सहा (VI) साठी विद्यापीठाने प्रत्येक अभ्यासपत्रिकेनुरूप अंतर्गत मूल्यमापनासाठी १० गुणांचा गटप्रकल्प (Group Project) सुचविला आहे. सदर गटप्रकल्पासाठी त्या त्या अभ्यासपत्रिकेच्या अभ्यासक्रमानंतर गटप्रकल्प विषय सुचविले आहेत. त्यापैकी एका विषयावर गटप्रकल्प सादर करणे आवश्यक. गटप्रकल्प तयार करताना शीर्षक, उद्दिष्टे, प्रास्ताविक, गहीतके, विषयाचे महत्त्व, विषयविवेचन, निष्कर्ष आणि संदर्भ या क्रमाने गटप्रकल्प तयार करावा. एका गटप्रकल्पासाठी कमाल ५ विद्यार्थी मर्यादा असावी. ज्या विषयावर गटप्रकल्प तयार केला आहे; त्यावर गटप्रकल्पांची व संबंधित विषय शिकविणाऱ्या शिक्षकांची स्वाक्षरी घेऊन सदर प्रकल्प विभागात जतन करून ठेवावेत.

३. सेमिनार व गटप्रकल्पसंदर्भात विषयाची निवड करताना विद्यापीठाने सूचित केलेल्या विषयाबरोबर त्या त्या अभ्यासपत्रिकेनुरूप आणखी काही नावीन्यपूर्ण विषयांची निवड करण्यास स्वातंत्र्य दिले आहे.

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Choice Based Credit System

Structure of Programme

Revised syllabus B. A. Part III (MARATHI)

Introduced from June 2020 onwards

Sr.No.	सत्र क्र. Sem.	अभ्यासपत्रिकेचे नाव	अभ्यास- पत्रिका क्र. Paper No.	Workload	Credits	Total Credits	Theory Marks	Term work/ Seminar
1	V	साहित्यविचार	VII	4 lectures/ week	4	20	40	10
2	V	मराठी भाषा व भाषाविज्ञान	VIII	4 lectures/ week	4		40	10
3	V	मध्ययुगीन मराठी वाङ्मयाचा इतिहास (प्रारंभ ते इ.स.१५००)	IX	4 lectures/ week	4		40	10
4	V	मराठी भाषा व अर्थार्जनाच्या संधी	X	4 lectures/ week	4		40	10
5	V	वाङ्मयप्रवाहाचे अध्ययन : मध्ययुगीन	XI	4 lectures/ week	4		40	10
Sr.No.	सत्र क्र. Sem.	अभ्यासपत्रिकेचे नाव	अभ्यास- पत्रिका क्र. Paper No.	Workload	Credits	Total Credits	Theory Marks	Term work/ Group project
6	VI	साहित्यविचार	XII	4 lectures/ week	4	20	40	10
7	VI	मराठी भाषा व भाषाविज्ञान	XIII	4 lectures/ week	4		40	10
8	VI	मध्ययुगीन मराठी वाङ्मयाचा इतिहास (इ.स.१५०० ते १८००)	XIV	4 lectures/ week	4		40	10
9	VI	मराठी भाषा व अर्थार्जनाच्या संधी	XV	4 lectures/ week	4		40	10
10	VI	वाङ्मयप्रकाराचे अध्ययन : ललितगद्य (व्यक्तिचित्रे)	XVI	4 lectures/ week	4		40	10

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बी.ए. भाग-३ : B.A. Part-III

अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-५ : Semester No. V : अभ्यासपत्रिका क्र. VII

Discipline Specific Elective (DSE-E1)

विद्याशाखीय विशेष निवड (DSE-E1)

साहित्यविचार

उद्दिष्टे :

१. पौर्वात्य, पाश्चात्य व आधुनिक भारतीय साहित्यशास्त्राचे स्वरूप समजून घेणे.
२. ललित व ललितेतर साहित्याचे स्वरूप समजून घेणे.
३. साहित्य प्रयोजनांचे आकलन करून घेणे.
४. साहित्याची निर्मितिप्रक्रिया आणि त्याचे स्वरूप आकलन करून घेणे.
५. भाषेतील अलंकार समजून घेणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	साहित्याचे स्वरूप ■ साहित्याच्या व्याख्या ● पौर्वात्य - भामह, मम्मट, आनंदवर्धन, विश्वनाथ - पाश्चात्य - वर्डस्वर्थ, कोर्टहोप, मॅथ्यू अर्नोल्ड, कार्लाइल ● आधुनिक - विनोबा भावे, अ. वा. कुलकर्णी, गंगाधर गाडगीळ, वि. ना. ढवळे, ■ ललित व ललितेतर साहित्य ■ ललित साहित्यातून व्यक्त होणाऱ्या अनुभवांचे विशेष-संवेदनात्मकता, भावनात्मकता, वैचारिकता, सेंद्रियता, सूचकता, विशिष्टता, विश्वात्मकता	१५	१

विभाग २ Module 2	साहित्याचे प्रयोजन ● प्रयोजन म्हणजे काय ? ● प्रयोजन आणि परिणाम यातील फरक ■ साहित्याची प्रयोजने : १) यश किंवा कीर्ती २) व्यवहारज्ञान ३) आनंद ४) उद्बोधन ५) आत्माविष्कार ६) जिज्ञासापूर्ती ७) जीवनानुभूती ८) इच्छापूर्ती अथवा स्वप्नरंजन ९) पलायनवाद (Escapism)	१५	१
घटक ३ Module 3	साहित्यनिर्मितीची कारणे ● साहित्यनिर्मितीचे स्वरूप ● साहित्यनिर्मितीची कारणे १) प्रतिभा – स्वरूप व वैशिष्ट्ये (प्रतिभाव्यापार, प्रतिभेचे अलौकिकत्व, अपूर्वनिर्मितिक्षम प्रतिभा, प्रतिभा ही वेडाची बहीण) २) बहुश्रुतता ३) अभ्यास ४) भावनात्मकता ५) संवेदनशीलता ६) उत्प्रेक्षा ७) चमत्कृती ८) स्वास्थ्य (शारीरिक, मानसिक) ९) साहित्यिकाचा जीवनविषयक दृष्टिकोण	१५	१
घटक ४ Module 4	अलंकार १) अतिशयोक्ती २) स्वभावोक्ती ३) दृष्टान्त ४) उपमा ५) अनुप्रास ६) रूपक (व्याख्या, स्वरूप आणि उदाहरणे अपेक्षित)	१५	१

* प्रश्नपत्रिकेचे स्वरूप व गुणविभागणी *

Pattern of Question Paper

एकूण गुण – ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	अलंकार (चार पैकी दोन)	१० गुण

सूचना :

१. विभाग चार वर वस्तुनिष्ठ प्रश्न असणार नाहीत.
२. अंतर्गत मूल्यमापनाकरिता सेमिनारसाठी दहा गुण आहेत.

सेमिनार विषय :

- विविध साहित्य प्रवाहातील कोणत्याही एका साहित्यकृतीचे किंवा अनुवादित साहित्यकृतीचे परीक्षण करून सादरीकरण करणे.
- कोणत्याही भाषेतील एका चित्रपट वा नाटकाचे परीक्षण करून सादरीकरण करणे.

मूलभूत वाचन :

१. जोग, रा. श्री. अभिनव काव्यप्रकाश, व्हीनस प्रकाशन, पुणे, आवृत्ती ७ वी, १९७५
२. गाडगीळ, स. रा. काव्यशास्त्रप्रदीप, व्हीनस प्रकाशन, पुणे, आवृत्ती ४ थी, जानेवारी, १९९३
३. गोविलकर, लीला भारतीय साहित्यविचार, स्नेहवर्धन, पुणे, २००३
४. वाळंबे, मो. रा. सुगम मराठी व्याकरण, नितीन प्रकाशन, पुणे
५. देशपांडे, अ. ना. (संपा.) विनोबांची साहित्यदृष्टी, परमधाम प्रकाशन, पवनार, वर्धा, १९७५
६. कुलकर्णी, अ. वा. साहित्यविचार, प्रतिमा प्रकाशन, पुणे, आ.दु. १९९७
७. गाडगीळ, गंगाधर खडक आणि पाणी, पॉप्युलर प्रकाशन, मुंबई, १९६०.
८. ढवळे, वि. ना. साहित्याचे तत्त्वज्ञान, कॉन्टिनेन्टल प्रकाशन, पुणे

पूरक वाचन :

१. उपासे, शिवशंकर काव्यशास्त्र परिचय, फडके प्रकाशन, कोल्हापूर, २०१३
२. कंगले, र. पं. प्राचीन काव्यशास्त्र, मौज प्रकाशन, मुंबई, १९७४
३. देशमुख, मा. गो. मराठीचे साहित्यशास्त्र, (ज्ञानेश्वर ते रामदास)
४. डॉ. नगेंद्र भारतीय काव्यशास्त्राचे मूल प्रश्न, सुविचार, नागपूर, पुणे, १९६७
(अनुवादक : शैलजा करंदीकर)

संदर्भ ग्रंथ :

१. जाधव, उदय काव्यशास्त्र : आकलन आणि आस्वाद, लोकपाल पब्लिकेशन, औरंगाबाद
प्रथमावृत्ती, ५ सप्टेंबर, २०१३
२. पुंडे, दत्तात्रय व साहित्य विचार, स्नेहवर्धन प्रकाशन, पुणे, प्रथमावृत्ती, फेब्रुवारी, १९९५
तावरे, स्नेहल (संपा.)
३. पाटील, म. सु. भारतीयांचा साहित्यविचार, चेतश्री प्रकाशन, अमळनेर
४. वासमकर, वि. दा. मराठीतील कलावादी समीक्षा, अक्षरदीप प्रकाशन, कोल्हापूर, आ. प. २०१८
५. करंदीकर, गो. वि. ऑरिस्टॉटलचे काव्यशास्त्र, पॉप्युलर प्रकाशन, मुंबई
६. जाधव, मा. मा. अक्षरगाथा (मराठी साहित्यविचार विशेषांक) मासिक, नांदेड, एप्रिल, २०१४

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Choice Based Credit System

बी.ए. भाग-३ : B.A. Part-III

अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-५ : Semester No. 5 : अभ्यासपत्रिका क्र. VIII

Discipline Specific Elective (DSE-E2)

विद्याशास्त्रीय विशेष निवड (DSE-E2)

मराठी भाषा व भाषाविज्ञान

उद्दिष्टे :

१. भाषोत्पत्तीचा अभ्यास करणे.
२. भाषाविज्ञानाचा परिचय करून घेणे.
३. भाषाविज्ञान आणि मराठी भाषा यांचा सहसंबंध जाणून घेणे.
४. स्वनविचार, रूपविचार व वाक्यविचारांचा परिचय करून घेणे.
५. मराठी भाषेविषयी विद्यार्थ्यांची आवड विकसित करणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	भाषोत्पत्ती विचार ● भाषेची उत्पत्ती – ईश्वरनिर्मित, राजनिर्मित, समाजनिर्मित ● भाषेच्या उत्पत्तीच्या उपपत्ती/सिद्धांत १. इंगित (Gesture) २. मुखाभिनय (Oral Gesture) ३. अनुकरण (Bow-Bow) ४. रणन (Ding Dong) ५. भावनाभिव्यक्ती (Pooh-Pooh) ६. श्रमपरिहार (Yo-he-Yo) ७. प्रेमगानमूलक (Sing-Song) ८. संपर्क (Contact) ९. क्रीडासक्ती (Play-Way) १०. समन्वय उपपत्ती/सिद्धांत	१५	१
विभाग २ Module II	भाषेचे स्वरूप, व्याख्या आणि वैशिष्ट्ये ● भाषा म्हणजे काय ? ● भाषेच्या व्याख्या : कृ. पां. कुलकर्णी, ना. गो. कालेलकर, श्री. न. गर्जेद्रगडकर ● भाषेचे स्वरूप : समाजव्यवहाराचे साधन, ध्वनिमाध्यमता, प्रतीकात्मकता, संकेतबद्धता, भाषा – एक पद्धती, भाषा मानवी आहे. ● सी. एफ. हॉकेटने सांगितलेली भाषेची सात वैशिष्ट्ये दुहेरीपण, निर्मितक्षमता, कार्यकारण संबंधाचा अभाव, यादृच्छिकता, अदलाबदलीची शक्यता, विशिष्टीकरण, स्थलकालातीतता, सांस्कृतिक संक्रमण या शिवाय – सामाजिक संस्था, अर्जित भाषा, परिवर्तनशीलता, रैखिकता इ. वैशिष्ट्यांचा विचार	१५	१

विभाग ३ Module III	स्वनिम व रूपिम विचार (स्थूल परिचय) अ. स्वनिम विचार १. स्वन २. स्वनिम ३. स्वनांतर (संकल्पना, स्वरूप, प्रकार) ब. रूपिम विचार १. रूप २. रूपिम ३. रूपिकांतर (संकल्पना, स्वरूप, प्रकार)	१५	१
विभाग ४ Module IV	वाक्यविचार ● पदबंध व वाक्याचे स्वरूप ● वाक्याचे प्रकार केवलवाक्य व त्याचे प्रकार, मिश्रवाक्य व त्याचे प्रकार, संयुक्त वाक्य व त्याचे प्रकार, वाक्याचे पृथक्करण	१५	१

एकूण गुण – ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	टिपा लिहा (चार पैकी दोन)	१० गुण

सूचना :

१. अंतर्गत मूल्यमापनाकरिता सेमिनारसाठी दहा गुण आहेत.

सेमिनार विषय :

१. स्वन-स्वनिम, रूप-रूपिम पैकी कोणत्याही एका घटकाच्या अनुषंगाने प्रात्यक्षिकांसह सादरीकरण अपेक्षित.
२. कोणत्याही एका साहित्यकृतीच्या निवडक भागातील वाक्यांचे प्रकार, पृथक्करण, विश्लेषणासह सादरीकरण अपेक्षित.

मूलभूत वाचन :

१. जोशी, प्र. न. सुबोध भाषाशास्त्र, स्नेहवर्धन प्रकाशन, पुणे
२. गवळी, अनिल भाषाविज्ञान आणि मराठी भाषा, हिरण्यकेशी प्रकाशन, कोल्हापूर
३. धोंगडे, रमेश भाषा आणि भाषाविज्ञान, दिलीपराज प्रकाशन, पुणे
४. कानडे, मु. श्री. (संपा.) मराठीचा भाषिक अभ्यास, स्नेहवर्धन प्रकाशन, पुणे
५. गर्जेद्रगडकर, श्री. न. भाषा आणि भाषाशास्त्र, व्हीनस प्रकाशन, पुणे
६. हिरेमठ, राजशेखर मराठी व्याकरण परिचय, मेहता पब्लिशिंग हाऊस, पुणे
७. Hocket C.F. A course in Modern Linguistics, Oxford, New York, 1958

पूरक वाचन :

१. कुलकर्णी, कृ. पां. मराठी भाषा : उद्गम आणि विकास, मेहता पब्लिशिंग हाऊस, पुणे
२. मालशे, मिलिंद आधुनिक भाषाविज्ञान : सिद्धांत आणि उपयोजन, लोकवाङ्मयग्रह, मुंबई
३. कुलकर्णी, सुलक्षणा व भाषाविज्ञान परिचय, फडके प्रकाशन, कोल्हापूर
कुबेर, वसंत
४. दामले, मो. के. शास्त्रीय मराठी व्याकरण, दामोदर सावळाराम आणि मंडळी, पुणे

संदर्भ ग्रंथ :

१. मालशे, पुंडे, सोमण (संपा.) भाषाविज्ञानपरिचय, पद्मगंधा प्रकाशन, पुणे
२. पुंडे, द. दि. सुलभ भाषाविज्ञान, स्नेहवर्धन प्रकाशन, पुणे
३. कदम, महेंद्र मराठीचे वर्णनात्मक भाषाविज्ञान, स्नेहवर्धन प्रकाशन, पुणे
४. काळे, कल्याण/सोमण, अंजली (संपा.) आधुनिक भाषाविज्ञान, प्रतिमा प्रकाशन, पुणे
५. पाटील, व्ही. एन. सुलभ भाषाविज्ञान व मराठी व्याकरण, प्रशांत पब्लिकेशन्स, जळगाव,
आ.दु. २, २०१६
६. भांड, बाबा व मगर, राजेंद्र भाषा आणि साहित्य, माझी भूमिका : सयाजीराव गायकवाड, महाराजा
सयाजीराव गायकवाड संशोधन व प्रशिक्षण संस्था, औरंगाबाद, २०२०
७. लामतुरे, प्रज्ञा ग्रामीण बोलीभाषेचे वैभव, संस्कृती प्रकाशन, पुणे, २०१२
८. जाधव, मा. मा. (संपा.) अक्षरगाथा (मराठी भाषा विशेषांक), मासिक, नांदेड, ऑक्टोबर, २०१३

शिवाजी विद्यापीठ, कोल्हापूर

SHIVAJI UNIVERSITY, KOLHAPUR

मराठी अभ्यास मंडळ

Board of Studies in Marathi

पसंतीवर आधारित श्रेयांक पद्धती

Choice Based Credit System

बी.ए. भाग-३ : B.A. Part-III

अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-५ : Semester No. 5 : अभ्यासपत्रिका क्र. IX

Discipline Specific Elective (DSE-E3)

विद्याशास्त्रीय विशेष निवड (DSE-E3)

मध्ययुगीन मराठी वाङ्मयाचा इतिहास (प्रारंभ ते इ.स.१५००)

उद्दिष्टे :

१. मध्ययुगीन मराठी वाङ्मयाचा कालिक अभ्यास करणे.
२. मध्ययुगीन मराठी वाङ्मयाचा स्थूल परिचय करून घेणे.
३. मध्ययुगीन मराठी वाङ्मयाचे स्वरूप, वैशिष्ट्ये अभ्यासणे.
४. मध्ययुगीन मराठी वाङ्मयातील महत्त्वाचे ग्रंथकार आणि ग्रंथ यांचा स्थूल परिचय करून घेणे.
५. मध्ययुगीन मराठी वाङ्मयाच्या गद्य, पद्य रचनेचे विशेष अभ्यासणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	■ मराठी वाङ्मयाचा प्रारंभकाळ ते इ.स. १२०० पर्यंत अ) विवेकसिंधूपूर्वकालीन रचना कुवलयमाला, मानसोल्लास, राजमतिप्रबोध, अमरनाथ संवाद, गोरक्षगीता इ. ब) मराठीतील आद्य ग्रंथकार मुकुंदराज यांची रचना विवेकसिंधू, पवनविजय, परमामृत क) मराठीतील आद्य कवयित्री महदंबा यांची रचना धवळे (पूर्वार्ध व उत्तरार्ध), मातृकी रुक्मिणीस्वयंवर	१५	१
विभाग २ Module II	■ इ. स. १२०० ते १३०० (स्थूल कालखंड) अ) महानुभावीय गद्य वाङ्मय म्हाडंभट - लीळाचरित्र, श्री. गोविंदप्रभूचरित्र व इतर रचना केसोबास - सूत्रपाठ, दृष्टांतपाठ, स्मृतिस्थळ	१५	१

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग २ Module II	ब) महानुभावीय पद्य वाङ्मय सातीग्रंथ (ग्रंथ व ग्रंथकार स्थूल परिचय) नरेंद्र - रुक्मिणी स्वयंवर भास्करभट्ट बोरीकर - शिशुपालवध, उद्धवगीता किंवा एकादशस्कंध दामोदर पंडित - वछाहरण पंडित विश्वनाथ - ज्ञानप्रबोध रवळोव्यास - सह्याद्रिवर्णन नारायणपंडित - श्री ऋद्धिपूरवर्णन	१५	१
विभाग ३ Module III	इ. स. १३०० ते १४०० (स्थूल कालखंड) अ) ज्ञानेश्वरांचे वाङ्मयीन कार्य ज्ञानेश्वरी, अमृतानुभव, चांगदेवपासष्टी, हरिपाठाचे अभंग व इतर रचना ब) नामदेवांची अभंगरचना क) सावता माळी, गोरोबा कुंभार, मुक्ताबाई, सेना महाराज, नरहरी सोनार, चोखामेळा, जनाबाई, कान्होपात्रा यांच्या रचना	१५	१
विभाग ४ Module IV	इ. स. १४०० ते १५०० (स्थूल कालखंड) अ) अन्य संप्रदायातील प्रमुख ग्रंथकार आणि त्यांची ग्रंथरचना सत्यमालनाथ, चोंभा (नाथ संप्रदाय) शांतलिंग आणि मन्मथशिवलिंग (लिंगायत संप्रदाय) गुणकीर्ती व जिनदासनामा (जैन मराठी कवी) नृसिंह सरस्वती आणि दासोपंत (दत्त संप्रदाय) अज्ञानसिद्ध व बहिराजातवेद (नागेश संप्रदाय) शेख महंमद आणि हुसेन अंबरखान (मुस्लीम मराठी कवी) फादर स्टीफन्स, फादर क्रुवा (ख्रिस्ती मराठी कवी)	१५	१

* प्रश्नपत्रिकेचे स्वरूप व गुणविभागणी *

Pattern of Question Paper

एकूण गुण - ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	टिपा लिहा (चार पैकी दोन)	१० गुण

सूचना :

१. अंतर्गत मूल्यमापनाकरिता सेमिनारसाठी दहा गुण आहेत.

सेमिनार विषय :

- १) मध्ययुगीन मराठी वाङ्मयातील कोणत्याही एका ग्रंथकाराच्या रचना विशेषावर सादरीकरण.
- २) कोणत्याही एका संत कवीच्या काव्यातील सामाजिकतेवर सादरीकरण.
- ३) कोणत्याही एका संत कवयित्रीच्या कवितेतील आत्मनिष्ठा यावर आधारित सादरीकरण.

मूलभूत वाचन :

१. नसिराबादकर, ल. रा.
२. पठाण, यू. म.
३. देशपांडे, अ. ना.
४. पांगारकर, ल. रा.
५. पसारकर, शे. दे.

प्राचीन मराठी वाङ्मयाचा इतिहास, फडके प्रकाशन, कोल्हापूर
महानुभाव साहित्य संशोधन खंड १, मराठवाडा विद्यापीठ प्रकाशन, औरंगाबाद
प्राचीन मराठी वाङ्मयाचा इतिहास खंड १ ते ४
प्राचीन मराठी वाङ्मयाचा इतिहास खंड १ ते ३, महाराष्ट्र साहित्य परिषद
प्रकाशन, पुणे
वेलू गेला गगनावरी, सुविद्या प्रकाशन, सोलापूर

पूरक वाचन :

१. शेणोलीकर, ह. श्री.
२. पांगारकर, ल. रा.
३. तुळपुळे, शं. गो.
४. मांडवकर, भाऊ
५. इनामदार, हे. वि. (संपा.)
६. उपासे, शिवशंकर
७. उपासे, शिवशंकर (संपा.)
८. पसारकर, शे. दे. (संपा.)
९. केळुसकर, कृष्णराव
१०. फाटक, न. र.
११. परमार्ग सेवक श्री बालकृष्णशास्त्री
महानुभाव

प्राचीन मराठी वाङ्मयाचे स्वरूप, व्हीनस प्रकाशन, पुणे
मराठी वाङ्मयाचा इतिहास खंड १ व २,
मराठी वाङ्मयाचा इतिहास, महाराष्ट्र साहित्य परिषद, पुणे
संत नामदेव दर्शन, सेवा प्रकाशन, अमरावती
संत नामदेव काव्यसंभार आणि संत परिवार
महाराष्ट्र भूषण सहा संत साहित्यिक, फडके प्रकाशन, कोल्हापूर, २०१२
शांतलिंगकृत कर्णहंस, प्रका. शरण संस्कृती अध्ययन केंद्र, सिद्ध संस्थान
मठ, निडसोसी, ता. हुक्करी, जि. बेळगाव
श्री मन्मथशिवलिंगकृत परमरहस्य, शैवभारती शोध प्रतिष्ठान, वाराणसी, २००१
संत तुकाराम, साकेत प्रकाशन, औरंगाबाद
श्री एकनाथ : वाङ्मय आणि कार्य, मौज प्रकाशन गृह, मुंबई
महानुभावपंथ, प. पू. मधुकरशास्त्री कवीश्वर, पंचकमिटी संस्थान,
श्री देवदेवेश्वर, माहूर, आ. आठवी, २०१४

संदर्भ ग्रंथ :

१. देऊळगावकर, चंद्रकांत (संपा.)

१. पाटील, तानाजी
२. सुंठणकर, बा. र.
३. सरदार, गं. बा.
४. जाधव, रा. ग.
५. जाधव, रा. ग.
६. कामत, अशोक व बडवे, सतीश (संपा.)
७. देशमुख, उषा
८. पाटील, सदाशिव
९. घोणसे, शामा
१०. प्रियोळकर, अ. का.
११. ढेरे, रा. चिं.
१२. पठाण, यू. म.
१३. मोरजे, गंगाधर
१४. उपाध्ये, बाबुराव
१५. इल्लेकर, सुहासिनी
१६. अक्कोळे, सुभाषचंद्र
१७. पाटंगणकर, विद्यासागर
१८. होनमाने, धनंजय

मन्मथस्वामी व्यक्ती आणि वाङ्मय, प्रका. शैवभारती शोध प्रतिष्ठान,
जंगमवाडी मठ, वाराणसी
संत साहित्यातील सामाजिकता, विश्वकर्मा पब्लिकेशन, पुणे
महाराष्ट्रीय संतमंडळीचे ऐतिहासिक कार्य, बेळगाव
संत वाङ्मयाची सामाजिक फलश्रुती, म. सा. प. पुणे
आनंदाचा डोह, प्राज्ञ पाठशाळा मंडळ, वाई
वागर्थ, प्रतिमा प्रकाशन, पुणे
संत नामदेवविषयक अभ्यास, आळंदी
मांदियाळी, माया प्रकाशन, नागपूर
तुकाराम आणि कबीर, दर्या प्रकाशन, पुणे
वीरशैवांचे मराठी-हिंदी वाङ्मय : एक अभ्यास, शैवभारती शोध प्रतिष्ठान,
जंगमवाडी मठ, वाराणसी
मुसलमानांची जुनी मराठी कविता
मुसलमान मराठी संतकवी, पद्मगंधा प्रकाशन, पुणे
मुसलमान (सुफी) संतांचे मराठी साहित्य
मराठी ख्रिस्ती वाङ्मय, फादर स्टीफन्स ते १९६०, अहमदनगर
संत गोरा कुंभार : वाङ्मय दर्शन, स्नेहवर्धन प्रकाशन, पुणे
संत कवी आणि कवयित्री : एक अनुबंध, स्नेहवर्धन प्रकाशन, पुणे
प्राचीन मराठी जैन साहित्य, सुविचार प्रकाशन, नागपूर
मराठी संत कवयित्रींचा इतिहास, साहित्य अकादमी, नवी दिल्ली
तंजावरची मराठी कीर्तनपरंपरा, स्नेहवर्धन, पुणे, २०१७

शिवाजी विद्यापीठ, कोल्हापूर
SHIVAJI UNIVERSITY, KOLHAPUR

मराठी अभ्यास मंडळ

Board of Studies in Marathi

पसंतीवर आधारित श्रेयांक पद्धती

Choice Based Credit System

बी.ए. भाग-३ : B.A. Part-III

अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-५ : Semester No. V : अभ्यासपत्रिका क्र. X

Discipline Specific Elective (DSE-E4)

विद्याशाखीय विशेष निवड (DSE-E4)

मराठी भाषा व अर्थार्जनाच्या संधी

पाठ्यपुस्तक : मराठी भाषा व अर्थार्जनाच्या संधी (संपादन)

शिवाजी विद्यापीठ प्रकाशन, कोल्हापूर

उद्दिष्टे :

१. सर्जनशील लेखनप्रक्रिया समजून घेणे.
२. वैचारिक लेखनाचे स्वरूप अभ्यासणे.
३. शोधनिबंध व प्रकल्पलेखन कौशल्य समजून घेणे.
४. आंतरजालावरील मराठी लेखनपद्धती अभ्यासणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	सर्जनशील लेखन ■ सर्जनशील लेखन – संकल्पना व स्वरूप ● कथा – संकल्पना, स्वरूप ● कथेचे घटक ● प्रात्यक्षिकासह कथालेखन	१५	१
विभाग २ Module II	वैचारिक लेखन ● वैचारिक लेखन : संकल्पना व स्वरूप ● वैचारिक लेखनाची पद्धत ● वैचारिक लेखनाचे प्रकार ● प्रात्यक्षिकासह वैचारिक लेखन	१५	१

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग ३ Module III	शोधनिबंध व प्रकल्पलेखन (स्थूल परिचय) ● संशोधन : संकल्पना, स्वरूप, महत्त्व ● संशोधनपर लेखनप्रकार परिचय १. शोधनिबंध – स्वरूप व पद्धती २. संशोधन प्रकल्प – स्वरूप व पद्धती ३. प्रबंधिका ४. प्रबंध ● संशोधनपर लेखनाची पथ्ये व भाषा	१५	१
विभाग ४ Module IV	आंतरजालावरील (Internet) मराठी ● आंतरजालावरील मराठीविषयक लेखनाचे स्वरूप ● नोंदी लेखन, विश्वकोश, विकिपीडिया इ. ● आंतरजालावरील मराठी संकेतस्थळांचा परिचय १. राज्य मराठी विकास संस्था २. महाराष्ट्र राज्य साहित्य आणि संस्कृती मंडळ ३. भाषा संचालनालय ४. मराठी भाषा विभाग, महाराष्ट्र शासन ५. मराठी साहित्य परिषद, पुणे ६. विश्वकोश मंडळ ७. इतर संकेतस्थळे – साहित्य अकादमी, नॅशनल बुक ट्रस्ट, भारतीय भाषा संस्थान, म्हैसूर इ. ● प्रात्यक्षिकासह आंतरजालावर मराठीविषयक लेखन	१५	१

* प्रश्नपत्रिकेचे स्वरूप व गुणविभागणी *

Pattern of Question Paper

एकूण गुण – ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	टिपा लिहा (चार पैकी दोन)	१० गुण

सूचना : १. प्रश्न क्र. ४ मध्ये ४ पैकी २ प्रश्न उपयोजनावर आधारित असतील.

२. अंतर्गत मूल्यमापनाकरिता सेमिनारसाठी दहा गुण आहेत.

सेमिनार विषय :

१. भाषा, साहित्य, संस्कृती व माध्यमविषयक कोणत्याही एका विषयावर शोधनिबंधाचे सादरीकरण करणे.

मूलभूत वाचन :

१. जोशी, सुधा
२. सारंग, विलास
३. मालशे, मिलिंद (संपा.)
४. पाटील, आनंद
५. काळे, कल्याण, पुंडे, द. दि.
६. वेलणकर, जयंत
७. कऱ्हाडे, सदा
८. चुनेकर, सु. रा. व
पठारे, रंगनाथ (संपा.)
९. वरखेडे, रमेश नारायण व
वरखेडे, मंगला रमेश
१०. रोकडे, सुहास

कथा संकल्पना आणि समीक्षा, मौज प्रकाशन, मुंबई, २००२
सर्जनशोध आणि लिहिता लेखक, मौज प्रकाशन, मुंबई
शोधनिबंधाची लेखनपद्धती (सुधारित आवृत्ती) लोकवाङ्मय गृह, मुंबई
सृजनात्मक लेखन, पद्मगंधा प्रकाशन, पुणे, २००९
व्यावहारिक मराठी, निराली प्रकाशन, पुणे, २००७
प्रबंध कसा लिहावा, साहित्य प्रसारक केंद्र, नागपूर
संशोधन : सिद्धांत आणि पद्धती, लोकवाङ्मय गृह, मुंबई
संशोधन स्वरूप आणि पद्धती, शि. प्र. संस्था, संगमनेर
संशोधनाचे पद्धतिशास्त्र, उद्ग्रामण्ये इन्स्टिट्यूट ऑफ एज्युकेशन,
एक्सलन्स, पुणे
संगणक व माहिती तंत्रज्ञान, नाथे प्रकाशन, पुणे

पूरक वाचन :

१. नसिराबादकर, ल. रा.
२. रेगे, मे. पुं. (संपा.)
३. गवस, राजन; शिंदे, अरुण व
पाटील, गोमटेश्वर
४. गोविलकर, लीला
पाटणकर, जयश्री
५. शेख, यास्मिन
६. शिकारपूरकर, दीपक
७. शेख, यास्मिन

व्यावहारिक मराठी, फडके प्रकाशन, कोल्हापूर
नवभारत (मासिक), व्यावहारिक मराठी विशेषांक, प्राज्ञ पाठशाळा मंडळ,
वाई, ऑगस्ट-सप्टेंबर, १९८१
भाषिक सर्जन आणि उपयोजन, दर्या प्रकाशन, पुणे, २०१२
व्यावहारिक मराठी, स्नेहवर्धन पब्लिशिंग हाऊस, पुणे, २००७
मराठी लेखन मार्गदर्शिका, राज्य मराठी विकास संस्था व शुभदा सारस्वत
प्रकाशन, पुणे, १९९९/सुधारित तिसरी आवृत्ती, राज्य मराठी विकास
संस्था, मुंबई, डिसें. २०१७
दिव्यांगमित्र संगणक, उत्कर्ष प्रकाशन, पुणे
मराठी हस्तलेखन कोश, दुसरी आवृत्ती, हर्मिस प्रकाशन, पुणे, २०१५

संदर्भ ग्रंथ :

१. तौर, पृथ्वीराज
२. जोशी, प्रभाकर व
वले, वासुदेव
३. सारंग, विलास
४. पाटील, आनंद
५. लोखंडे, शशिकांत
६. गवळी, अनिल
७. गवळी, अनिल व मोरे, नंदकुमार
८. कांबळे, विनोद
९. वरखेडे, मंगला

मराठी भाषिक कौशल्ये विकास, अथर्व पब्लिकेशन्स, धुळे, २०१८
उपयोजित मराठी भाग १, प्रशांत पब्लिकेशन्स, जळगाव, २०१७
सर्जनशोध आणि लिहिता लेखक, मौज प्रकाशन, मुंबई
सृजनात्मक लेखन, पद्मगंधा प्रकाशन, पुणे
नवी जाणीव, लोकवाङ्मय गृह, मुंबई, २०१२
मराठी भाषा : आज आणि उद्या, दर्या प्रकाशन, पुणे, २०१८
भाषासंवाद, सायन पब्लिकेशन, पुणे, २०१३
सर्जननौदी, वाचनकट्टा प्रकाशन, प्रा. लि., कोल्हापूर, २०१९
प्रकल्प अभ्यास, नाशिक

शिवाजी विद्यापीठ, कोल्हापूर
SHIVAJI UNIVERSITY, KOLHAPUR

मराठी अभ्यास मंडळ

Board of Studies in Marathi

पसंतीवर आधारित श्रेयांक पद्धती

Choice Based Credit System

बी.ए. भाग-३ : B.A. Part-III

अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-५ : Semester No. V : अभ्यासपत्रिका क्र. XI

Discipline Specific Elective (DSE-E5)

विद्याशाखीय विशेष निवड (DSE-E5)

वाङ्मय प्रवाहाचे अध्ययन : मध्ययुगीन

पाठ्यपुस्तक : दृष्टांतपाठ-निवडक दृष्टांत (संपादन)

शिवाजी विद्यापीठ प्रकाशन, कोल्हापूर

उद्दिष्टे :

१. मध्ययुगीन महाराष्ट्र व महानुभाव पंथ यांचा परिचय करून घेणे.
२. महानुभाव वाङ्मयाच्या प्रेरणा व स्वरूप समजून घेणे.
३. महानुभावीय ग्रंथकार केसोबास यांचा परिचय करून घेणे.
४. दृष्टांतपाठातील आशयस्वरूप व अभिव्यक्ती विशेष अभ्यासणे.
५. दृष्टांतपाठातील भाषिक वैभवाचा परिचय करून घेणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	● मध्ययुगीन महाराष्ट्र आणि महानुभावीय गद्याच्या प्रेरणा व स्वरूप ● महानुभाव गद्य ग्रंथकार केसोबास यांचा परिचय ● दृष्टांतपाठाचे स्वरूप	१५	१
विभाग २ Module II	■ दृष्टांतपाठातील आशयसूत्रे ● सामाजिकता ● सांस्कृतिकता ● प्रादेशिकता ● पंथीय निष्ठा ● तत्त्वज्ञान व मूल्यविचार	१५	१
विभाग ३ Module III	■ दृष्टांतपाठातील अभिव्यक्ती विशेष ● निवेदन/कथनशैली ● व्यक्तिचित्रणे ● घटना, प्रसंगवर्णने ● प्रतिमा व प्रतीके ● रचनाविशेष	१५	१
विभाग ४ Module IV	■ दृष्टांतपाठातील भाषावैभव ● शब्दसौष्ठव ● अल्पाक्षरत्व ● सुलभ रचनाविशेष ● म्हणी, वाक्प्रचार, उखाणे ● अलंकार वैभव ● व्याकरणिक विशेष	१५	१

* प्रश्नपत्रिकेचे स्वरूप व गुणविभागणी *

Pattern of Question Paper

एकूण गुण - ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	टिपा लिहा (चार पैकी दोन)	१० गुण

सूचना : १. विभाग एकवर वस्तुनिष्ठ प्रश्न असणार नाहीत.

२. अंतर्गत मूल्यमापनाकरिता सेमिनारसाठी दहा गुण आहेत.

सेमिनार विषय :

मध्ययुगीन मराठी वाङ्मयातील कोणत्याही एका साहित्यकृतिआधारे सामाजिक, सांस्कृतिक, मूल्यविचार, भाषाविशेष इत्यादींपैकी कोणत्याही एका विषयानुषंगाने सादरीकरण करणे.

मूलभूत वाचन :

१. तुळपुळे, शं. गो. (संपा.)	दृष्टांतपाठ, केशिराज संकलित, व्हीनस प्रकाशन, पुणे
२. कोलते, वि. भि.	महानुभाव तत्त्वज्ञान, अरुण प्रकाशन, मलकापूर
३. कोलते, वि. भि.	महानुभाव आचारधर्म, अरुण प्रकाशन, मलकापूर
४. राजनकर, सुहास	दृष्टांतपाठ : अन्वय आणि चिकित्सा, ऋचा प्रकाशन, नागपूर
५. कुंदप, कोमल कन्हैया	चक्रधर निरुपन दृष्टांतपाठ विवेचन, सातारा

पूरक वाचन :

१. पठाण, यू. म.	महानुभाव साहित्य संशोधन खंड १, मराठवाडा विद्यापीठ प्रकाशन, औरंगाबाद
२. पंजाबी, माधव (संपा.)	श्री. च. पाणी व्यासकृत दृष्टांत अन्वय व्याख्यान
३. आवलगावकर, रमेश	महानुभावांची अन्वयस्थळे, चंद्रकांत प्रकाशन, पुणे
४. ढेरे, रा. चिं.	प्राचीन मराठीच्या नवधारा, मोघे प्रकाशन, कोल्हापूर

संदर्भ ग्रंथ :

१. पानसे, मु. ग.	यादवकालीन महाराष्ट्र, मुंबई मराठी ग्रंथ संग्रहालय, मुंबई
२. बोरगांवकर, वसंत	प्राचीन मराठी चरित्रलेखन, कॉन्टिनेन्टल प्रकाशन, पुणे
३. तुळपुळे, शं. गो.	यादवकालीन मराठी भाषा, व्हीनस प्रकाशन, पुणे
४. देशमुख, उषा	मराठी साहित्याचे आदिबंध, लोकवाङ्मयगृह, मुंबई
५. ढेरे, रा. चिं.	महाराष्ट्राचा देव्हारा, विश्वकर्मा साहित्यालय, पुणे
६. पाठक, अरुणचंद्र	स्थानपोथी : एक पुरातत्वीय अभ्यास, म.रा.साहित्य संस्कृती मंडळ, मुंबई

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Board of Studies in Marathi

पसंतीवर आधारित श्रेयांक पद्धती

Choice Based Credit System

बी.ए. भाग-३ : B.A. Part-III

अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-६ : Semester No. 6 : अभ्यासपत्रिका क्र. XII

Discipline Specific Elective (DSE-E126)

विद्याशाखीय विशेष निवड (DSE-E126)

साहित्यविचार

उद्दिष्टे :

१. शब्दशक्तीचे आकलन करून घेणे.
२. साहित्यातील रसाचे स्वरूप व रसप्रक्रिया समजून घेणे.
३. निर्मितीच्या आनंदाची मीमांसा करणे.
४. व्यवहार भाषा, शास्त्रभाषा आणि साहित्यभाषा यांतील भेद समजून घेणे.
५. साहित्यभाषेचे आकलन करून घेणे.
६. भाषेतील छंद व वृत्ते यांचा अभ्यास करणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	शब्दशक्ती ■ शब्दशक्ती म्हणजे काय ? १) अभिधा-व्याख्या, स्वरूप व प्रकार (योग, रूढी, योगरूढी) २) लक्षणा - व्याख्या, स्वरूप ● लक्षणेस आवश्यक गोष्टी अ) मुख्यार्थबाध ब) मुख्यार्थ-लक्ष्यार्थ संबंध क) रूढी व प्रयोजन ● लक्षणेचे महत्त्व ३) व्यंजना - व्याख्या, स्वरूप ● व्यंजनेचे मुख्य दोन प्रकार अ) शाब्दी व्यंजना ब) आर्थी व्यंजना ● व्यंजनेचे साहित्यातील महत्त्व	१५	१

विभाग २ Module 2	अ) रसविचार ● रस म्हणजे काय ? ● स्थायिभाव व रस ● भरताचे रससूत्र ब) काव्यानंदमीमांसा ● काव्यानंदमीमांसा म्हणजे काय ? ● कवीचा आनंद १) क्रीडानंद २) निर्मितीचा आनंद ३) आत्माविष्कारानंद ● रसिकाचा आनंद १) ज्ञानानंद २) जिज्ञासापूर्ती ३) पुनःप्रत्ययाचा आनंद ● करुणरसानंद १) केवलानंदवाद २) विरेचन (कॅथार्सिस)	१५	१
घटक ३ Module 3	साहित्याची भाषा १) व्यवहारभाषा, शास्त्रभाषा व साहित्यभाषा : साम्यभेद २) साहित्याचे माध्यम भाषा ३) साहित्य भाषेचे सौंदर्य ४) साहित्य भाषेची विविधता	१५	१
घटक ४ Module IV	छंद व वृत्ते अ) छंद - १) ओवी २) अभंग ३) मुक्तछंद ब) वृत्ते - १) भुजंगप्रयात २) वसंततिलका ३) दिंडी (व्याख्या, स्वरूप व उदाहरणे अपेक्षित)	१५	१

* प्रश्नपत्रिकेचे स्वरूप व गुणविभागणी *

Pattern of Question Paper

एकूण गुण - ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	छंद व वृत्ते (चार पैकी दोन)	१० गुण

सूचना :

१. विभाग चार वर वस्तुनिष्ठ प्रश्न असणार नाहीत.
२. गटप्रकल्पासाठी अंतर्गत मूल्यमापनाकरिता प्रती विद्यार्थ्यास दहा गुण आहेत.

गटप्रकल्प विषय : साहित्यनिर्मितिप्रक्रिया संदर्भात कोणत्याही एका साहित्यिकाची मुलाखत घेणे.

मूलभूत वाचन :

१. जोग, रा. श्री. अभिनव काव्यप्रकाश, व्हीनस प्रकाशन, पुणे, आवृत्ती ७ वी, जानेवारी, १९७५
२. गाडगीळ, स. रा. काव्यशास्त्रप्रदीप, व्हीनस प्रकाशन, पुणे, आवृत्ती ४ थी, जानेवारी, १९९३
३. वाटवे, के. ना. रसविमर्श, नवीन किताबखाना, पुणे, १९४२
४. वाळंबे, मो. रा. सुगम मराठी व्याकरण लेखन, नितीन प्रकाशन, पुणे
५. नेमाडे, भालचंद्र साहित्याची भाषा, साकेत प्रकाशन, औरंगाबाद, आ. दु. १९९८

पूरक वाचन :

१. जोशी, पं. महादेवशास्त्री सुलभ काव्याशास्त्र, एस. जगन्नाथ आणि कं., पुणे
२. उपासे, शिवशंकर काव्यशास्त्र परिचय, फडके प्रकाशन, कोल्हापूर, २०१३
३. जाधव, उदय काव्यशास्त्र : आकलन आणि आस्वाद, लोकपाल पब्लिकेशन, औरंगाबाद, प्रथमावृत्ती, ५ सप्टेंबर २०१३
४. शिरवाडकर, के. रं. साहित्यवेध, मेहता पब्लिशिंग हाऊस, पुणे, प्रथमावृत्ती, जानेवारी, १९९८

संदर्भ ग्रंथ :

१. कुरुंदकर, नरहर रससूत्र, इंद्रायणी साहित्य, पुणे.
२. सोनार, ब. लु. भारतीय साहित्य विचार, प्रज्ञा, अमळनेर, १९८८
३. मोरे, मोरेश्वर सखाराम मराठी व्याकरण, चित्रशाळा, पुणे, १९७०
४. वासमकर, वि. दा. मराठीतील कलावादी समीक्षा, अक्षरदीप प्रकाशन, कोल्हापूर, आ. प. २०१८
५. तुकदेव, रोहिणी ओवी छंद : रूप आणि आविष्कार, प्रतिमा प्रकाशन, पुणे
६. हिरेमठ, राजशेखर मराठी व्याकरण परिचय, मेहता पब्लिशिंग हाऊस, पुणे, १९८८
७. जाधव, मा. मा. अक्षरगाथा (मराठी साहित्यविचार विशेषांक), मासिक, नांदे, एप्रिल, २०१४

शिवाजी विद्यापीठ, कोल्हापूर
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Board of Studies in Marathi

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Choice Based Credit System

बी.ए. भाग-३ : B.A. Part-III

अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-६ : Semester No. 6 : अभ्यासपत्रिका क्र. XIII

Discipline Specific Elective (DSE-E127)

विद्याशास्त्रीय विशेष निवड (DSE-E127)

मराठी भाषा व भाषाविज्ञान

उद्दिष्टे :

१. मराठी भाषेची वर्णव्यवस्था समजून घेणे.
२. ध्वनी व अर्थपरिवर्तनाची कारणे व प्रकार यांची माहिती करून घेणे.
३. प्रमाणभाषेचे स्वरूप व विशेष अभ्यासणे.
४. बोलींचे स्वरूप व विशेष समजून घेणे.
५. मराठी भाषेबद्दलची विद्यार्थ्यांची आवड विकसित करणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	मराठीची वर्णमाला ● ध्वनी व वर्ण, मराठीची वर्णमाला, पारंपरिक स्वर व त्यांचे वर्गीकरण ● स्वरांचे ध्वनिशास्त्रदृष्ट्या व उच्चारण स्थानानुसार विश्लेषण ● स्वरांचे प्रकार ह्रस्व, दीर्घ, सिद्ध, साधित, सजातीय, विजातीय ● मराठीची स्वर संख्या (पारंपरिक व नवीन) ● मराठीतील व्यंजन विचार ● व्यंजनांचे प्रकार १. स्पर्श व्यंजने २. कठोर व मृदू व्यंजने ३. अल्पप्राण व महाप्राण ४. अनुनासिके ५. तालव्य व्यंजने ६. अंतःस्थ व्यंजने ७. उष्म व्यंजने ८. संयुक्त व्यंजने ९. मृध्न्य ● मराठीची व्यंजन संख्या (पारंपरिक व नवीन) ● मराठीची वर्ण संख्या निश्चितीकरण	१५	१

विभाग २ Module II	मराठीचे ध्वनिपरिवर्तन - भाषेची उच्चारप्रक्रिया - ध्वनिपरिवर्तन म्हणजे काय? - व्याख्या आणि विशेष निरपवाद, नियमित, अज्ञेय, सार्वत्रिक ध्वनिपरिवर्तन - कारणे जित - जेते संबंध, भिन्न भाषिक संबंध, आळस, अनुकरणाची अपूर्णता, वागेंद्रियातील दोष, श्रवणेंद्रियातील दोष, उच्चारशीघ्रता, अज्ञान, आघात, उच्चारसौकर्य, आहार, भौगोलिकता, वर्गसिद्धान्त, लोकभ्रम, सादृश्यता - प्रकार अंत्यस्वनलोप, एकस्वनीकरण, आद्यस्वनागम, मध्यस्वनागम, अंत्यस्वनागम, सान्निध्य परिणाम, समानस्वनलोप, विसदृशीकरण, घोषीकरण, अघोषीकरण, मात्राभेद, सदृशता, अतिशुद्धी, दुष्प्रयोग, स्वनविपर्यय - ध्वनिपरिवर्तनाचा मराठी भाषेवरील परिणाम	१५	१
विभाग ३ Module III	मराठीचे अर्थपरिवर्तन - अर्थपरिवर्तन म्हणजे काय ? - व्याख्या आणि स्वरूप अर्थ म्हणजे निर्देश, प्रतिमा, संकल्पना व विचार - अर्थपरिवर्तनाची कारणे साम्यतत्त्व, रूपक - लक्षणाजन्य शब्द, बदलते समाजजीवन, अशुभतापरिहार, ग्राम्यतापरिहार, अतिशयोक्ती, शब्दसिद्धी, अतिपरिचयातून सभ्यता, अत्यादरदर्शन, सांस्कृतिक आदान - अर्थपरिवर्तनाचे प्रकार - अर्थविस्तार, अर्थसंकोच, अर्थप्रशस्ती, अर्थच्युती, अर्थापकर्ष, अर्थान्तर, अर्थभ्रंश, अर्थदेश, अर्थभेद, अर्थसार - अर्थपरिवर्तनाचा मराठी भाषेवरील परिणाम	१५	१
विभाग ४ Module IV	प्रमाण मराठी भाषा आणि तिच्या बोली - प्रमाण मराठी : संकल्पना, स्वरूप, विशेष - बोली : संकल्पना, स्वरूप, विशेष - मराठीच्या बोली : अहिराणी, वऱ्हाडी, चंदगडी, मालवणी या निवडक बोलींचे स्वरूप व विशेष	१५	१

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	टिपा लिहा (चार पैकी दोन)	१० गुण

सूचना : १. विभाग एकवर वस्तुनिष्ठ प्रश्न असणार नाही.

२. अंतर्गत मूल्यमापनाकरिता सेमिनारसाठी दहा गुण आहेत.

गटप्रकल्प विषय :

१. आपल्या परिसरातील कौटुंबिक, सांस्कृतिक, कृषिविषयक, औद्योगिक क्षेत्रात जी बोलीभाषा बोलली जाते त्या बोलीभाषेतील शब्द, वाक्य, वाक्प्रचार, म्हणी, उखाणे यांचे संकलन आणि विश्लेषणासह गटप्रकल्प अपेक्षित.
२. आपल्या परिसरातील लोककथा, लोकगीते यांचे संकलन करून त्यातील भाषिक विशेषांच्या विश्लेषणावर आधारित गटप्रकल्प अपेक्षित.

मूलभूत वाचन :

१. कुलकर्णी, कृ. पां.	मराठी भाषा : उद्गम आणि विकास, मेहता पब्लिशिंग हाऊस, पुणे
२. कानडे, मु. श्री. (संपा.)	मराठीचा भाषिक अभ्यास, स्नेहवर्धन प्रकाशन, पुणे
३. गजेंद्रगडकर श्री. न.	भाषा आणि भाषाशास्त्र, व्हीनस प्रकाशन, पुणे
४. कुलकर्णी कृ. पां.	शब्द : उद्गम आणि विकास
५. जोगळेकर गं. ना.	अभिनव भाषाविज्ञान, सुविचार प्रकाशन, पुणे
६. जोशी, प्र. न.	सुबोध भाषाशास्त्र, स्नेहवर्धन प्रकाशन, पुणे
७. दामले, मो. के.	शास्त्रीय मराठी व्याकरण, दामोदर सावळाराम आणि मंडळी, पुणे
८. कालेलकर, ना. गो.	ध्वनिविचार, मौज प्रकाशन, मुंबई
९. पोतदार, अनुराधा	मराठीचा अर्थविचार, पुणे विद्यापीठ प्रकाशन, पुणे
१०. कालेलकर, ना. गो.	भाषा आणि संस्कृती, मौज प्रकाशनगृह, मुंबई
११. देवी, गणेश व जाखडे, अरुण (संपा.)	भारतीय भाषेचे लोकसर्वेक्षण, पद्मगंधा प्रकाशन, पुणे

पूरक वाचन :

१. हिरेमठ, राजशेखर	मराठी व्याकरण परिचय, मेहता पब्लिशिंग हाऊस, पुणे
२. गवळी, अनिल	भाषाविज्ञान आणि मराठी भाषा, हिरण्यकेशी प्रकाशन, कोल्हापूर
३. कुलकर्णी, सुलक्षणा व कुबेर, वसंत	भाषाविज्ञान परिचय, फडके प्रकाशन, कोल्हापूर

संदर्भ ग्रंथ :

१. पुंडे, द. दि.	सुलभ भाषाविज्ञान, स्नेहवर्धन प्रकाशन, पुणे
२. कदम, महेंद्र	मराठीचे वर्णनात्मक भाषाविज्ञान, स्नेहवर्धन प्रकाशन, पुणे
३. कालेलकर, ना. गो.	भाषा, इतिहास आणि भूगोल, मौज मुंबई
४. शेख, यास्मिन	मराठी लेखन मार्गदर्शिका, राज्य मराठी विकास संस्था, मुंबई
५. हिरेमठ, राजशेखर	मराठी व्याकरण परिचय, मेहता पब्लिशिंग हाऊस, पुणे
६. लामतुरे, प्रज्ञा	ग्रामीण बोलीभाषेचे वैभव, संस्कृती प्रकाशन, पुणे
७. जंबाले, विठ्ठल	ग्रामीण कादंबरी : मराठवाडी बोलीचे स्वरूप, चिन्मय प्रकाशन, औरंगाबाद
८. पाटील, व्ही. एन.	सुलभ भाषाविज्ञान, प्रशांत पब्लिकेशन्स, जळगाव, २०१६
९. भांड, बाबा व मगर, राजेंद्र	भाषा आणि साहित्य : माझी भूमिका : सयाजीराव गायकवाड, महाराजा सयाजीराव गायकवाड संशोधन व प्रशिक्षण संस्था, औरंगाबाद
१०. केळकर, तन्मय (अनु.)	पंजाबच्या भाषा आणि लिपीची समस्या : शहीद भगतसिंग, प्रका. भाषाविकास संशोधन संस्था, कोल्हापूर

शिवाजी विद्यापीठ, कोल्हापूर
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Choice Based Credit System

बी.ए. भाग-३ : B.A. Part-III

अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-६ : Semester No. 6 : अभ्यासपत्रिका क्र. XIV

Discipline Specific Elective (DSE-E128)

विद्याशास्त्रीय विशेष निवड (DSE-E128)

मध्ययुगीन मराठी वाङ्मयाचा इतिहास (इ.स.१५०० ते इ.स.१८००)

उद्दिष्टे :

१. मध्ययुगीन मराठी वाङ्मयाचा कालिक अभ्यास करणे.
२. मध्ययुगीन मराठी वाङ्मयाचा स्थूल परिचय करून घेणे.
३. पंडित कवी व त्यांची रचना यांचा परिचय करून घेणे.
४. बखर वाङ्मय आणि शाहिरी वाङ्मय यांचे स्वरूप, विशेष अभ्यासणे.
५. मध्ययुगीन मराठी गद्य, पद्य रचनेचे विशेष अभ्यासणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	इ. स. १५०० ते इ.स. १६०० एकनाथांची साहित्य संपदा चतुःश्लोकी भागवत, एकनाथी भागवत, भावार्थ रामायण, गवळणी, भारुडे इत्यादी रचना	१५	१
विभाग २ Module II	इ. स. १६०० ते इ. स. १७०० (स्थूल कालखंड) अ) तुकारामांची अभंगरचना ब) रामदासांची ग्रंथरचना करुणाष्टके, रामायणे, मनाचे श्लोक, दासबोध, स्फुट प्रकरणे	१५	१
विभाग ३ Module III	इ. स. १६०० ते इ. स. १८०० (स्थूल कालखंड) निवडक पंडित कवींच्या काव्याचा अभ्यास १) मुक्तेश्वर २) वामन पंडित ३) रघुनाथ पंडित ४) श्रीधर ५) मोरोपंत	१५	१
विभाग ४ Module IV	इ. स. १५०० ते इ.स. १८०० (स्थूल कालखंड) अ) बखर वाङ्मय शिवपूर्वकालीन बखरी, शिवकालीन बखरी, पेशवेकालीन बखरी-स्वरूप, विशेष ब) शाहिरी वाङ्मय (लावणी व पोवाडा) १) अनंत फंदी २) परशुराम ३) राम जोशी ४) प्रभाकर ५) होनाजी बाळा	१५	१

Pattern of Question Paper

एकूण गुण - ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	टिपा लिहा (चार पैकी दोन)	१० गुण

सूचना : १. गटप्रकल्पासाठी अंतर्गत मूल्यमापनाकरिता प्रती विद्यार्थ्यास दहा गुण आहेत.

गटप्रकल्प विषय :

* आपल्या परिसरातील कोणत्याही ग्रंथालयातील किंवा ग्रंथालयाबाहेरील मध्ययुगीन मराठी ग्रंथकार आणि ग्रंथ यांची सूची तयार करावी.

* मध्ययुगीन मराठी वाङ्मयातील निवडक शब्दांचा शब्दसंग्रह करणे आणि त्यांचे वर्गीकरण व विश्लेषण करणे.

मूलभूत वाचन :

१. नसिराबादकर, ल. रा.
२. देशपांडे, अ. ना.
३. पांगारकर, ल. रा.
४. मंचरकर, र. बा.
५. गवळी, अनिल
६. सपकाळे, प्रकाश
७. वाटवे, के. ना. (संपा.)
८. फाटक, न. र.
९. सरदेशमुख, त्र्यं. वि.
१०. हेरवाडकर, र. वि.
११. अदवंत, म. ना.
१२. सहस्त्रबुद्धे, म. ना.
१३. खरात, महेश (संपा.)

प्राचीन मराठी वाङ्मयाचा इतिहास, फडके प्रकाशन, कोल्हापूर
प्राचीन मराठी वाङ्मयाचा इतिहास खंड १ ते ४, व्हीनस प्रकाशन, पुणे
प्राचीन मराठी वाङ्मयाचा इतिहास खंड १ ते ३, महाराष्ट्र साहित्य परिषद, पुणे
धर्म संप्रदाय आणि मध्ययुगीन मराठी वाङ्मय, प्रतिमा प्रकाशन, पुणे
सर्वात्मभावी तुकाराम, सायन पब्लिकेशन प्रा. लि. पुणे
संत तुकाराम, प्रशांत पब्लिकेशन्स, जळगाव
प्राचीन मराठी पंडिती काव्य.
श्री एकनाथ वाङ्मय दर्शन आणि कार्य, मौज प्रकाशन गृह, मुंबई
रामदास : प्रतिमा आणि बोध, अस्मिता प्रकाशन, पुणे
मराठी बखर, व्हीनस प्रकाशन, पुणे
पैजण, साहित्य प्रसार केंद्र, नागपूर
मराठी शाहिरी वाङ्मय, ठोकळ प्रकाशन, पुणे
लोकसाहित्य : जीवन आणि संस्कृती, (प्रा.विश्वनाथ शिंदे गौरवग्रंथ), सायन पब्लिकेशन, पुणे

पूरक वाचन :

१. तुळपुळे, शं. गो. (संपा.)
२. तुळपुळे, शं. गो. (संपा.)
३. उपासे, शिवशंकर
४. पाटील, तानाजी
५. हेरवाडकर, र. वि.

मध्ययुगीन मराठी वाङ्मयाचा इतिहास, म. सा. प., पुणे
मराठी वाङ्मयाचा इतिहास, महाराष्ट्र साहित्य परिषद, पुणे
मराठी काव्यातील शिवदैवत दर्शन, आख्यानकाव्य व स्फुटकाव्य : १३ ते १८ वे शतक, शैवभारती शोध प्रतिष्ठान, जंगमवाडी मठ, वाराणसी
संत साहित्यातील सामाजिकता, विश्वकर्मा प्रकाशन, पुणे
मराठी बखर

संदर्भ ग्रंथ :

१. बडवे, सतीश
२. फाटक, न. र.
३. माटे, श्री. म.
४. होनमाने, धनंजय
५. होनमाने, धनंजय
६. ग्रामोपाध्ये, गं. ब.
७. शिंदे, विश्वनाथ
७. केळकर, य. न.
९. मोरजे, गंगाधर
१०. वर्दे, श्री. म.

मध्ययुगीन साहित्याविषयी, मीरा, औरंगाबाद
श्री. रामदास, वाङ्मय आणि कार्य
संत, पंत आणि तंत, ठोकळ प्रकाशन, पुणे
तंजावरची मराठी कीर्तनपरंपरा, स्नेहवर्धन, पुणे
पंत प्रतिनिधींची कीर्तनाख्याने, दर्या प्रकाशन, पुणे
मराठी बखर गद्य, व्हीनस बुक स्टॉल, पुणे
शाहिरी वाङ्मयाच्या धारा, प्रतिमा प्रकाशन, पुणे
मराठी शाहीर आणि शाहिरी वाङ्मय, पुणे विद्यापीठ, पुणे
मन्हाटी लावणी वाङ्मय, मोघे प्रकाशन, कोल्हापूर
मराठी कवितेचा उषःकाल किंवा मराठी शाहीर, मुंबई मराठी साहित्य संघ, मुंबई

शिवाजी विद्यापीठ, कोल्हापूर
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Choice Based Credit System

बी.ए. भाग-३ : B.A. Part-III

अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-६ : Semester No. 6 : अभ्यासपत्रिका क्र. XV

Discipline Specific Elective (DSE-E129)

विद्याशाखीय विशेष निवड (DSE-E129)

मराठी भाषा व अर्थार्जनाच्या संधी

पाठ्यपुस्तक : मराठी भाषा व अर्थार्जनाच्या संधी (संपादन)

शिवाजी विद्यापीठ प्रकाशन, कोल्हापूर

उद्दिष्टे :

१. प्रसारमाध्यमांतील अर्थार्जनाच्या संधी आणि भाषिक कौशल्ये यांचा परिचय करून घेणे.
२. स्पर्धा परीक्षांमध्ये मराठी भाषा विषयाचे महत्त्व समजून घेणे.
३. उद्योग व सेवा क्षेत्रात मराठी भाषेद्वारे अर्थार्जनप्राप्ती संदर्भात ज्ञान संपादन करणे.
४. मुद्रित शोधनाची पद्धत अभ्यासणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	प्रसारमाध्यमांतील अर्थार्जनाच्या संधी व भाषिक कौशल्ये ■ मुद्रित माध्यमे (Print Media) १. संपादन २. स्तंभलेखन ३. जाहिरात लेखन ४. शब्दांकन (नावीण्यपूर्ण उपक्रम, व्यक्तींचे अनुभव व मानपत्र) ■ आकाशवाणी १. निवेदन २. संहिता लेखन (कृषी, महिला व शैक्षणिक विषयक) ३. बातमी लेखन ■ चित्रवाणी १. निवेदन २. संहिता लेखन (साहित्य, युवा व मनोरंजन विषयक) ३. बातमी लेखन	१५	१

विभाग २ Module II	उद्योग व सेवाक्षेत्रातील अर्थार्जनाच्या संधी व भाषिक कौशल्ये ■ उद्योग व सेवाक्षेत्र आणि मराठी भाषा ■ उद्योग व सेवाक्षेत्रातील अर्थार्जन संधी – १. विपणन (Marketing) साठी संवाद कौशल्ये २. ग्राहक सेवा केंद्र (Call Centers) ३. अनुवाद ४. मराठी टंकलेखन, युनिकोड व पीपीटी (Power Point Presentation) परिचय	१५	१
विभाग ३ Module III	मुद्रितशोधन १. मुद्रितशोधन : संकल्पना, स्वरूप, प्रकार व महत्त्व २. महाराष्ट्र शासनाचे प्रमाणलेखनविषयक १८ नियम, अपवाद, उदाहरणे, विरामचिन्हे ३. मुद्रित शोधनाची पद्धत : सांकेतिक खुणा, त्याचे स्पष्टीकरण, पहिले वाचन व पुढील मुद्रितशोधन, संगणकीय मुद्रितशोधन ४. मुद्रितशोधनाचे प्रात्यक्षिक कार्य :वर्तमानपत्र, नियतकालिक, ग्रंथ, छापील मजकूर, लेख इ.	१५	१
विभाग ४ Module IV	स्पर्धा परीक्षांसाठी मराठी १. स्पर्धा परीक्षांचे स्वरूप : सरळसेवा, कम्बाईन, राज्यसेवा, संघ लोकसेवा आयोग २. स्पर्धा परीक्षांमधील मराठीचे स्वरूप : अभ्यासक्रम परिचय ३. स्पर्धा परीक्षेसाठी कौशल्ये : वाचन, नोट्स (टिपणे), लेखन, हस्ताक्षर, वेळेचे व्यवस्थापन, गटचर्चा,संदर्भ साहित्य ४. मुलाखतीची पूर्वतयारी व तंत्रे (मुलाखत कशी द्यावी)	१५	१

* प्रश्नपत्रिकेचे स्वरूप व गुणविभागणी *

Pattern of Question Paper

एकूण गुण – ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	टिपा लिहा (चार पैकी दोन)	१० गुण

सूचना : १. गटप्रकल्पासाठी अंतर्गत मूल्यमापनाकरिता प्रती विद्यार्थ्यास दहा गुण आहेत.

गटप्रकल्प विषय :

१. राष्ट्रीय, शैक्षणिक, सांस्कृतिक, सामाजिक, कृषी, आरोग्य, भाषा व साहित्य क्षेत्रातील ताज्या घडामोडी यापैकी एका विषयावर आकाशवाणी किंवा चित्रवाणीसाठी संहितालेखन.
२. उद्योग व सेवाक्षेत्रे आणि प्रसारमाध्यमे यांना भेटी देऊन तेथील भाषिक उपयोजनावर आधारित प्रकल्प तयार करणे.

मूलभूत वाचन :

१. काणे, पुष्पा	नभोवाणी कार्यक्रम : तंत्र आणि मंत्र, इंडिया बुक कंपनी, पुणे
२. भागवत, यशोदा	बोलका कॅमेरा, मौज प्रकाशन, पुणे
३. राजाध्यक्ष, विजया (संपा.)	मराठी वाङ्मय कोश, साहित्य आणि संस्कृती मंडळ, मुंबई
४. मोरे, सदानंद व लिंगाळे, शरणकुमार	प्रबोधनपर वैचारिक वाङ्मय, य. च. म. मु. विद्यापीठ, नाशिक
५. रेगे, मे. पुं. व इतर	मराठी विचारवंत आणि आपण, मौज प्रकाशन गृह, मुंबई
६. शेख, यास्मिन	मराठी लेखन मार्गदर्शिका, राज्य मराठी विकास संस्था, मुंबई
७. फडके, अरुण	मराठी लेखन-कोश, अंकुर प्रकाशन, ठाणे
८. धायगुडे, य. ए.	मुद्रितशोधन, दि पूना प्रेस ओनर्स असो. लि. पुणे
९. खोपकर, अरुण	चित्रव्यूह, लोकवाङ्मय गृह, प्रकाशन, मुंबई
१०. वरखेडे, रमेश	सायबर संस्कृती, इन्स्टिट्यूट ऑफ नॉलेज इंजिनिअरिंग, नाशिक
११. कांबळे, अमर	स्पर्धा परीक्षेला सामोरे जाताना, निर्मिती संवाद प्रकाशन, कोल्हापूर
१२. कांबळे, अमर	मुलाखत कौशल्य, निर्मिती संवाद प्रकाशन, कोल्हापूर

पूरक वाचन :

१. कुंभार, प्रकाश	उपयोजित भाषाविज्ञान आणि प्रसारमाध्यमे, अक्षरदालन, कोल्हापूर
२. जोशी, प्रभाकर	उपयोजित मराठी, प्रशांत पब्लिकेशन्स, जळगाव
३. तौर, पृथ्वीराज	मराठी भाषिक कौशल्ये विकास, अथर्व पब्लिकेशन्स, धुळे
४. फडके, अरुण	शुद्धलेखन मार्गप्रदीप, अंकुर प्रकाशन, ठाणे
५. दीक्षित, विजय	चित्रपट : एक कला, रेणुका प्रकाशन, नाशिक
६. इनामदार, एस. डी.	माध्यम, एस. डी. प्रकाशन, पुणे

संदर्भ ग्रंथ :

१. देशपांडे, वि. भा. व जोगळेकर, सुषमा (संपा.)	मराठी कलाभिरुची, कॉन्टिनेन्टल प्रकाशन, पुणे
२. पचिंद्रे, श्रीराम	मुलाखत आणि शब्दांकन, अनुबंध प्रकाशन, पुणे
३. ढोले, विश्राम	प्रसारमाध्यमे आणि प्रयोगकला, लोकवाङ्मय गृह, मुंबई
४. शिंदे, अरुण	सत्यशोधकीय नियतकालिके, कृष्णा संशोधन व विकास अकादमी, मंगळवेढा
५. जोशी, प्रभाकर व वले, वासुदेव	उपयोजित मराठी, प्रशांत पब्लिकेशन्स, जळगाव
६. रेगे, मे. पुं. (संपा.)	नवभारत (मासिक), व्यावहारिक मराठी विशेषांक, प्राज्ञ पाठशाळा मंडळ, वाई (ऑगस्ट-सप्टेंबर १९८१)
७. भालके, रामचंद्र व इतर	प्रबोधनपर साहित्य : स्वरूप आणि संकल्पना, य.च.म.मु. विद्यापीठ, नाशिक
८. चपळगावकर, नरेंद्र	मराठीतील वैचारिक साहित्य : लेखक आणि समाज, नवभारत, जून २०१६ वर्ष २९, अंक ९
९. चौसाळकर, अशोक	विचारवंत आणि समाज, युनिक अँकडमी, पुणे
१०. गावडे, गोपाळ	मामा वरेरकर : प्रयोगाची नांदी, मनोकामना प्रकाशन, इस्लामपूर, २०१७
११. कांबळे, विनोद	सर्जननोंदी, वाचनकट्टा प्रकाशन, प्रा. लि., कोल्हापूर, २०१९

शिवाजी विद्यापीठ, कोल्हापूर
SHIVAJI UNIVERSITY, KOLHAPUR

मराठी अभ्यास मंडळ

Board of Studies in Marathi

पसंतीवर आधारित श्रेयांक पद्धती

Choice Based Credit System

बी.ए. भाग-३ : B.A. Part-III

अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-६ : Semester No. 6 : अभ्यासपत्रिका क्र. XVI

Discipline Specific Elective (DSE-E-130)

विद्याशाखीय विशेष निवड (DSE-E-130)

वाङ्मय प्रकाराचे अध्ययन : ललित गद्य (व्यक्तिचित्रे)

पाठ्यपुस्तक : मुलखावेगळी माणसं (संपादन)

शिवाजी विद्यापीठ प्रकाशन, कोल्हापूर

उद्दिष्टे :

१. ललित गद्य वाङ्मयप्रकाराचे स्वरूप अभ्यासणे.
२. व्यक्तिचित्र संकल्पना व स्वरूप समजून घेणे.
३. प्रवाहानुरूप मराठीतील व्यक्तिचित्रांचे स्वरूप अभ्यासणे.
४. 'मुलखावेगळी माणसं' मधील व्यक्तिविशेषांचे आकलन करून घेणे.
५. 'मुलखावेगळी माणसं' मधील शैक्षणिक, सामाजिक, सांस्कृतिक, राजकीय पर्यावरण आणि कौटुंबिक भावविश्व अभ्यासणे.
६. 'मुलखावेगळी माणसं' मधील ग्रामीण व उपेक्षितांच्या जीवनाचे आकलन करून घेणे.
७. 'मुलखावेगळी माणसं' मधील अभिव्यक्ती, निवेदनशैली व भाषाविशेष अभ्यासणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	ललित गद्य : संकल्पना व स्वरूप व्यक्तिचित्रे : संकल्पना, स्वरूप/वैशिष्ट्ये आणि वाटचाल व्यक्तिचित्र लेखनासाठी आवश्यक गुण	१५	१
विभाग २ Module II	१. रामा मैलकुली - व्यंकटेश माडगूळकर २. मृत्यूचे चुंबन घेणारा महाकवी - प्र. के. अत्रे ३. निळू मांग - अण्णाभाऊ साठे ४. मोरणी - विभावरी शिरूरकर	१५	१
विभाग ३ Module III	५. जमीला जावद - हमीद दलवाई ६. यंकटअण्णा - व. वा. बोधे ७. दगडूमामा - उत्तम कांबळे ८. मुंबईचा चित्रकार - अरुण खोपकर	१५	१
विभाग ४ Module IV	९. हीरा - इंद्रजित भालेराव १०. बाबा मास्तर - दि. बा. पाटील ११. दादासाहेब वस्ताद - सयाजीराजे मोकाशी १२. डोकेवाला संशोधक : दादाजी रामजी खोब्रागडे - व्ही.एन.शिंदे	१५	१

Pattern of Question Paper

एकूण गुण - ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	टिपा लिहा (चार पैकी दोन)	१० गुण

सूचना :

१. विभाग एक वर वस्तुनिष्ठ प्रश्न असणार नाहीत.
२. गटप्रकल्पासाठी अंतर्गत मूल्यमापनाकरिता प्रती विद्यार्थ्यास दहा गुण आहेत.

गटप्रकल्प विषय :

आपल्या परिसरातील शैक्षणिक, सामाजिक, सांस्कृतिक, कला, क्रीडा, आरोग्य, राजकीय इत्यादी समाजजीवनाच्या कोणत्याही क्षेत्रातील व्यक्तींची व्यक्तिचित्रे लिखित स्वरूपात प्रती प्रकल्पनुरूप ५ (किमान एका प्रकल्पकास एक नुसार) तयार करून ती एकत्रित जमा करावीत.

मूलभूत वाचन :

१. वास्कर, आनंद (संपा.) वाङ्मयप्रकार संकल्पना (डॉ. विजय निंबाळकर गौरवग्रंथ), अन्वय प्रकाशन, पुणे
२. चौधुले, वि. शं. मुक्तगद्य : संकल्पना आणि उपयोजन, मॅजेस्टिक प्रकाशन, मुंबई, २००८
३. शिंदे, रणधीर ललित गद्य ते मुक्तगद्य (लेख), दै. महाराष्ट्र टाईम्स, २९-१२-२०१३
४. मालशे, मिलिंद साहित्य प्रकाराची संकल्पना (लेख), साहित्य : अध्यापन आणि प्रकार, (संपा.) श्री. पु. भागवत, सुधीर रसाळ, मौज प्रकाशन, मुंबई, १९८७
५. हातकणंगलेकर, जहागीरदार, पवार, गो. मा. मराठी साहित्य : प्रेरणा आणि स्वरूप, पॉप्युलर प्रकाशन, मुंबई, १९८६
६. पुरोहित, के. ज. लघुनिबंध, साहित्य अकादमी, नवी दिल्ली

पूरक वाचन :

१. माडगूळकर, व्यंकटेश माणदेशी माणसं, मेहता पब्लिशिंग हाऊस, पुणे, पुनर्मुद्रण, २०१८
२. अत्रे, प्र. के. मृत्यूचे चुंबन घेणारा महाकवी : साने गुरूजी, पार्श्व पब्लिकेशन, कोल्हापूर, १९६२
३. साठे, अण्णाभाऊ बरबाद्या कंजारी, श्रमिक प्रतिष्ठान, कोल्हापूर, लोकावृत्ती, २०१०
४. शिरूरकर, विभावरी दोघांचे विश्व आणि इतर काही कथा, कॉन्टेनेन्टल प्रकाशन, पुणे, १९५७
५. दलवाई, हमीद जमीला जावद आणि इतर कथा, साधना प्रकाशन, पुणे, २०१६
६. बोधे, व. वा. गावाकडची माणसं, अक्षरबंध प्रकाशन, पुणे, २००७
७. कांबळे, उत्तम कावळे आणि माणसं, मनोविकास प्रकाशन, पुणे, आ.दु., २०१०
८. खोपकर, अरुण चित्रव्यूह, लोकवाङ्मय गृह, मुंबई
९. भालेराव, इंद्रजित गाई घरा आल्या, प्रतिभास प्रकाशन, परभणी
१०. पाटील, दि. बा. भली माणसं, मनोकामना प्रकाशन, इस्लामपूर, २०१३
११. मोकाशी, सयाजीराजे पंधरा ऑगस्ट, मुक्तरंग प्रकाशन, लातूर, २०१६
१२. शिंदे, व्ही. एन. हिरव्या बोट्यांचे किमयागार, तेजस प्रकाशन, कोल्हापूर, २०१९

संदर्भ ग्रंथ :

१. जोशी, प्र. न. मराठी वाङ्मयाचा विवेचक इतिहास, अर्वाचीन काळ (१८०० ते १९८०), स्नेहवर्धन प्रकाशन, पुणे
२. भागवत, श्री. पु. साहित्य अध्यापन आणि प्रकार (प्रा. वा. ल. कुलकर्णी गौरवग्रंथ), मौज प्रकाशन गृह, मुंबई

SHIVAJI UNIVERSITY, KOLHAPUR.



Accredited By NAAC with 'A' Grade

Revised Syllabus For

B.A. Part-III

Hindi.

Syllabus to be implemented from

June, 2020 onwards.

शिवाजी विश्वविद्यालय, कोल्हापुर

हिंदी अध्ययन मंडल

जून 2020 से लागू

हिंदी स्पेशल बी.ए.-3 (कला)

सत्र-V, VI

Discipline Specific Elective

(शैक्षिक वर्ष -2020-21, 2021-22, 2022-23)

प्रस्तुत पाठ्यक्रम का निर्माण विश्वविद्यालय अनुदान आयोग, नई दिल्ली की मॉडल

पाठ्यचर्या (CBCS) के आलोक में किया गया है।

सत्र-V

- प्रश्नपत्र- VII : विधा विशेष का अध्ययन।
प्रश्नपत्र- VIII : साहित्यशास्त्र ।
प्रश्नपत्र- IX : हिंदी साहित्य का इतिहास।
प्रश्नपत्र- X : प्रयोजनमूलक हिंदी ।
प्रश्नपत्र- XI : भाषा विज्ञान और हिंदी भाषा ।

सत्र-VI

- प्रश्नपत्र- XII : विधा विशेष का अध्ययन।
प्रश्नपत्र- XIII : साहित्यशास्त्र और हिंदी आलोचना।
प्रश्नपत्र- XIV : हिंदी साहित्य का इतिहास।
प्रश्नपत्र- XV : प्रयोजनमूलक हिंदी ।
प्रश्नपत्र- XVI : भाषा विज्ञान और हिंदी भाषा ।

सत्र V और VI : परीक्षा में एक प्रश्नपत्र 50 अंकों का होगा, जिसमें 40 अंक लिखित परीक्षा के और 10 अंक अंतर्गत मूल्यांकन के लिए हैं। जिसमें सेमिनार, मौखिकी, परियोजना, (प्रोजेक्ट) गृहकार्य, में से एक देना अनिवार्य है।

शिवाजी विश्वविद्यालय, कोल्हापुर

हिंदी अध्ययन मंडल

जून 2020 से लागू

हिंदी स्पेशल बी.ए.-3 (कला)

सत्र -V प्रश्नपत्र- VII

विधा विशेष का अध्ययन

Discipline Specific Elective (D.S.E.-E6)

(शैक्षिक वर्ष -2020 -21, 2021-22, 2022-23)

प्रस्तुत पाठ्यक्रम का निर्माण विश्वविद्यालय अनुदान आयोग, नई दिल्ली की मॉडल

पाठ्यचर्या (CBCS) के आलोक में किया गया है।

पाठ्यक्रम

उद्देश्य :

1. नाटककार कुसुम कुमार की बहुमुखी प्रतिभा से परिचित कराना।
2. नाटककार कुसुम कुमार के साहित्य से परिचित कराना।
3. नाटककार कुसुम कुमार की विचारधारा से परिचित कराना।
4. नाटककार कुसुम कुमार के निर्धारित ग्रंथ का सूक्ष्म आलोचनात्मक अध्ययन कराना।
5. लेखिका के नाटककार के रूप में साहित्यिक स्थान को निर्धारित कराना।

अध्यापन पद्धति

- स्वाध्याय .
- व्याख्यान, विवेचन तथा विश्लेषण
- संगोष्ठी तथा समूह चर्चा का आयोजन।
- अतिथियों एवं विद्वानों के व्याख्यान।
- दृक श्राव्य माध्यमों का प्रयोग।
- संगणक तथा इंटरनेट आदि साधनों का प्रयोग।

पाठ्यपुस्तक

‘दिल्ली ऊँचा सुनती है’ (नाटक) –कुसुम कुमार

किताबघर प्रकाशन, अन्सारी रोड, दरियागंज,

नई दिल्ली-110002

इकाई 1 कुसुम कुमार का जीवन परिचय, व्यक्तित्व, कृतित्व एवं नाटककार कुसुम कुमार का सामान्य परिचय ।

इकाई 2 ‘दिल्ली ऊँचा सुनती है’– कथावस्तु एवं शीर्षक की सार्थकता ।

इकाई 3 ‘दिल्ली ऊँचा सुनती है’– पात्र एवं चरित्र –चित्रण, संवाद, देशकाल वातावरण ।

इकाई 4 ‘दिल्ली ऊँचा सुनती है’– भाषा शैली, उद्देश्य अभिनेयता एवं समस्याएँ ।

प्रश्नपत्र का स्वरूप एवं अंक विभाजन		अंक
प्रश्न 1	पूरे पाठ्यक्रम पर दस बहुविकल्पी प्रश्न	10
प्रश्न 2	‘दिल्ली ऊँचा सुनती है’ पर ससंदर्भ प्रश्न (3 में से 2)	10
प्रश्न 3	‘दिल्ली ऊँचा सुनती है’ एवं कुसुम कुमार पर लघुत्तरी प्रश्न (3 में से 2)	10
प्रश्न 4	‘दिल्ली ऊँचा सुनती है’ पर दीर्घोत्तरी प्रश्न (अंतर्गत विकल्प के साथ)	10

संदर्भ ग्रंथ सूची–

- डॉ. कुसुम कुमार एक प्रयोगधर्मी नाटककार– डॉ.दत्तात्रय मोहिते, विद्या प्रकाशन, ‘सी’ 449, गुजैनी, कानपुर–208022
- स्वातंत्र्योत्तर हिंदी नाटक–डॉ.रंजन तिवारी, विद्या प्रकाशन, कानपुर–208022
- हिंदी महिला नाटककार–डॉ.भगवान जाधव, विद्या प्रकाशन, कानपुर–208022
- समकालीन हिंदी नाटक– डॉ. जशवंतभाई पंडया, ज्ञान प्रकाशन, कानपुर

सत्र –VI प्रश्नपत्र– XII

DSE-E131

उद्देश्य :

- उपन्यास के तात्त्विक स्वरूप का परिचय देना।
- उपन्यासकार के व्यक्तित्व एवं कृतित्व से परिचित कराना।
- रचना विशेष का महत्त्व समझने एवं मूल्यांकन करने की क्षमता बढ़ाना।
- रचना के आस्वादन एवं समीक्षा की क्षमता विकसित कराना।
- पाठ्यक्रम में निर्धारित उपन्यास की प्रासंगिकता से अवगत कराना।

पाठ्यपुस्तक –अंतिम साक्ष्य (उपन्यास)–चंद्रकांता

अमन प्रकाशन, 104 A/80 सी रामबाग, कानपुर– 12

इकाई 1. चंद्रकांता का जीवन परिचय, व्यक्तित्व, कृतित्व एवं उपन्यासकार चंद्रकांता का सामान्य परिचय।

इकाई 2. 'अंतिम साक्ष्य'–कथावस्तु एवं शीर्षक की सार्थकता।

इकाई 3. 'अंतिम साक्ष्य'–पात्र एवं चरित्र –चित्रण तथा संवाद।

इकाई 4. 'अंतिम साक्ष्य'–देशकाल तथा वातावरण, भाषा शैली, उद्देश्य एवं समस्याएँ।

प्रश्नपत्र का स्वरूप एवं अंक विभाजन		अंक 40
प्रश्न 1	पूरे पाठ्यक्रम पर दस बहुविकल्पी प्रश्न	10
प्रश्न 2	'अंतिम साक्ष्य' पर ससंदर्भ प्रश्न (3 में से 2)	10
प्रश्न 3	'अंतिम साक्ष्य' एवं चंद्रकांता पर लघुत्तरी प्रश्न (3 में से 2)	10
प्रश्न 4	'अंतिम साक्ष्य' पर दीर्घोत्तरी प्रश्न (अंतर्गत विकल्प के साथ)	10

संदर्भ ग्रंथ सूची –

- चंद्रकांता का कथा साहित्य–समकालीन परिवेश तथा संदर्भ–डॉ.अमोल पालकर, विद्या प्रकाशन, कानपुर–208022
- चंद्रकांता का कथा साहित्य–डॉ.जगदीश चव्हाण, विद्या प्रकाशन, कानपुर–208022

शिवाजी विश्वविद्यालय, कोल्हापुर

हिंदी अध्ययन मंडल

जून 2020 से लागू

हिंदी स्पेशल बी.ए.-3 (कला)

सत्र -V प्रश्नपत्र- VIII

साहित्यशास्त्र

Discipline Specific Elective (D.S.E.-E7)

(शैक्षिक वर्ष -2020 -21, 2021-22, 2022-23)

प्रस्तुत पाठ्यक्रम का निर्माण विश्वविद्यालय अनुदान आयोग, नई दिल्ली की मॉडल

पाठ्यचर्या (CBCS) के आलोक में किया गया है।

उद्देश्य :

- 1) साहित्य निर्मिति की प्रक्रिया का बोध कराना।
- 2) साहित्य /काव्य के विभिन्न अंगों, भेदों से परिचित कराना।
- 3) साहित्य/काव्य की नवीन विधाओं से परिचित कराना।
- 4) समीक्षा सिद्धांतों से परिचित कराना।
- 5) साहित्य /काव्य के तत्वों से परिचित कराना।
- 6) अलंकारों से परिचित कराना।

अध्यापन पद्धति –

- स्वाध्याय .
- व्याख्यान, विवेचन तथा विश्लेषण
- भारतीय एवं पाश्चात्य साहित्यशास्त्र का सैद्धांतिक एवं अनुप्रयोग की दृष्टि से।
- संगोष्ठी तथा समूह चर्चा का आयोजन।
- अतिथियों एवं विद्वानों के व्याख्यान।
- दृक श्राव्य माध्यमों का प्रयोग।
- संगणक तथा इंटरनेट आदि साधनों का प्रयोग।

अध्ययनार्थ विषय –

इकाई 1 काव्य/साहित्य – स्वरूप, तत्व, प्रयोजन।

इकाई 2 काव्य के प्रकार, काव्य गुण, काव्य दोष।

इकाई 3 रस – स्वरूप, रस के अंग, रस के भेद।

इकाई 4 अलंकार – शब्दालंकार – अनुप्रास, वक्रोक्ति, यमक, वीप्सा

अर्थालंकार – उपमा, रूपक, अतिशयोक्ति, विभावना।

(केवल लक्षण एवं उदाहरण अपेक्षित)

प्रश्नपत्र का स्वरूप एवं अंक विभाजन		अंक 40
प्रश्न 1	पूरे पाठ्यक्रम पर दस बहुविकल्पी प्रश्न	10
प्रश्न 2	इकाई 2 पर लघुत्तरी प्रश्न (3 में से 2)	10
प्रश्न 3	इकाई 4 पर टिप्पणियां (3 में से 2)	10
प्रश्न 4	इकाई 1 और 3 पर दीर्घोत्तरी प्रश्न (अंतर्गत विकल्प के साथ)	10

सत्र-VI प्रश्नपत्र-XIII
साहित्यशास्त्र और हिंदी आलोचना

DSE-E132

इकाई 1 महाकाव्य – स्वरूप, भारतीय तत्व।

प्रगीत – स्वरूप, भेद।

गजल – स्वरूप, प्रमुख अंग।

इकाई 2 एकांकी – स्वरूप एवं तत्व।

कहानी – स्वरूप एवं तत्व।

उपन्यास – स्वरूप एवं तत्व।

इकाई 3 रेखाचित्र – स्वरूप एवं विशेषताएँ।

आत्मकथा – स्वरूप एवं विशेषताएँ।

यात्रावृत्त – स्वरूप एवं विशेषताएँ।

इकाई 4 आलोचना का स्वरूप।

आलोचक के गुण।

आलोचना के प्रकार –

- 1) व्याख्यात्मक आलोचना।
- 2) तुलनात्मक आलोचना।
- 3) मनोवैज्ञानिक आलोचना।
- 4) ऐतिहासिक आलोचना।

प्रश्नपत्र का स्वरूप एवं अंक विभाजन		अंक 40
प्रश्न 1	पूरे पाठ्यक्रम पर दस बहुविकल्पी प्रश्न	10
प्रश्न 2	इकाई 2 पर लघुत्तरी प्रश्न (3 में से 2)	10
प्रश्न 3	इकाई 4 पर टिप्पणियाँ (3 में से 2)	10
प्रश्न 4	इकाई 1 और 3 पर दीर्घोत्तरी प्रश्न (अंतर्गत विकल्प के साथ)	10

संदर्भ ग्रंथ सूची

- 1) काव्यशास्त्र – भगीरथ मिश्र ।
- 2) शास्त्रीय समीक्षा के सिद्धांत – डॉ.गोविंद त्रिगुणायत ।
- 3) काव्य के रूप – बाबू गुलाबराय ।
- 4) भारतीय काव्यशास्त्र के सिद्धांत – डॉ.कृष्णदेव झारी ।
- 5) भारतीय काव्यशास्त्र – डॉ.मानवेंद्र पाठक ।
- 6) भारतीय साहित्यशास्त्र – डॉ. बलदेव उपाध्याय ।
- 7) साहित्यशास्त्र – डॉ. चंद्रभान सोनवणे ।
- 8) भारतीय काव्यशास्त्र –डॉ.योगेंद्र प्रताप सिंह ।
- 9) हिंदी आलोचना के बीज शब्द – डॉ. बच्चन सिंह ।
- 10) पाश्चात्य साहित्य सिद्धांत विवेचन – डॉ.ओमप्रकाश शर्मा, शैलजा
प्रकाशन, यशोदानगर, कानपुर-208011 ।
- 11) भारतीय एवं पाश्चात्य काव्यशास्त्र – डॉ.त्रिलोकनाथ श्रीवास्तव ,डॉ.गंगासहाय
प्रेमी, साहित्य सरोवर प्रकाशन, जयपुर हाऊस, आगरा-282010 ।

शिवाजी विश्वविद्यालय, कोल्हापुर

हिंदी अध्ययन मंडल

जून 2020 से लागू

हिंदी स्पेशल बी.ए.-3 (कला)

सत्र V प्रश्नपत्र IX

हिंदी साहित्य का इतिहास

Discipline Specific Elective (D.S.E.-E8)

(शैक्षिक वर्ष –2020 –21, 2021–22, 2022–23)

प्रस्तुत पाठ्यक्रम का निर्माण विश्वविद्यालय अनुदान आयोग, नई दिल्ली की मॉडल

पाठ्यचर्या (CBCS) के आलोक में किया गया है।

उद्देश्य :

1. हिंदी भाषा तथा साहित्य की विकास यात्रा से अवगत कराना।
2. हिंदी साहित्य की विकास यात्रा में हिंदी भाषा के माध्यम से अलग-अलग विचारधारा और प्रवृत्तियों से अवगत कराना।
3. छात्रों में साहित्य समझने तथा उसका आस्वादन, मूल्यांकन करने की दृष्टि को बढ़ाना।
4. छात्रों को साहित्य के संदर्भ में विभिन्न साहित्यिक विधाओं के विकास क्रम से परिचित कराना।
5. छात्रों को युगीन सामाजिक, राजनीतिक परिस्थितियों के परिप्रेक्ष्य में हिंदी से अवगत कराना।
6. इतिहासकारों द्वारा प्रस्तुत काल विभाजन और नामकरण को जानने के लिए प्रेरित करना।
7. हिंदी के प्रमुख संत कवि, उनकी रचनाएँ और उनका समाजसुधार में योगदान से परिचित कराना।
8. हिंदी साहित्य के अंतर्गत गद्य-पद्य विधा और उसके भेदों, उपभेदों से अवगत कराना।

9. आदिकाल से लेकर आधुनिक काल तक के संत, महात्मा, लेखक, कवियों की विचारधारा और उनके द्वारा निर्मित साहित्य का सामान्य परिचय कराना।

अध्यापन पद्धति

- स्वाध्याय .
- व्याख्यान, विवेचन तथा विश्लेषण ।
- संगोष्ठी तथा समूह चर्चा का आयोजन।
- अतिथियों एवं विद्वानों के व्याख्यान।
- दृक श्राव्य माध्यमों का प्रयोग।
- संगणक तथा इंटरनेट आदि साधनों का प्रयोग।

अध्ययनार्थ विषय –

इकाई – 1 आदिकाल –

1. आदिकाल का नामकरण।
2. सामाजिक और राजनीतिक परिस्थितियाँ।
3. आदिकाल की प्रतिनिधि रचनाएँ: सामान्य परिचय –
अ) पृथ्वीराज रासो।
आ) बीसलदेव रासो।

इकाई – 2 . भक्तिकाल–

1. भक्तिकालीन सामाजिक परिस्थितियाँ।
2. भक्तिकालीन राजनीतिक परिस्थितियाँ।
3. भक्तिकालीन कवियों का सामान्य परिचय–
अ) संत नामदेव
आ) संत रविदास
इ) संत मीराबाई
ई) गुरु नानक

इकाई – 3 . निर्गुण भक्ति धारा–

1. निर्गुण भक्ति धारा काव्य की सामान्य विशेषताएँ।
2. कबीर : जीवन परिचय एवं कृतित्व।

3. जायसी : जीवन परिचय एवं कृतित्व ।

इकाई – 4 . सगुण भक्ति धारा—

1. सगुण भक्ति धारा काव्य की विशेषताएँ ।

2. तुलसीदास : जीवन परिचय एवं कृतित्व ।

3. सूरदास : जीवन परिचय एवं कृतित्व ।

प्रश्नपत्र का स्वरूप एवं अंक विभाजन		अंक 40
प्रश्न 1	पूरे पाठ्यक्रम पर दस बहुविकल्पी प्रश्न ।	10
प्रश्न 2	इकाई 1 पर लघुत्तरीय प्रश्न (3 में से 2) ।	10
प्रश्न 3	इकाई 2 पर टिप्पणियाँ (3 में से 2) ।	10
प्रश्न 4	इकाई 3 और 4 पर दीर्घोत्तरी प्रश्न (अंतर्गत विकल्प के साथ) ।	10

सत्र VI प्रश्नपत्र –XIV
हिंदी साहित्य का इतिहास
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इकाई – 1 रीतिकाल –

1. रीतिकाल का नामकरण ।
2. सामाजिक एवं राजनीतिक परिस्थितियाँ ।
3. प्रतिनिधि कवियों का सामान्य परिचय –
अ) केशवदास
आ) बिहारी
इ) भूषण
ई) धनानंद ।

इकाई – 2 आधुनिक काल –

1. प्रारंभिक हिंदी गद्य साहित्य का सामान्य परिचय ।
2. आधुनिककालीन सामाजिक एवं राजनीतिक परिस्थितियाँ ।
3. युग प्रवर्तक साहित्यकार—
अ) भारतेन्दु हरिश्चंद्र
आ) जयशंकर प्रसाद
इ) मोहन राकेश

इकाई – 3 आधुनिक गद्य विधाओं का विकास—

1. हिंदी उपन्यास साहित्य उद्भव और विकास ।
2. हिंदी नाटक साहित्य उद्भव और विकास ।
3. हिंदी यात्रा साहित्य उद्भव और विकास ।

इकाई – 4 हिंदी काव्य की विभिन्न धारा और उनकी विशेषताएँ ।

1. छायावाद ।
2. प्रगतिवाद
3. समकालीन कविता ।

प्रश्नपत्र का स्वरूप एवं अंक विभाजन		अंक 40
प्रश्न 1	पुरे पाठ्यक्रम पर दस बहुविकल्पी प्रश्न	10
प्रश्न 2	इकाई 1 पर लघुत्तरीय प्रश्न (3 में से 2)	10
प्रश्न 3	इकाई 2 पर टिप्पणियाँ (3 में से 2)	10
प्रश्न 4	इकाई 3 और 4 पर दीर्घोत्तरी प्रश्न (अंतर्गत विकल्प के साथ)	10

संदर्भ ग्रंथ सूची –

1. हिंदी साहित्य का इतिहास— आचार्य रामचंद्र शुक्ल, जयभारती प्रकाशन, माया प्रेस रोड, इलाहाबाद ।
2. हिंदी साहित्य का इतिहास— डॉ. नगेंद्र, नेशनल पब्लिशिंग हाउस, नई दिल्ली ।
3. हिंदी साहित्य का दूसरा इतिहास— डॉ. बच्चन सिंह, राधाकृष्ण प्रकाशन, नई दिल्ली ।
4. हिंदी साहित्य की भूमिका, डॉ. हजारीप्रसाद द्विवेदी ।
5. हिंदी साहित्य का सही इतिहास— डॉ.चंद्रभानु सोनावने ।
6. हिंदी साहित्य: युग और प्रवृत्तियाँ— डॉ.शिवकुमार शर्मा, अशोक प्रकाशन, दिल्ली ।
7. हिंदी साहित्य का वैज्ञानिक इतिहास— गणपतिचंद्र गुप्त ।
8. मध्यकालीन कवि और कविता— रतन कुमार पाण्डेय, अनभै प्रकाशन, मुंबई ।
9. हिंदी साहित्य का इतिहास— डॉ.पूरनचंद टंडन, जगताराम एंड सन्स, नई दिल्ली ।
10. भक्तिकाल के कालजर्ई रचनाकार—विष्णु दास वैष्णव, कमला प्रकाशन— डीसा गुजरात ।
11. हिंदी साहित्य का इतिहास : नए विचार नई दृष्टि— डॉ. सुरेशकुमार जैन, वाणी प्रकाशन, नई दिल्ली ।
12. सूरदास : एक पुनरावलोकन, डॉ. ओमप्रकाश शर्मा, निराली प्रकाशन, पुणे ।
13. हिंदी साहित्य का इतिहास— डॉ.गंगासहाय प्रेमी, डॉ.अशोक तिवारी, साहित्य सरोवर प्रकाशन, जयपुर हाऊस, आगरा ।
14. संत कबीर व्यक्तित्व एवं रचनाएं—डॉ.मो.मजिद मिया, जीएस पब्लिशर्स डिस्ट्रीब्यूटर्स, शाहदरा— दिल्ली ।
15. षट्कवि : विवेचनात्मक अध्ययन— खण्ड : 1 और 2, डॉ. ओमप्रकाश शर्मा, निराली प्रकाशन, 1312, शिवाजीनगर, जे.एम.रोड, पुणे— 05 ।

शिवाजी विश्वविद्यालय, कोल्हापुर

हिंदी अध्ययन मंडल

जून 2020 से लागू

हिंदी स्पेशल बी.ए.-3 (कला)

सत्र-V प्रश्नपत्र-X

प्रयोजनमूलक हिंदी

Discipline Specific Elective (D.S.E.-E9)

(शैक्षिक वर्ष -2020 -21, 2021-22, 2022-23)

प्रस्तुत पाठ्यक्रम का निर्माण विश्वविद्यालय अनुदान आयोग, नई दिल्ली की मॉडल

पाठ्यचर्या (CBCS) के आलोक में किया गया है।

उद्देश्य :

1. हिंदी में कार्य करने की रुचि विकसित करना।
2. रोजगार उन्मुख शिक्षा एवं कौशल्य प्रदान करना।
3. पारिभाषिक शब्दावली से परिचित करना।
4. सरकारी पत्राचार के स्वरूप का परिचय कराना।
5. जनसंचार एवं इलेक्ट्रॉनिक माध्यमों से परिचय कराना।
6. अनुवाद स्वरूप, महत्व तथा उपयोगिता से परिचित कराना।
7. रोजगार परक हिंदी की उपयोगिता स्पष्ट कराना।

अध्यापन पद्धति

- स्वाध्याय .
- व्याख्यान, विवेचन तथा विश्लेषण
- संगोष्ठी तथा समूह चर्चा का आयोजन।
- अतिथियों एवं विद्वानों के व्याख्यान।
- दृक श्राव्य माध्यमों का प्रयोग।
- संगणक तथा इंटरनेट आदि साधनों का प्रयोग।

अध्ययनार्थ विषय –

इकाई – 1 पारिभाषिक शब्दावली ।

दैनिक व्यवहार में प्रयुक्त अंग्रेजी शब्दों के हिंदी पर्यायवाची रूप । (परिशिष्ट में दिए हुए 'अ' तथा 'ब' विभाग के 50 शब्द) ।

इकाई –2 सरकारी कार्यालयीन पत्राचार ।

1. कार्यालय ज्ञापन ।
2. परिपत्र ।
3. कार्यालय आदेश ।
4. सूचना ।
5. अनुस्मारक पत्र ।

इकाई –3 हिंदी भाषा और रोजगार के अवसर ।

1. रेडियो में रोजगार ।
2. विज्ञापन में रोजगार ।
3. अनुवाद में रोजगार ।
4. पत्रकारिता में रोजगार ।
5. फिल्म में रोजगार ।

इकाई –4 समाचार लेखन ।

1. महाविद्यालयीन समारोह का समाचार लेखन ।
2. सामाजिक समारोह का समाचार लेखन ।
3. प्राकृतिक आपदाओं का समाचार लेखन ।
4. दुर्घटनाओं का समाचार लेखन ।

प्रश्नपत्र का स्वरूप एवं अंक विभाजन		अंक 40
प्रश्न 1	पारिभाषिक शब्दावली पर दस वस्तुनिष्ठ प्रश्न	10
प्रश्न 2	इकाई 2 पर लघुत्तरीय प्रश्न (3 में से 2) ।	10
प्रश्न 3	इकाई 3 पर टिप्पणियाँ (3 में से 2) ।	10
प्रश्न 4	इकाई 4 पर दीर्घोत्तरी प्रश्न (अंतर्गत विकल्प के साथ) ।	10

परिशिष्ट (अ)

पारिभाषिक शब्दावली

	जनसंचार माध्यम संबंधी शब्द	
1.	Announcer	निवेदक
2.	Artistic	कलात्मक
3.	Audio-Visual	दृक—श्राव्य
4.	Banner	पताका
5.	Biographer	जीवनीकार
6.	Biweekly	अर्धसाप्ताहिक
7.	Bulletin	विज्ञापित
8.	Catalogue	सूची
9.	Calligraphy	सुलेखन
10.	Caption	शीर्षक / चित्र परिचय
11.	Cartoonist	व्यंग्य चित्रकार
12.	Choreography	नृत्य रचना
13.	Columnist	स्तंभलेखक
14.	Commentator	समालोचक
15.	Compositer	अक्षर योजक
16.	Communication	संचार
17.	Creation	सृजन
18.	Correspondent	संवाददाता
19.	Information Technology	सूचना तंत्रज्ञान
20.	Interview	साक्षात्कार
21.	Interruption	रूकावट
22.	Journalist	पत्रकार
23.	Magazine	पत्रिका
24.	Source Language	स्रोत भाषा
25.	Transliteration	लिप्यंतरण

परिशिष्ट (ब)

शिक्षा सभा और संमेलन संबंधी शब्द

1.	Abstract	सार संक्षेप
2.	Academic Goal	शैक्षिक ध्येय
3.	Address	अभिभाषण संबोधन
4.	Adult Education	प्रौढ शिक्षा
5.	Agenda	कार्यसूची
6.	Anniversary	जयंती वर्षगाँठ
7.	Anthology	संकलन / संग्रह
8.	Appraisal	मूल्यांकन
9.	Attestation	साक्षांकन / अनुप्रमाणन
10.	Audience	श्रोतागण
11.	Autonomous	स्वायत्त
12.	Bibliography	संदर्भ ग्रंथ सूची
13.	Bachelor	स्नातक
14.	Closing Speech	समापन भाषण
15.	Conference Hall	सम्मेलन भवन
16.	Conclusion	समापन
17.	Document	दस्तावेज
18.	Draft	प्रारूप मसौदा
19.	Guardian	अभिभावक
20.	Humanity	मानविकी
21.	Hypothesis	परिकल्पना
22.	Inauguration	उद्घाटन
23.	Informal	अनौपचारिक
24.	Symposium	संगोष्ठी
25.	Viva-Voce	मौखिक परीक्षा

सत्र-VI प्रश्नपत्र-XV

प्रयोजनमूलक हिंदी

DSE-E134

अध्ययनार्थ विषय –

इकाई –1 पारिभाषिक शब्दावली.

दैनिक व्यवहार में प्रयुक्त अंग्रेजी शब्दों एवं पदनामों के हिंदी पर्यायवाची रूप (परिशिष्ट में दिए हुए 'क' तथा 'ड' विभाग के शब्द एवं पदनाम)

इकाई –2. संदर्भ स्रोतों का सामान्य परिचय :

1. इन्स्टाग्राम
2. फेसबुक
3. व्हाट्सअप
4. ट्विटर
5. ब्लॉग

इकाई-3. जनसंचार इलेक्ट्रॉनिक माध्यमों का सामान्य परिचय :

1. दूरदर्शन
2. इंटरनेट
3. डाक्यूटमेंटरी
4. व्हिडिओ कॉफ्रेंस
5. यु ट्यूब

इकाई –4 अनुवाद

1. अनुवाद स्वरूप और महत्व ।
2. अनुवाद की उपयोगिता ।
3. प्रकृति के आधार पर अनुवाद के प्रकार ।
4. अनुवादक के गुण ।

प्रश्नपत्र का स्वरूप एवं अंक विभाजन		अंक 40
प्रश्न 1	पारिभाषिक शब्दावली पर दस वस्तुनिष्ठ प्रश्न	10
प्रश्न 2	इकाई 2 पर लघुत्तरी प्रश्न (3 में से 2)	10
प्रश्न 3	इकाई 3 पर टिप्पणियाँ (3 में से 2)	10
प्रश्न 4	इकाई 4 पर दीर्घोत्तरी प्रश्न (अंतर्गत विकल्प के साथ)	10

संदर्भ ग्रंथ सूची –

1. जनसंचार और पत्रकारिता–विविध आयाम– डॉ.ओमप्रकाश शर्मा, निराली प्रकाशन, पुणे ।
2. मिडिया कालीन हिंदी स्वरूप एवं संभावनाएँ–डॉ. अर्जुन चव्हाण, राधाकृष्ण प्रकाशन नई, दिल्ली ।
3. प्रयोजनमूलक हिंदी की नयी भूमिका–डॉ. कैलाशनाथ पाण्डेय, लोकभारती प्रकाशन, इलाहाबाद, नई, दिल्ली ।
4. प्रयोजनमूलक हिंदी– डॉ. विनोद गोदरे, वाणी प्रकाशन, नई दिल्ली ।
5. प्रयोजनामूलक हिंदी– विविध परिदृश्य–डॉ.रमेशचंद्र त्रिपाठी, डॉ.पवन अग्रवाल, अलका प्रकाशन, कानपुर ।
6. हिंदी भाषा और सूचना प्रौद्योगिकी–डॉ. दीपक रामा तुपे, अभिषेक प्रकाशन, दिल्ली ।
7. हिंदी भाषा में रोजगार के अवसर–प्रा.विकास पाटील, ए.बी.एस. पब्लिकेशन वाराणसी ।
8. मिडिया में कैरियर– पी.के. आर्य, ग्रंथ अकादमी, नई दिल्ली ।
9. प्रयोजनमूलक हिंदी, 'साहित्य सरोवर' –डॉ.श्रीमती आशा मोहन, साहित्य सरोवर प्रकाशन, प्रभु नगर, आगरा–280101
10. मिडिया : एक अंतर्यात्रा– डॉ.स्मिता मिश्र, मंजुली प्रकाशन, नई दिल्ली–23 ।

परिशिष्ट (क)

	अंग्रेजी के हिंदी वाक्यांश	
1.	Above Mentioned / Said	उपर्युक्त
2.	According to	के अनुसार
3.	After discussion	विचार विवर्ष के बाद
4.	Age of retirement	सेवानिवृत्ति की उम्र
5.	As directed	निर्देशानुसार
6.	Effective Control	प्रभावी नियंत्रण
7.	Examine the proposal	प्रस्ताव की जाँच करें
8.	Eligibility is certified	पात्रता प्रमाणित की जाती है
9.	Facilities are not available	सुविधाएँ उपलब्ध नहीं हैं
10.	For Compliance	अनुपालन के लिए
11.	For perusal	अवलोकनार्थ
12.	Gain Wrongfully	अनुचित रूप से प्राप्त करना
13.	Grant of permission	अनुमति देना
14.	Gross negligence	घोर उपेक्षा
15.	Noted and returned	नोट करके वापस किया जाता है
16.	Not in vogue	प्रचलित नहीं हैं
17.	Not satisfactory	संतोषजनक नहीं हैं
18.	Objection is Not valid	आपत्ति वैद्य/मान्य नहीं हैं
19.	On probation	परिवीक्षाधीन
20.	Order was cancelled	आदेश रद्द
21.	Paper under consideration	विचाराधीन पत्र
22.	Passed for payment	भुगतान के लिए पास किया
23.	Pending Cases	प्रलंबित मामले
24.	I agree	मैं सहमत हूँ
25.	In anticipation of	की प्रतीक्षा में

परिशिष्ट (ड)

	पदनाम संबंधी शब्द	
1.	Adviser	सलाहकार
2.	Accountant	लेखाकार
3.	Advocate	अधिवक्ता
4.	Cashier	रोकडिया / खजौंची
5.	Custodian	अभिरक्षक

6.	Councillor	पार्षद
7.	Director	निदेशक
8.	Executive Engineer	कार्यकारी अभियंता
9.	Foreign secretary	विदेश सचिव
10.	Governor	राज्यपाल
11.	His majesty	महामहिम
12.	Investigator	अन्वेषक
13.	Manager	प्रबंधक
14.	Member of legislative Assembly	विधायक
15.	Member of parliament	सासंद / संसद सदस्य
16.	President	राष्ट्रपति
17.	Prime minister	प्रधानमंत्री
18.	Registrar	कुलसचिव
19.	Speaker	सभापति
20.	Stenographer	आशुलिपिक
21.	Superintendent	अधीक्षक
22.	Treasurer	कोषाध्यक्ष
23.	Under secretary	अवर सचिव
24.	Vice Chancellor	कुलपति
25.	Warden	रक्षक

शिवाजी विश्वविद्यालय, कोल्हापुर

हिंदी अध्ययन मंडल

जून 2020 से लागू

हिंदी स्पेशल बी.ए.-3 (कला)

सत्र-V प्रश्नपत्र-XI

भाषा विज्ञान और हिंदी भाषा

Discipline Specific Elective (D.S.E.-E10)

(शैक्षिक वर्ष -2020 -21, 2021-22, 2022-23)

प्रस्तुत पाठ्यक्रम का निर्माण विश्वविद्यालय अनुदान आयोग, नई दिल्ली की मॉडल

पाठ्यचर्या (CBCS) के आलोक में किया गया है।

उद्देश्य :

- 1) भाषा के विविध रूपों का परिचय कराना ।
- 2) भाषा विज्ञान का सामान्य परिचय कराना ।
- 3) हिंदी भाषा एवं लिपि के उद्भव और विकास का परिचय कराना ।
- 4) भाषा की शुद्धता के प्रति छात्रों को जागृत करना ।
- 5) मानक हिंदी वर्तनी और व्याकरण से छात्रों को परिचित कराना ।

अध्यापन पद्धति

- स्वाध्याय .
- व्याख्यान, विवेचन तथा विश्लेषण
- संगोष्ठी तथा समूह चर्चा का आयोजन।
- अतिथियों एवं विद्वानों के व्याख्यान।
- दृक श्राव्य माध्यमों का प्रयोग।
- संगणक तथा इंटरनेट आदि साधनों का प्रयोग।

अध्ययनार्थ विषय –

इकाई 1– भाषा की परिभाषाएँ, भाषा की विशेषताएँ, भाषा की उत्पत्ति एवं तत्संबंधी विविध वाद-दैवी उत्पत्ति सिद्धांत, धातु सिद्धांत, अनुकरण सिद्धांत, श्रमपरिहार सिद्धांत, मनोभावाभिव्यंजक सिद्धांत, समन्वित सिद्धांत ।

इकाई 2– भाषा परिवर्तनशीलता के कारण ।

भाषा के विविध रूप– बोली और परिनिष्ठित भाषा ।

बोलियों के बनने के कारण, बोली और भाषा में अंतर ।

इकाई 3– हिंदी भाषा का उद्भव और विकास ।

हिंदी का शब्दसमूह, हिंदी भाषा के विविध रूप–राष्ट्रभाषा, राजभाषा, संपर्क भाषा ।

इकाई 4 – हिंदी की विविध बोलियाँ–अवधी, ब्रज, खड़ीबोली, भोजपुरी ।

लिपि विकास का सामान्य परिचय, देवनागरी लिपि की वैज्ञानिकता ।

प्रश्नपत्र का स्वरूप एवं अंक विभाजन		अंक 40
प्रश्न 1	पुरे पाठ्यक्रम पर दस बहुविकल्पी प्रश्न ।	10
प्रश्न 2	इकाई 3पर लघुत्तरीय प्रश्न (3 में से 2) ।	10
प्रश्न 3	इकाई 4 पर टिप्पणियाँ (3 में से 2) ।	10
प्रश्न 4	इकाई 1 और 2 पर दीर्घोत्तरी प्रश्न (अंतर्गत विकल्प के साथ) ।	10

सत्र – VI प्रश्नपत्र –XVI

भाषा विज्ञान और हिंदी भाषा

DSE-E135

अध्ययनार्थ विषय –

इकाई 1—भाषाविज्ञान की परिभाषाएँ, भाषाविज्ञान के अध्ययन का महत्त्व, भाषाविज्ञान की वैज्ञानिकता ।

इकाई 2 —भाषाविज्ञान के प्रधान अंगों का परिचय—
ध्वनिविज्ञान, पदविज्ञान, शब्दविज्ञान, वाक्यविज्ञान, अर्थविज्ञान ।

इकाई 3 —भाषाविज्ञान का अन्य ज्ञान विज्ञानों से संबंध ।

1. भाषा विज्ञान और साहित्य
2. भाषाविज्ञान और व्याकरण ।
3. भाषाविज्ञान और समाजविज्ञान
4. भाषाविज्ञान और मनोविज्ञान ।
5. भाषाविज्ञान और इतिहास
6. भाषाविज्ञान और भूगोल ।

इकाई 4—कारकों के अर्थ और प्रयोग, पदक्रम, विरामचिह्न (केवल अल्पविराम, निर्देशक चिह्न(डैश) और अवतरणचिह्न) मानक वर्तनी के नियम ।

प्रश्नपत्र का स्वरूप एवं अंक विभाजन		अंक 40
प्रश्न 1	पूरे पाठ्यक्रम पर दस बहुविकल्पी प्रश्न ।	10
प्रश्न 2	इकाई 4 पर लघुत्तरीय प्रश्न (3 में से 2) ।	10
प्रश्न 3	इकाई 2 पर टिप्पणियाँ (3 में से 2) ।	10
प्रश्न 4	इकाई 1 और 3 पर दीर्घोत्तरी प्रश्न (अंतर्गत विकल्प के साथ) ।	10

संदर्भ ग्रंथ सूची

1. भाषाविज्ञान – डॉ.भोलानाथ तिवारी ।
2. भाषाविज्ञान की भूमिका— डॉ.देवेंद्रनाथ शर्मा ।
3. भाषाविज्ञान के तत्व— डॉ. राजनारायण मौर्य ।
4. भाषाविज्ञान और हिंदी भाषा – डॉ. सुधीर कलावडे ।
5. भाषाविज्ञान के सिद्धांत और हिंदी भाषा – डॉ. द्वारकाप्रसाद सक्सेना ।
6. संक्षिप्त भाषाविज्ञान— डॉ.सुरेशचंद्र त्रिवेदी ।
7. हिंदी— उद्भव विकास और रूप – डॉ.हरदेव बिहारी ।

8. हिंदी भाषा – डॉ.धीरेंद्र वर्मा ।
9. हिंदी भाषा की विकास यात्रा – डॉ.रामप्रकाश ।
10. हिंदी भाषा, व्याकरण लिपि विज्ञान – डॉ.हरदान हर्ष ।
11. हिंदी व्याकरण – कामताप्रसाद गुरू ।
12. नागरी लिपि और उसकी समस्याएँ – डॉ.नरेंद्र मिश्र ।
13. हिंदी की वर्तनी– कैलासचंद्र भाटिया, रचना भाटिया ।
14. मानक हिंदी का शुद्धिपरक व्याकरण – डॉ.रमेशचंद्र मेहरोत्रा ।
15. भाषाविज्ञान के सिद्धांत – डॉ.ओमप्रकाश शर्मा निराली, प्रकाशन, पुणे– 05 ।
- 16.भाषा विज्ञान एवं हिंदी भाषा–डॉ.गंगासहाय प्रेमी,डॉ.त्रिलोकनाथ श्रीवास्तव ,साहित्य सरोवर प्रकाशन, प्रभु नगर, आगरा–01 ।

शिवाजी विश्वविद्यालय, कोल्हापुर

हिंदी अध्ययन मंडल

जून 2020 से लागू

हिंदी स्पेशल बी.ए.-3 (कला)

सत्र-V ,VI

Discipline Specific Elective

(शैक्षिक वर्ष -2020-21, 2021-22, 2022-23)

प्रस्तुत पाठ्यक्रम का निर्माण विश्वविद्यालय अनुदान आयोग, नई दिल्ली की मॉडल

पाठ्यचर्या (CBCS) के आलोक में किया गया है।

समकक्षता

अ.क्र	पुराना प्रश्नपत्र	अ.क्र	नया प्रश्नपत्र
1	प्रश्नपत्र क्रमांक : 7	1	प्रश्नपत्र क्रमांक : 7
	प्रश्नपत्र क्रमांक : 12		प्रश्नपत्र क्रमांक : 12
2	प्रश्नपत्र क्रमांक : 8	2	प्रश्नपत्र क्रमांक : 8
	प्रश्नपत्र क्रमांक : 13		प्रश्नपत्र क्रमांक : 13
3	प्रश्नपत्र क्रमांक : 9	3	प्रश्नपत्र क्रमांक : 9
	प्रश्नपत्र क्रमांक : 14		प्रश्नपत्र क्रमांक : 14
4	प्रश्नपत्र क्रमांक : 10	4	प्रश्नपत्र क्रमांक : 10
	प्रश्नपत्र क्रमांक : 15		प्रश्नपत्र क्रमांक : 15
5	प्रश्नपत्र क्रमांक : 11	5	प्रश्नपत्र क्रमांक : 11
	प्रश्नपत्र क्रमांक : 16		प्रश्नपत्र क्रमांक : 16

SHIVAJI UNIVERSITY, KOLHAPUR.



Accredited By NAAC with 'A' Grade

Revised Syllabus For

B.A. Part-III

English

Syllabus to be implemented from

June, 2020 onwards.

Shivaji University, Kolhapur
B. A.III
Compulsory English
Ability Enhancement Compulsory Course (CBCS)
ENGLISH FOR COMMUNICATION
From June 2020 Onwards

Course Objectives:

- To enhance students' communication skills
- To impart employability skills to students
- To prepare students for competitive examinations
- To enable students to acquire professional skills such as media writing
- To enable students to learn manners and etiquettes required at workplace
- To enhance students' reading comprehension skills
- To create interest in English literature among students
- To inculcate human values and ethics in order to enable students' to become good citizens of the country

Course Outcomes: After the completion of the course, the students will be able to:

- Communicate in English, in oral and written modes, in their day-to-day lives as well as at workplaces.
- Face job interviews confidently and efficiently.
- Acquire soft skills required at workplaces and in real life.
- Learn group behavior and team work.
- Learn to value and respect others' opinions and views and develop democratic attitude.
- Face competitive examinations confidently and efficiently with adequate linguistic confidence.
- Acquire professional skills required in media writing such as writing editorials.
- Learn to appreciate and enjoy reading poetry and prose passages.
- Acquire human values and develop cultured outlook.

SEMESTER V AECC 5

MODULE I

- A. Interview Skills
- B. The Interview -V.V. John

MODULE II

- A. Grammar for Competitive Examinations
- B. The Lottery - Shirley Jackson

MODULE III

- A. Writing Skills for Competitive Examinations
- B. After Twenty Years - O' Henry

MODULE IV

- A. I Shall Return To This Bengal - Jibananda Das
- B.(i) Song of Youth - A. P. J. Abdul Kalam
- (ii) The Orphan Girl - Henry Derezio

***Note: Semester V: 10 Marks for Internal Evaluation: STUDENTS' SEMINAR**

SEMESTER VI

AECC 6

MODULE V

- A. Group Discussion
- B. The Lighthouse Keeper of Aspinwall - Henry Sienkiewicz

MODULE VI

- A. Note Making and Note Taking
- B. Three Questions - Leo Tolstoy

MODULE VII

- A. Media Writing
- B. Eight Rupees - Murli Das Melwani

MODULE VII

- A. The Mystic Drum - Gabriel Okara
- B. (i) Two Dead Soldiers- Jean Arasanayagam
(ii) Bora Ring - Judith Wright

***Note: Semester VI: 10 Marks for Internal Evaluation: STUDENTS' GROUP PROJECT**

Division of Teaching Hours 8 Modules x 15 Hours = 120 Hours

Shivaji University, Kolhapur
B. A.III
Compulsory English
Ability Enhancement Compulsory Course (CBCS)
ENGLISH FOR COMMUNICATION

PATTERN OF QUESTION PAPER (June 2020 Onwards)

Semester V (Paper E)

Total Marks: 40

Q. No	Sub Q.	Type of Question	Based on	Marks
Q. 1	A.	Four multiple choice questions with four alternatives to be set	Prose and Poetry	03
	B.	Answer in one word/phrase/sentence each.	Prose and Poetry	03
	C.	Two different Vocabulary Exercises to be set for 1 mark each	Prose and Poetry	02
Q.2	A.	Answer the following questions in 3-4 sentences each. (2 out of 3)	2 on Prose and 1 on Poetry	04
	B.	Write Short Note on the following in about 7-8 sentences each. (1 out of 2)	1 on Prose and 1 on Poetry	04
Q.3	--	Questions to be set on Interview Skills (A or B)	Module I A	08
Q.4	--	Question to be set on Grammar for Competitive Examinations (A or B)	Module II A	08
Q.5	--	Question to set on Writing Skills for Competitive Examinations(A or B)	Module III A	08

Semester VI (Paper F)

Total Marks: 40

Q. No	Sub Q.	Type of Question	Based on	Marks
Q. 1	A.	Four multiple choice questions with four alternatives to be set	Prose and Poetry	03
	B.	Answer in one word/phrase/sentence each.	Prose and Poetry	03
	C.	Two different Vocabulary Exercises to be set for 1 mark each.	Prose and Poetry	02
Q.2	A.	Answer the following questions in 3-4 sentences each. (2 out of 3)	2 on Prose and 1 on Poetry	04
	B.	Write Short Note on the following in about 7-8 sentences each. (1 out of 2)	1 on Prose and 1 on Poetry	04
Q.3	--	Question to be set on Group Discussion(A or B)	Module V A	08
Q.4	--	Question to be set on Note Making and Note Taking(A or B)	Module VI A	08
Q.5	--	Question to set on Media Writing(A or B)	Module VII A	08

Shivaji University, Kolhapur
B. A. Part III
Special English
INTRODUCTION TO LITERARY CRITICISM (CBCS)
Discipline Specific Elective
Semester V (Paper VII) (DSE- E11) & Semester VI (Paper XII) (DSE- E136)
From June 2020 onwards

Course Objectives:

- To introduce students to the major trends in literary criticism.
- To familiarize students with the major critical concepts.
- To help students to study the original contributions made in the field of literary criticism.
- To acquaint students with the various literary and critical movements.
- To train students to write critical appreciation of poetry.

Course Outcomes:

- Students are able to understand the major trends in criticism.
- Students are able to interpret critical concepts.
- Students are able to study the original contributions to literary criticism.
- Students are acquainted with literary and critical movements.
- Students are able to understand the meaning and appreciate the poems critically.

Semester V(Paper VII) (DSE- E11)	
Module I	Introduction to Literary Criticism: 1. Nature of Criticism 2. Function of Criticism
Module II	Classical Criticism: 1. The Concept of Tragedy 2. The Ideal Tragic Hero (From Aristotle's <i>Poetics</i>)
Module III	Neo-classical Criticism: Dr. Samuel Johnson's <i>Preface to Shakespeare</i> (1765)
Module IV	Literary Terms: 1. Symbolism 2. Realism 3. Humour 4. Paradox
Note: Semester V: 10 Marks for Internal Evaluation: STUDENTS' SEMINAR	
Semester VI (Paper XII) (DSE- E136)	
Module V	Romantic Criticism: William Wordsworth's Theory of Poetic Diction (From William Wordsworth's <i>Preface to Lyrical Ballads</i>)
Module VI	Victorian Criticism: Matthew Arnold's Touchstone Method (From Matthew Arnold's <i>The Study of Poetry</i>)
Module VII	Modern Criticism:

	T S Eliot's <i>Tradition and Individual Talent</i> (1919)
Module VIII	Practical Criticism: Poetry
Note: Semester VI: 10 Marks for Internal Evaluation: STUDENTS' GROUP PROJECT	

Division of Teaching Hours 8 Modules x 15 Hours = 120 Hours

Recommended Reading: Semester V and Semester VI

- Abrams, M. H. *A Glossary of Literary Terms* (8th Edition). New Delhi: Akash Press, 2007.
- Alexander, L. G. *Prose and Poetry Appreciation for Overseas Students*. London: Longman Green and Comp. Ltd., 1966.
- Allex, Latter & Rachel, Teubner. *William Wordsworth's Preface to the Lyrical Ballads*. London: Macat Library, 2018.
- Bliss, Perry. *A Study of Poetry*. Kindle Edition, 22 Feb., 2018.
- Butcher, S. C. *Poetics*. New Delhi: Kalyani Publishers, 1978.
- Bywater, Ingram. *Aristotle's Poetics*. Oxford: Atthe Clarendon Press, 1976.
- Cuddon, J. A. *The Penguin Dictionary of Literary Terms and Literary Theory* (4th Edition). London and New York: Penguin, 2000.
- Davis, Joseph, K. Pathea, R Broughton and Michael Wood. *Literature*. Illinois: Scott, Foresman and Comp. Glenviews, 1977.
- Eliot, T.S. *The Sacred Wood – Essays on Poetry and Criticism*. (Seventh edition), 1950.
- Enright, D.J. & Ernst De Chickera. *English Critical Texts: 16th Century to 20th Century*. OUP, 1968.
- Fyfe, Hamilton. *Aristotle's Art of Poetry*. London: OUP, 1940.
- Gray, Martin. *A Dictionary of Literary Terms* (York Handbooks), Pearson Education, 2009.
- Hudson, W. H. *An Introduction to the Study of Literature*. New Delhi: Atlantic, 2007.
- Richards, I. A. *Practical Criticism: A Study of Literary Judgment*. New Delhi: UBS Publishers, 2002.
- Scott James, R. A. *The Making of Literature*. Mumbai: Allied Publishers Pvt. Ltd., 1963.
- Sherbo, Arthur(ed.). *The Yale edition of the works of Samuel Johnson*. Vol.7. New haven: Yale University Press, 1968.
- S. Ramaswami & V. S. Seturaman (ed.) *The English Critical Tradition: An Anthology of English Literary Criticism*, Volume 1,. New Delhi: Macmillan Publishers India Ltd. 1977/2009.
- Seturaman, V. S., C. T. Indra and T. Siraman. *Practical Criticism*. Madras: Macmillan India Ltd., 1995.
- Waugh, Patricia (ed.) *Literary Theory and Criticism: An Oxford Guide*. New York: Oxford University Press, 2006.
- Wimsatt, W. K. and Cleanth Brooks. *Literary Criticism: A Short History*. New Delhi: Oxford and IBH Publishing Company Pvt. Ltd., 1957.
- Wellek, Rene and Austin Warren. *Theory of Literature*. London: Jonathan Cape, 1949.
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Shivaji University, Kolhapur
B. A. Part III
Special English
INTRODUCTION TO LITERARY CRITICISM (CBCS)
Discipline Specific Elective
Semester V (Paper VII) (DSE- E11)
PATTERN OF QUESTION PAPER
From June 2020 onwards

Total Marks: 40

Q1. Objective type Question

- A) Multiple choice questions with four alternatives. 4
- B) Answer the following questions in one word/phrase/sentence each. 4
- (Q1 A and B to be set on topics covering **Module I to IV**)
- (At least one item to be set on each Module)

Q2. Answer the questions in about 250-300 words each.

(A or B to be set on **Module I, II, and III**) 10

Q3. Answer the questions in about 250-300 words each.

(A or B to be set on **Module I, II, and III**) 10

Q3 A. Write short notes on the following: (Any 3 out of 5) 12

(3 to be set on **Module IV** and 2 on **Module I, II, III** not covered in question 2 and 3)

INTRODUCTION TO LITERARY CRITICISM (CBCS)
Semester VI (Paper XII) (DSE- E136)
PATTERN OF QUESTION PAPER
From June 2020 onwards

Total Marks: 40

Q1. Objective type Question

- A) Multiple choice questions with four alternatives. 4
- B) Answer the following questions in one word/phrase/sentence each. 4
- (Q1. A and B to be set on topics covering **Module V to VII**)
- (At least one item to be set on each Module)

Q2. Answer in the questions 250-300 words each.

(A or B to be set on **Module V, VI, and VII**) 10

Q3. Answer the questions in about 250-300 words each.

(A or B to be set on **Module V, VI, and VII**) 10

Q4. Write critical appreciation of the given poem. 12

(with the help of points such as title, theme, content, devices, message, style, rhyme-scheme, diction, type of poem, tone, stanza-pattern, metre, etc. **(Based on Module VIII)**)

EQUIVALENCE

Old Title	New Title
LITERARY CRITICISM AND LITERARY APPRECIATION	INTRODUCTION TO LITERARY CRITICISM

Shivaji University, Kolhapur

B. A.III

English Special

ENGLISH POETRY (CBCS)

Discipline Specific Elective

Semester V (Paper VIII) (DSE – E12) and Semester VI (Paper XIII) (DSE – E137)

(From June 2020 Onwards)

Course Objectives:

- To make students engaged and curious readers of poetry
- To introduce students to poetry from various cultures and traditions
- To make students understand that poetry gives intellectual, moral and linguistic pleasures
- To make students hear and read poems aloud and to memorize lines

Course Outcomes:

- Students will be able to trace the development of the poetry in English from the days of Shakespeare to the contemporary India.
- Students will be able to appreciate and analyze the poems properly.
- Students will have a fairly comprehensive view of the Western and Eastern poetic tradition and they will be able to relate it to various literary movements.
- Students will have an insight into poetry and they will be able to make a lively and interesting reading.

SEMESTER V (Paper VIII) (DSE – E12)		
MODULE NO.	TITLE OF THE MODULE	NAME OF THE POET
I. Topics For Background Readings:		
	1. Elizabethan Poetry	
	2. Metaphysical Poetry	
	3. Romantic Poetry	
II. Selections from Elizabethan Poetry:		
	1. Sweet Warrior (Sonnet 57)	Edmund Spenser
	2. Sonnet To The Moon	Sir Philip Sydney
	3. Full Many A Glorious Morning... (Sonnet 33)	William Shakespeare
III. Selections from Metaphysical Poetry:		
	1. The Sun Rising	John Donne
	2. The Retreat	Henry Vaughan
	3. The Collar	George Herbert
IV. Selections from Romantic Poetry:		
	1. My Heart Leaps Up	William Wordsworth
	2. The Rime of the Ancient Mariner	S. T. Coleridge
	3. Ozymandias	P. B. Shelley
	4. When We Two Parted	Lord Byron
*Note: Semester V: 10 Marks for Internal Evaluation: STUDENTS' SEMINAR		

SEMESTER VI (Paper XIII) (DSE – E137)		
MODULE NO.	TITLE OF THE MODULE	NAME OF THE POET
V. Topics For Background Readings:		
	1. Victorian Poetry	
	2. Modern English Poetry	
	3. Modern Indian English Poetry	
VI. Selections from Victorian Poetry:		
	1. The Lady Of Shallot	Alfred Lord Tennyson
	2. My Last Duchess	Robert Browning
	3. Love Came Down At Christmas	Christiana Rossetti
VII. Selections from Modern English Poetry:		
	1. No Second Troy	W. B. Yeats
	2. The Hollow Men	T. S. Eliot
	3. Tonight I Can Write	Pablo Neruda
VIII. Selections from Modern Indian English Poetry:		
	1. The Professor	Nissim Ezekiel
	2. A Hot Noon in Malabar	Kamala Das
	3. A River	A. K. Ramanujan
	4. A Kind of Happiness	Jayanta Mahapatra
*Note: Semester VI: 10 Marks for internal Evaluation: STUDENTS' GROUP PROJECT		

Division of Teaching Hours: 8 Modules x 15 Hours each= 120 Hours

Recommended Reading: Semester V and Semester VI

Appelbaum, Stanley. *English Romantic Poetry: An anthology*. Dover Publications Inc. 1996.
 Burrow, Colin. *Metaphysical Poetry*. Penguin Classics. 2006.
 Chaudhuri, Roshinka. *A History of Indian Poetry in English*. Cambridge University press. 2016.
 Chaudhuri, Sukanta. *Modern Indian Literature*, New Delhi: OUP, 2004.
 Courthope, W.J. *A History of English Poetry*. Vol.I Macmillan, 1995.
 Craig, W.J. (ed.). *The Complete works of William Shakespeare*. Oxford: OUP., 1905.
 Fenton, James. *An Introduction to English Poetry*. New York: Farrar, Strauss and Giroux, 2004.
 Gardner, Martin, *The Annotated Ancient Mariner*, New York: Clarkson Potter, 1965.
 Harold Bloom and Lionel Trilling. (ed.) *Romantic Prose and Poetry*, New York: OUP, 1973.
 Mitra, Zinia(ed.). *Indian Poetry in English: Critical Essays*. New Delhi: PHI Learning Pvt Ltd., 2012.
 Naik, M.K. *A History of Indian English Literature*. Delhi, 1982.
 Narasimhaiah, C.D., (ed.) *An Anthology of Commonwealth Poetry*, Delhi: Macmillan, 1990.
 Negri, Paul. *English Victorian poetry*. Dover Publications Inc. 1998
 Ramanan, M.G. *Modern English Poetry: A Selection*. New Delhi: Orient Blackswan, 2013.
 Samuel Taylor Coleridge, *Biographia Literaria*, ed. George Watson. London: Everyman, 1993.

Shivaji University, Kolhapur

B. A.III

English Special

ENGLISH POETRY (CBCS)

Discipline Specific Elective

Semester V (Paper VIII) (DSE – E12)

PATTERN OF QUESTION PAPER

From June 2020 Onwards

Marks: 40

- Q1. A) Four multiple choice questions with four alternatives (4)
B) Answer the following questions in one word/ phrase/sentence each. (4)
(Q. 1 A and B to be set on **Module II, III and IV**)
- Q2. Answer the following questions in about 250-300 words. (10)
(A or B to be set on **Module I**)
- Q3. Answer the following questions in about 250-300 words. (10)
(A or B to be set on **Module II, III or IV**)
- Q4. Write Short Notes in about 100-150 words each (3out of 4) (12)
(Two be set on **Module I** and two be on **Module II, III or IV**)
-

ENGLISH POETRY (CBCS)

Discipline Specific Elective

Semester VI (Paper XIII) (DSE – E137)

Marks: 40

- Q1. A) Four multiple choice questions with four alternatives (4)
B) Answer the following questions in one word/ phrase/sentence each. (4)
(Q. 1 A and B to be set on **Module VI, VII and VIII**)
- Q2. Answer the following questions in about 250-300 words. (10)
(A or B to be set on **Module V**)
- Q3. Answer the following questions in about 250-300 words. (10)
(A or B to be set on **VI, VII or VIII**)
- Q4. Write Short Notes in about 100-150 words each (3out of 4) (12)
(Two be set on **Module V** and two be on **Module VI, VII or VIII**)
-

EQUIVALENCE

Old Title	New Title
Understanding Poetry	English Poetry

Shivaji University, Kolhapur
B. A. Part III
Special English
ENGLISH DRAMA (CBCS)
Discipline Specific Elective
Semester V (Paper IX) ((DSE – E13) & Semester VI (Paper XIV) (DSE – E138)
From June 2020 onwards

Course Objectives:

- To make students understand different forms of drama
- To enable students to relate drama to their ideological or socio-political contexts
- To help students improve their creative and imaginative faculties through the reading of drama
- To enable students to know about various aspects of the drama

Course Outcomes:

- Students are able to understand different forms of drama.
- Students are able to relate drama to their ideological or socio-political contexts.
- Students are able to improve their creative and imaginative faculties through the reading of drama.
- Students are able to know about various aspects of the drama.

Semester V (Paper IX) ((DSE – E13)

MODULE I

Definition and Elements of Drama

MODULE II

Tragedy as a Form

MODULE III

The Importance of Being Earnest - Oscar Wilde

MODULE IV

Hamlet – William Shakespeare

Division of Teaching Hours: 4 Modules X 15 Periods = 60 Periods

Prescribed Texts:

Wilde, Oscar. *The Importance of Being Earnest*. New Delhi: General Press, 2018.
Shakespeare, William. *Hamlet*. Penguin Books, 1980.

*Note: Semester V: 10 Marks for Internal Evaluation: STUDENTS' SEMINAR

Semester VI (Paper XIV) (DSE – E138)

MODULE V

Types of Drama

MODULE VI

Comedy as a Form

MODULE VII

Nagmandala – Girish Karnad

MODULE VIII

Harvest – Manjula Padmanabhan

Division of Teaching Hours: 4 Modules X 15 Periods = 60 Periods

Prescribed Texts:

Karnad, Girish. *Nagmandala*. Oxford University Press, 1990.

Padmanabhan, Manjula. *Harvest*. Delhi: Penguin, 1997.

*Note: Semester VI: 10 Marks for Internal Evaluation: STUDENTS' GROUP PROJECT

Recommended Reading: Semester V and Semester VI

Aasand, Hardin L. *Stage Directions in Hamlet: New Essays and New Directions*. NJ: Fairleigh Dickinson University Press, 2003.

Babu, Munchi Sarat. *Indian Drama*. New delhi: Prestige Books, 1997.

Bhatt, S.K. *Indian English Drama: A Critical Study*. New Delhi: Sterling Publishers Pvt. Ltd., 1987.

Bloom, Harold. *The Importance of Being Earnest: Modern Critical Interpretations*. Chelsea House Pub., 1988.

Driver, T.F. *Drama and History*. New York: Columbia University Press, 1967.

Ddiya, Jaydipsinh. (ed.) *The Plays of Girish Karnad: Critical Perspectives*. New Delhi: Prestige Books, 1999.

Gargy, Balwant. *Folk Theatre of India*. Culcutta: Rupa & Co., 1991.

Gillespie, Michael Patrick. *The Importance of Being Earnest*. (Norton Critical Editions). W.W.Norton and Co., 2006.

Hibbard, G.R. (ed.) *Hamlet*. OUP: 1988.

Hirsh, James. *Shakespeare and the History of Soliloquies*. NJ: Farleigh Dickinson University Press, 2003.

Joshi, R.G. *Myth in Indian Drama*. Delhi: B.R. Publishing Corporation, 1984.

Kumar, Nand. *Indian English Drama: A Study in Myths*. New Delhi: Sarup and sons, 2003.

MacCary, Thomas. *Hamlet: A Guide to the Play*. London: Greenwood Press, 1988.

Martin, James. *The Meaning of the 21st Century*. New York: Riverhead Penguin, 2007.

Priestley, J.B. *The Art of the Dramatist*. London: Heinemann, 1957.

Rajkumar, K. *Socio-Political Realities in Harvest*. Purna:RHI,Mahmul, 2012.

Robertson, Ronald. *Globalization: Social Theory and Global Culture*. London: Sage, 1992.

Sen,B. *The Importance of Being Earnest*. Unique Publishers,2015.

Styan, J.L. *The Elements of Drama*. Cambridge: Cambridge University Press, 1967.

Vaidyanathan, G. *The Importance of Being Earnest*. New Delhi: Narain Publications, 2018.

Worthen, W.B. (ed.). *Anthology of Drama* (Fourth edition). London: Cengage Learning EMEA, 2004.

Shivaji University, Kolhapur
B. A. Part III
Special English
ENGLISH DRAMA (CBCS)
Discipline Specific Elective
Semester V (Paper IX) ((DSE – E13)

PATTERN OF QUESTION PAPER

(From June 2020 onwards)

Marks: 40

- Q1. A) Four multiple choice questions with four alternatives (4)
B) Answer the following questions in one word/ phrase/sentence each. (4)
(Q. 1 A and B to be set on **Module III and IV**)
- Q2. Answer the following questions in about 250-300 words. (10)
(A or B to be set on **Module I and II**)
- Q3. Answer the following questions in about 250-300 words. (10)
(A or B to be set on **Module III and IV**)
- Q4. Write Short Notes in about 100-150 words each (3out of 4) (12)
(Two be set on **Module I and II** and two be on **Module III and IV**)
-

ENGLISH DRAMA (CBCS)
Discipline Specific Elective
Semester VI (Paper XIV) (DSE – E138)

PATTERN OF QUESTION PAPER

(From June 2020 onwards)

Marks: 40

- Q1. A) Four multiple choice questions with four alternatives (4)
B) Answer the following questions in one word/ phrase/sentence each. (4)
(Q. 1 A and B to be set on **Module VII and VIII**)
- Q2. Answer the following questions in about 250-300 words. (10)
(A or B to be set on **Module V and VI**)
- Q3. Answer the following questions in about 250-300 words. (10)
(A or B to be set on **VII and VIII**)
- Q4. Write Short Notes in about 100-150 words each (3out of 4) (12)
(Two be set on **Module V and VI** and two be on **Module VII and VIII**)
-

EQUIVALENCE

Old Title	New Title
Understanding Drama	English Drama

Shivaji University, Kolhapur
B. A. Part III Special English
ENGLISH NOVEL (CBCS)

Discipline Specific Elective

Semester V (Paper X) ((DSE – E14) & Semester VI (Paper XV) (DSE – E139)

From June 2020 onwards

Course Objectives:

- To make students understand different forms of novel.
- To enable students to relate novels to their ideological or socio-political contexts.
- To help students to improve their creative and imaginative faculties through the reading of novels.
- To enable students to know about various aspects of the novel.

Course Outcomes:

- Students are able to understand different forms of novel.
- Students are able to relate novels to their ideological or socio-political contexts.
- Students are able to improve their creative and imaginative faculties through the reading of novels.
- Students are able to know about various aspects of the novel.

SEMESTER V (Paper X) (DSE – E14)

MODULE I

Rise and Development of the Novel

MODULE II

Aspects of the Novel

MODULE III

The Old Man and the Sea – Ernest Hemingway

MODULE IV

The Power and the Glory – Graham Greene

Division of Teaching Hours: 4 Modules X 15 Periods = 60 Periods

Prescribed Texts:

Hemingway, Ernest. *The Old Man and the Sea*. New York: Simon & Schuster, 1952.

Greene, Graham. *The Power and the Glory*. New York: Time Reading Special Edition. 1940, 1962.

*Note: Semester V: 10 Marks for Internal Evaluation: STUDENTS' SEMINAR

SEMESTER VI (Paper XV) (DSE – E139)

MODULE V

Historical and Psychological Novel

MODULE VI

Satirical Novel and Epistolary novel

MODULE VII

Animal Farm: A Fairy Tale - George Orwell

MODULE VIII

The Guide - R. K. Narayan

Division of Teaching Hours: 4 Modules X 15 Periods = 60 Periods

Prescribed Texts:

Orwell, George. *Animal Farm: A Fairy Tale*. New York: Signet Classic, 1996.

Narayan, R. K. *The Guide*. US: Viking Press, 1958.

***Note: Semester VI: 10 Marks for internal Evaluation: STUDENTS' GROUP PROJECT**

Suggested Reading: for Semester V and Semester VI

Auden, W. H. *The Enchafed Flood: The Romantic Econography of the Sea*. New York: Random, 1950.

Abrams, M. H. *A Glossary of Literary Terms* (8th Edition) New Delhi, Akash Press – 2007

Bender, Bert. *Sea Brothers: The Tradition of American Sea Fiction from Moby-Dick to the Present*. Philadelphia: University of Pennsylvania Press, 1988.

Bloom, Harold. *Ernest Hemingway's The Old Man and the Sea: Modern Critical Interpretations*. Cheasea House Publications, 2008.

Bradbury, Malcolm. *The Novel Today*. Glasgow: F. C. Paperbacks, 1982.

Brooks and Warren. *Understanding Fiction*. Prentice Hall, 1959.

Dedria, Bryfonski & Hall, Sharon. *Twentieth Century Literary Criticism: George Orwell*. Michigan: Book Tower, 1979.

Edel, Leon. *The Psychological Novel: 1900-1950*. Ludhiana: Kalyani, 1997.

Forster, E. M. *Aspects of Novel*. London. 1949.

Hynes, Samuel, ed. *Graham Greene: A Collection of Critical Essays*. New Jersey: Prentice Hall, Inc. 1973.

Jones, David P. *Graham Greene*. Edinburgh: Oliver and Boyd. 1963.

Kerala, Calling. *From Eric Blair to George Orwell, Biography*. London: Sage, 2003.

Kermode, Frank. *Sense of an Ending*. OUP, 1967.

Lall, Pamji. *Graham Greene: The Power and the Glory: A Critical Study*. New Delhi: Roma Brothers India Pvt. Ltd. 2005.

Lewis, R. W. B. & Conn, Petr J. ed. *Graham Greene: The Power and the Glory: Text and Criticism*. New York: The Viking Press, 1970.

Lubbock, Percy. *The Craft of Fiction*. London: Jonathan Cape, 1965.

Matz, Jesse. *The Modern Novel: A Short Introduction*. Oxford Blackwell, 2004.

Meyers, Jeffery. *George Orwell: The Critical Heritage*. Routledge, 1997.

Rimmon-Kennan, Shlomith. *Narrative Fiction*. London and New York: Routledge, 2005.

Roy, Ruby. *A Critical Study of R. K. Narayan's Swami and Friends and The Guide*. Delhi: Kalpaz Publications, 2015.

Rees, R. J. *Introduction to English Literature*. London: Macmillan, 1966/1968.

Singh, P. K. *The Novels of R. K. Narayan : A Critical Study*. New Delhi: Atlantic Publishers.

Stade, George, ed. *Six Contemporary British Novelists*. New York: Colombia University Press, 1976.

Subramaniam, K. S. *Graham Greene: A Study of Graham Greene's Works*. Bareilly: Prakash Book Depot, 1978.

Vinson, James, ed. *Contemporary Novelists*. London: St. James Press, 1972.

Watt, Ian. *Rise of the Novel*. London: Penguin, 1957.

Woodcock, George. *20th Century Fiction*. London: The Macmillan Press Ltd., 1983.

Shivaji University, Kolhapur
B. A. Part III
Special English
ENGLISH NOVEL (CBCS)
From June 2020 onwards
PATTERN OF QUESTION PAPER FOR
(Semester V Paper X DSE – E14)

Marks: 40

- Q1. A) Four multiple choice questions with four alternatives (4)
B) Answer the following questions in one word/ phrase/sentence each. (4)
(Q. 1 A and B to be set on **Module III and IV**)
- Q2. Answer the following questions in about 250-300 words. (10)
(A or B to be set on **Module I and II**)
- Q3. Answer the following questions in about 250-300 words. (10)
(A or B to be set on **Module III and IV**)
- Q4. Write Short Notes in about 100-150 words each (3out of 4) (12)
(Two be set on **Module I and II** and two be on **Module III and IV**)
-

PATTERN OF QUESTION PAPER FOR
(Semester VI Paper XV DSE – E139)

Marks: 40

- Q1. A) Four multiple choice questions with four alternatives (4)
B) Answer the following questions in one word/ phrase/sentence each. (4)
(Q. 1 A and B to be set on **Module VII and VIII**)
- Q2. Answer the following questions in about 250-300 words. (10)
(A or B to be set on **Module V and VI**)
- Q3. Answer the following questions in about 250-300 words. (10)
(A or B to be set on **VII and VIII**)
- Q4. Write Short Notes in about 100-150 words each (3out of 4) (12)
(Two be set on **Module V and VI** and two be on **Module VII and VIII**)
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EQUIVALENCE

Old Title	New Title
Understanding Novel	English Novel

Shivaji University, Kolhapur
B.A. III
English Special
LANGUAGE AND LINGUISTICS (CBCS)
Discipline Specific Elective
Semester V –Paper XI (DSE - E15) & Semester VI – Paper XVI (DSE - E140)
From June 2020 onwards

LANGUAGE AND LINGUISTICS
Semester V –Paper XI (DSE -E 15)

Course Objectives:

- To orient students to the concept of communication.
- To make the students familiar with varieties of the English language.
- To acquaint students with different levels of the study of language.
- To study the basic units of grammar.

Course Outcomes:

- Students know the concept of communication.
- Students are familiar with varieties of the English language.
- Students know different levels of study of the English language.
- Students know basic units of grammar.

Semester V –Paper XI DSE - E 15

MODULE I

Language and Communication

- i. Definitions and characteristics of language
- ii. Human and Animal communication systems (Special reference to Hockett's 7 characteristics of language)

MODULE II

Phonology

MODULE III

Morphology

MODULE IV

Words

*Note: Semester V: 10 Marks for Internal Evaluation: STUDENTS' SEMINAR

Division of Teaching Hours: 4 Modules X 15 Periods = 60 Periods

Reference Books :

- Balasubramaniam, T. *A Textbook of English Phonetics for Indian Students*, Delhi: McMillan, 1981.
- Bansal, R.K. & Harrison, J.B., *Spoken English*, Hyderabad: Orient Longman, 2000.
- Hockett, C.F., *A Course in Modern Linguistics*, MacMillan, . 1963.
- Hudson, Richard, *Sociolinguistics*, Cambridge: Cambridge University Press, 1996.
- Jones, Daniel, *English Pronouncing Dictionary*, ELBS Edition.
- Leech et al, *English Grammar Today: a New Introduction*, Hyderabad: McMillan, 2010.
- Lyons, John, *Language and Linguistics: An Introduction*, Cambridge: Cambridge University Press, 1981.
- Quirk, R., Greenbaum, S., Leech, G. & Svartvik, J., *A Comprehensive Grammar of English*, New Delhi: Pearson, 2010.
- Quirk, Randolph & Greenbaum, Sidney, *A University Grammar of English*, New Delhi: Pearson, 2015.
- Radford, A., Atkinson, M., Britain, D., Clahsen, H. & Spencer, A., *Linguistics: An Introduction*, Cambridge: Cambridge University Press, 1999.
- Trask, R. L, *Key Concepts in Language and Linguistics*, London: Routledge, 1999.
- Verma, S.K. & Krishnaswamy, N., *Modern Linguistics*, Hyderabad: Oxford University Press, 1989.
- Velayudhan, S. & Mohanan, K. P., *An Introduction to the Phonetics and Structure of English*, New Delhi: Somaiya Pub. Pvt. Ltd., 1977

QUESTION PAPER PATTERN

From June 2020 onwards

LANGUAGE AND LINGUISTICS (CBCS)
Discipline Specific Elective
Semester V –Paper XI (DSE - E15)

-
Q. 1	Objective type	
	a) Three term labels	(3)
	b) Transcription of words with primary stress	(3)
	c) Conversion of the given transcriptions into the conventional spellings	(2)
Q.2	a) Write short notes (2/3) (to be set on Module I)	(10)
	b) Morphological Analysis giving labels (2/4)	(4)
Q.3	a) Identification of word formation/morphological processes	(4)
	d) Identification of word classes	(4)
Q.4.	Write short notes (2/4) (2 each to be set on Module II & IV)	(10)
-

Shivaji University, Kolhapur
B.A. III
English Special
LANGUAGE AND LINGUISTICS (CBCS)
Discipline Specific Elective
Semester VI – Paper XVI (DSE - E140)
From June 2020 onwards

Course Objectives:

- To acquaint students with structures and functions of words and phrases.
- To enable students to know and identify elements and types of clauses.
- To study Subordination and Coordination.
- To study different ways of structuring clauses.

Course Outcomes:

- Students know words and phrases.
- Students know and identify elements and types of clauses.
- Students know types of sentences.
- Students know the different ways of structuring clauses

Semester VI – Paper XVI (DSE - E140)

MODULE V

Phrases

MODULE VI

Clauses

MODULE VII

Subordination and Coordination

MODULE VIII

Basic and Derived Structures

- i) Inversion / Fronting
- ii. Negation
- iii. Interrogation
- iv. Exclamation
- v. Omission of Certain Elements
(Relative Pronouns, Comparative Clauses, Tag Questions)
- vi. Passivisation
- vii. Subject Raising
- viii. Style Transformation

Note: Semester VI: 10 Marks for Internal Evaluation: STUDENTS' GROUP PROJECT

Division of Teaching Hours: 4 Modules X 15 Periods = 60 Periods

Reference Books :

- Crystal, David, *Linguistics*, London: Penguin Books Ltd., 1974.
 Hockett, C.F., *A Course in Modern Linguistics*, MacMillan, 1963.
 Hudson, Richard, *Sociolinguistics*, Cambridge: Cambridge University Press, 1996.
 Leech et al, *English Grammar Today: A New Introduction*, Hyderabad: McMillan, 2010.
 Lyons, John, *Language and Linguistics: An Introduction*, Cambridge: Cambridge University Press, 1981.
 Palmer, F. G., *Grammar*, London: Penguin Books Ltd., 1973.
 Quirk, R., Greenbaum, S., Leech, G. & Svartvik, J., *A Comprehensive Grammar of English*, New Delhi: Pearson, 2010.
 Quirk, Randolph & Greenbaum, Sidney, *A University Grammar of English*, New Delhi: Pearson, 2015.
 Radford, A., Atkinson, M., Britain, D., Clahsen, H. & Spencer, A., *Linguistics: An Introduction*, Cambridge: Cambridge University Press, 1999.
 Verma, S.K. & Krishnaswamy, N., *Modern Linguistics*, Hyderabad: Oxford University Press, 1989.

QUESTION PAPER PATTERN**From June 2020 onwards****LANGUAGE AND LINGUISTICS (CBCS)****Discipline Specific Elective****Semester VI – Paper XVI (DSE - E140)**

Q. 1	a) Identify elements of clause (S, P, O, C, A)	(4/6)	(4)
	b) Transformation of sentence (to be set on Module VIII)	(4/6)	(4)
Q.2	a) Write short notes. (2 each to be set on Module V & VI)	(2/4)	(10)
	b) Give form and function labels to the underlined phrases.	(4/6)	(4)
Q.3	a) Write short notes (To be set on Module VII)	(2/3)	(10)
	b) Identify the subordinate clauses and state their form and function.	(4/6)	(4)
Q. 4.	Do as directed. (to be set on Module VIII)	(4/6)	(4)

EQUIVALENCE

OLD TITLE	NEW TITLE
THE STRUCTURE AND FUNCTION OF MODERN ENGLISH	LANGUAGE AND LINGUISTICS

SHIVAJI UNIVERSITY, KOLHAPUR



Revised syllabus for
Bachelor of Arts (Part – III)

SEMESTER V & VI

ECONOMICS

Syllabus to be implemented from June 2020 onwards

Equivalence B.A.III Economics Sem- V

Sem No.	Paper No.	Title of Old Paper	Sem No.	Discipline	Title of New Paper
V	VII	Micro Economics	V	Economics Course - 7	Principles of Micro Economics- I
V	VIII	Research Methodology in Economics (Part I)	V	Economics Course- 10	Research Methodology in Economics- I
V	IX	History of Economic Thoughts (Part I)	V	Economics Course - 11	History of Economic Thoughts- I
V	X	Economics of Development	V	Economics Course - 8	Economics of Development
V	XI	International Economics (Part I)	V	Economics Course - 9	International Economics- I

Equivalence B.A.III Economics Sem- VI

Sem No.	Paper No.	Title of Old Paper	Sem No.	Economics Course	Title of New Paper
VI	XII	Market and Pricing	VI	Economics Course- 12	Principles of Micro Economics- II
VI	XIII	Research Methodology in Economics (Part II)	VI	Economics Course- 15	Research Methodology in Economics- II
VI	XIV	History of Economic Thoughts (Part II)	VI	Economics Course- 16	History of Economic Thoughts- II
VI	XV	Economics of Planning	VI	Economics Course- 13	Economics of Planning
VI	XVI	International Economics (Part II)	VI	Economics Course- 14	International Economics- II

Structure of Course
Revised syllabus of B.A. Part III (Economics)

Sr. No.	Semester	Title of the Paper	Discipline	Distribution of Credit	Workload	Total Credits	Theory Marks	Term work seminar
1	V	Principles of Micro Economics- I	Economics Course- 7	4	4 Lectures / week	20	40	10
2	V	Economics of Development	Economics Course- 8	4	4 Lectures / week		40	10
3	V	International Economics- I	Economics Course- 9	4	4 Lectures / week		40	10
4	V	Research Methodology in Economics- I	Economics Course- 10	4	4 Lectures / week		40	10
5	V	History of Economic Thoughts- I	Economics Course- 11	4	4 Lectures / week		40	10
Sr. No.	Semester	Title of the Paper	Discipline	Distribution of Credit	Workload	Total Credits	Theory Marks	Term work Group Project
6	VI	Principles of Micro Economics- II	Economics Course- 12	4	4 Lectures / week	20	40	10
7	VI	Economics of Planning	Economics Course- 13	4	4 Lectures / week		40	10
8	VI	International Economics- II	Economics Course- 14	4	4 Lectures / week		40	10
9	VI	Research Methodology in Economics- II	Economics Course- 15	4	4 Lectures / week		40	10
10	VI	History of Economic Thoughts- II	Economics Course- 16	4	4 Lectures / week		40	10

B. A. III Economics (Semester V) (CBCS Pattern)

Principles of Micro Economics- I

(Elective Course- 7) DSE E-71

Course Outcomes: After successful completion of this course, the students will be able to:

- Explain what economics is and explain why it is important
- Understand consumer decision making and consumer behaviour
- Define the concept of utility and satisfaction
- Derive revenue and cost figures as well as curves
- Understand producer decision making and producer behaviour

Module- I Introduction to Micro Economics

(Teaching Hours- 15, Credits- 01)

- 1.1 Meaning, nature and scope
- 1.2 Importance and limitations
- 1.3 The Economic Problem- Scarcity and Choice; concept of opportunity cost
- 1.4 Framework of economic analysis- Concept, module, parameters

Module- II Consumer's Behaviour

(Teaching Hours- 15, Credits- 01)

- 2.1 Utility- concept, total and marginal utility
- 2.2 Cardinal utility approach: law of diminishing marginal utility
- 2.3 Ordinal utility approach: meaning and properties of indifference curve
- 2.4 Consumer's equilibrium and consumer's surplus

Module- III Demand and Supply Analysis

(Teaching Hours- 15, Credits- 01)

- 3.1 Law of demand, demand function, determinants of demand
- 3.2 Elasticity of demand: price, income, cross and substitution
- 3.3 Measurement and importance
- 3.4 Law of supply, supply function and elasticity

Module- IV Theory of Production

(Teaching Hours- 15, Credits- 01)

- 4.1 Law of variable proportions and law of returns to scale
- 4.2 Economies and diseconomies of scale
- 4.3 Revenue- total, marginal and average revenue
- 4.4 Cost concepts and their relationship, cost curves- short run and long run

BASIC READING LIST:

1. Dominic Salvator (2012) – Principles of Micro Economics, 5th edition, Oxford University Press, Oxford.
2. John B. Taylor & Akila Weerapana, (2011) 'Principles of Economics', 7th Edition, Cengage Learning, India, New Delhi.

3. Koutsoyiannis, A. (1979), Modern Microeconomics, 2nd Edition, Macmillan Press, London.
4. Lipsey Richard G., (latest edition), An Introduction to Positive Economics, Weidenfeld & Nicolson, London.
5. Lipsey, R.G. and K.A. Chrystal (latest edition), Principles of Economics (IX Ed.), Oxford University Press, Oxford.
6. Mankiw, N. Gregory (2008), Principles of Microeconomics, 5th Edition, Cengage Learning India, New Delhi.
7. Mansfield, E (latest edition), Microeconomics (9th Ed) W.W. Norton and Company, New York.
8. Pindyek and Rubinfeld (latest edition)- Micro Economics, Pearson Education, New Delhi.
9. Ray, N.C. (latest edition), An introduction to Microeconomics, Macmillan company of India Ltd.
10. Samuelson, P.A. and W.D. Nordaus (latest edition), Economics, Tata McGraw Hill, New Delhi.
11. Stonier, A.W. and D.C. Hague (latest edition), A Textbook of Economic Theory, ELBS and Logman Group, London.
12. Varian, Hall (1992): Microeconomic Analysis, Third Edition, W. W. Norton & Company, Inc, New York.

B. A. III Economics (Semester V) (CBCS Pattern)

Economics of Development

(Elective Course- 8) DSE – E - 72

Course Outcomes: After successful completion of this course, the students will be able to:

- Identify the dimensions of development
- Distinguish the fundamental and contemporary development debate
- Know the theories of economic development
- Realise the role of state in economic development

Module- I: Basic concepts of economic development (Teaching Hours- 15, Credits- 01)

- 1.1 Meaning of economic development- Distinction between economic development and growth
- 1.2 Indicators of economic development
- 1.3 Obstacles to economic development
- 1.4 Sustainable and green development

Module- II: Developing and developed countries (Teaching Hours- 15, Credits- 01)

- 2.1 Underdevelopment and characteristics
- 2.2 Factors affecting economic development
- 2.3 Features of economic growth
- 2.4 Developmental status of Indian economy

Module- III: Theories of economic development (Teaching Hours- 15, Credits- 01)

- 3.1 Classical approach to development- Ricardian Theory
- 3.2 Myrdal's theory of economic development
- 3.3 Rostow's stages of economic growth
- 3.4 Theory of balanced and unbalanced growth

Module- IV: Resources for economic development (Teaching Hours- 15, Credits- 01)

- 4.1 Capital formation, Technology and economic development
- 4.2 Human capital and economic development
- 4.3 FDI, FIIs, Portfolio and Aid
- 4.4 Role of state in economic development

BASIC READING LIST:

1. Adelman, Irma (1962), *Theories of Economic Growth and Development*, Stanford University Press, Stanford.
2. Behrman, S. and T.N. Srinivasan (1995), *Handbook of Development Economics*, Vol. 1 to 3, Elsevier, Amsterdam. Economics 31
3. Ghatak, Subrata (1986), *Introduction to Development Economics*, Allen and Unwin, London.
4. Hayami, Yujiro and Yoshihisa Godo (1997), *Development Economics*, Oxford University Press, New York.
5. Higgins, Benjamin (1980), *Economic Development*, Norton, New York.

6. Kindleberger, C.P. (1965), *Economic Development*, 3e, McGraw Hill, New York.
7. Meier, Gerald M. and James E. Rauch (2005), *Leading Issues in Economic Development*, 6e, Oxford University Press, New Delhi.
8. Myint, Hla (1965), *The Economics of Underdeveloped Countries*, Preager, New York.
9. Myint, Hla (1971), *Economic Theory and Under Developed Countries*, Oxford University Press, New York.
10. Thirlwal, A.P. (1999), (6th Edition), *Growth and Development*, Macmillan, London.
11. Bhagwati, J. and P. Desai (1970), *India : Planning for Industrialization*, Oxford University Press, London.
12. Boserup, Ester (1981), *Population and Technological Change : A Study of Long Term Change*, Chicago University Press, Chicago.
13. Brahmananda, P.R. and C.N. Vakil (1956), *Planning for an Expanding Economy*, Vora and Co., Bombay.
14. Puri V. K. And S. K. Misra (2016), *Economics of Development and Planning*, Himalaya Publishing House.
15. Datta Gaurav and Ashwini Mahajan (2016), *Indian Economy*, S. Chand Publishing, New Delhi
16. Todaro Michael P. And Stephen C. Smith (2017), *Economic Development*, Pearson Education.
17. Chakravarti, Sukhamoy (1982), *Alternative Approaches to the Theory of Economic Growth*, Oxford University Press, Delhi.
18. Chakravarty, Sukhamoy (1987), *Development Planning : The Indian Experience*, Clarendon Press, Oxford.
19. Jhingan, M.L. (2005) *The Economics of Development and Planning* , Vrinda Publications Ltd. Delhi
20. Lekhi, R.K. (2005) *Economics of Development and Planning*, Kalyani Publishers, Delhi.
21. Patil, J. F. (et al) (2005) *Economics of Growth and Development* (Marathi) , Phadake Publishers, Kolhapur.
22. Patil, J.F. & Tamhankar, P.J. (1990) *Economics of Development and Planning* (Marathi), Continental Publishers, Pune.
23. Kavimandan (1975), *Economics of Development and Planning* (Marathi), Mangesh Prakashan , Nagpur

B. A. III Economics (Semester V) (CBCS Pattern)

International Economics- I

(Elective Course- 9) DSE – E 73

Course Outcomes: After successful completion of this course, the students will be able to:

- Explain international trade
- Understand the measurement of gains from international trade
- Distinguish different rates of exchange
- Measure the terms of trade

Module- I: Trade and Trade Theories

(Teaching Hours- 15, Credits- 01)

- 1.1 Importance of the study of International Economics
- 1.2 Inter-regional and international trade: similarities and dissimilarities.
- 1.3 Ricardian theory of international trade
- 1.4 Hecksher – Ohlin Theory

Module- II: Gains from International Trade

(Teaching Hours- 15, Credits- 01)

- 2.1 Gains from international trade and their measurement
- 2.2 Trade as an engine of economic growth.
- 2.3 Terms of trade: meaning, concepts and application
- 2.4 Factors affecting terms of trade

Module- III: Exchange Rate

(Teaching Hours- 15, Credits- 01)

- 3.1 Meaning of exchange rate, Purchasing Power Parity theory
- 3.2 Fixed Exchange Rate – meaning, merits and demerits
- 3.3 Flexible Exchange Rate – meaning, merits and demerits
- 3.4 Floating Exchange Rate – meaning, merits and demerits

Module- IV: Tariffs and Quotas

(Teaching Hours- 15, Credits- 01)

- 4.1 Free Trade: meaning, arguments for and against
- 4.2 Trade Protection Policy: meaning, arguments for and against.
- 4.3 Tariffs: meaning, types and effects
- 4.4 Quotas: meaning, types and effects.

BASIC READING LIST:

- 1 Aggarwal, M. R. (1979), Regional Economic Cooperation in South Asia, S. Chand and Co., New Delhi.
- 2 Bhagwati, J. (Ed.) (1981), International Trade, Selected Readings, Cambridge University Press, Mass.
- 3 Crockett. A. (1982), International Money: Issue and Analysis, ELBS and Nelson, London.

- 4 Greenaway. D. (1983), International Trade Policy, MacMillan Publishers Ltd., London.
- 5 Heller, H. R. (1968), International Monetary Economics, Prentice Hall. India.
- 6 Joshi V. and I.M.D. Little (1998), India's Economic Reforms, 1999-2001, Oxford
- 7 Kenan, P.B. (1994), The International Economy, Cambridge University Press, London.
- 8 Kindlberger, C. P. (1973), International Economics, R.D. Irwin, Homewood.
- 9 Krugman, P. R. and M. Obstfeld (1994), International Economics: Theory and Policy, Glenview, Foresman.
- 10 Mithani D.M. (Reprint-2009) International Economics, Himalaya Publishing House, New Delhi.
- 11 Nayyar,D. (1976) : India's Exports and Export Policies in the 1960s, Cambridge University Press, Cambridge.
- 12 Panchmukhi, V. R. (1978), Trade Policies of India: A Quantitative Analysis, Concept University Press, Delhi.
- 13 Patel, S. J. (1995), Indian Economy Towards the 21st Century, University Press Ltd., India.
- 14 RuddarDatt& K.P.M. Sundaram, (2018), Indian Economy, S. Chand & Co. Ltd., New Delhi
- 15 Salvatore, D. L. (1997), International Economics, Prentice- Hall, Upper Saddle River, N. J.
- 16 Singh, M. (1964), India Export Trends and the Prospects for Self-sustained Growth, Oxford University Press, Oxford.
- 17 Sodersten, Bo (1991), International Economics, MacMillan Press Ltd. London

B. A. III Economics (Semester V) (CBCS Pattern)

Research Methodology in Economics- I

(Elective Course- 10) DSE – E 74

Course Outcomes: After successful completion of this course, the students will be able to:

- Get acquainted with the basic concepts of research and its methodologies.
- Select and define appropriate research problem and parameters.

Module- I: Introduction to research in economics (Teaching Hours- 15, Credits- 01)

- 1.1 Meaning, definitions and objectives of research
- 1.2 Types of research
- 1.3 Significance of research
- 1.4 Areas of economic research

Module- II: Literature review and research design (Teaching Hours- 15, Credits- 01)

- 2.1 Literature review- meaning, need, how to carry out a literature review?
- 2.2 Research design- steps in research design
- 2.3 Features of good research design
- 2.4 Importance of research design

Module- III: Hypothesis and concept (Teaching Hours- 15, Credits- 01)

- 3.1 Meaning and definition, kinds of hypothesis
- 3.2 Features of hypothesis
- 3.3 Importance of hypothesis
- 3.4 Concept- meaning, conceptualization, formal and operational definition of concept

Module- IV: Data collection (Teaching Hours- 15, Credits- 01)

- 4.1 Primary and secondary data
- 4.2 Primary data collection methods- observation, questionnaire, interview
- 4.3 Sources of secondary data
- 4.4 Importance of data collection

BASIC READING LIST:

1. Goode and Hatt(1981), Methods in Social Research, McGraw Hill International Book Company, New Delhi.
2. Kerliger F.N.(1983), Foundation of Behavioural Research, Surjeet Publication, Delhi.
3. Young P. V. (1960), Scientific Social Survey and Research, Asia Publication House, Mumbai.

4. Kothari C.R. (1993), Research Methodology-Methods and Techniques, Wiley Eastern Ltd.,New Delhi.
5. Lundbrg G.A.(1960), Social Research, Longmans Green and Company, New York.
6. Herekar P .M.(2019), Research Methodology and Project Work, Phadake Prakashan,Kolhapur.
7. Settiz Claire,Jahoda Marie and Others(1959), Research Methods in SocialResearch,Dryden New York.
8. Takur Dvendra(1997), Research Methodology in Social Sciences, Deep and Deep Publication,New Delhi.
9. Gupta S.P.and Gupta M.P.(2005), Business Statistics, Sultan Chand & Sons, New Delhi
10. Gupta C.B.(1996), An Introduction to Methods, Vikas Publication House,New Delhi.
11. देशमुख राम (जून 2005) : 'मूलभूत सांख्यिकी', विद्या प्रकाशन, नागपूर.
12. पाटील ज.फा., पठाण के.जी., ताम्हणकर पी.जे., संतोष यादव (2012) : 'अर्थशास्त्रीय संशोधनाची तोंडओळख', (सुधारित आवृत्ती), कॉन्टिनेंटल प्रकाशन, पुणे.
13. आगलावे प्रदीप (जानेवारी 2000) : 'संशोधन पद्धतीशास्त्र व तंत्रे', विद्या प्रकाशन, नागपूर.
14. खैरनार दिलीप (फेब्रुवारी 2009) : 'प्रगत सामाजिक संशोधन पद्धती व सांख्यिकी', डायमंडपब्लिकेशन्स, पुणे.
15. भांडारकर पु.ल. (1987) : 'सामाजिक संशोधन पद्धती', महाराष्ट्र विद्यापीठ ग्रंथनिर्मिती मंडळ, नागपूर.

B. A. III Economics (Semester V) (CBCS Pattern)

History of Economic Thoughts- I

(Elective Course- 11) DSE – E 75

Course Outcomes: After successful completion of this course, the students will be able to:

- Understand the basic economic ideas of various economic thinkers of the world
- Understand the development of economic thoughts

Module-I: Origin of Economic Thoughts (Teaching Hours- 15, Credits- 01)

- 1.1 Early economic thought, rise of mercantilism, features of Mercantilism
- 1.2 Meaning and causes of emergence of Physiocracy
- 1.3 The concept of natural order and primacy of agriculture
- 1.4 Tableau economique

Module- II: Classical Economic Thoughts (Teaching Hours- 15, Credits- 01)

- 2.1 Adam Smith: Division of labour, theory of value and canons of taxation
- 2.2 David Ricardo: Theory of Value and views on distribution
- 2.3 Thomas Malthus: Theory of Population
- 2.4 Theory of Gluts

Module- III: Economic Thoughts of Fredrick List (Teaching Hours- 15, Credits- 01)

- 3.1 Criticism on Classical School
- 3.2 Stages of Economic growth
- 3.3 Concept of Nationalism
- 3.4 Theory of Protectionism

Module- IV: Economic Thoughts of Karl Marx (Teaching Hours- 15, Credits- 01)

- 4.1 The Concept of Scientific Socialism and Materialist approach
- 4.2 The Theory of Value
- 4.3 Theory of Surplus Value
- 4.4 Concept of Falling rate of profit

BASIC READING LIST:

1. Dandekar V.M.and N.Nath (1971), Poverty in India, Indian school of political Economy, Pune.
2. Ganguli B. N. (1977): Indian Economic Thought - A 19th Century Perspectives, Tata Mc Grow Hill, New Delhi.
3. Rath Nilkanth(1995) V.M.Dandekar Social Scientist with a Difference : Journal of Indian School of Political Economy.Oct-Dec.1995, Vol-7 No-4.
4. Seshadri G.B.(1997): Economic Doctrines, Publishing Corporation, New Delhi.
5. चा.भ.खैरमोडे (१९७८) – डॉ.भीमराव रामजी आंबेडकर, खंड १ ला , खंड २ रा खंड ७ वा, प्रताप प्रकाशन.

6. गांधी मो.क.(१९९७) -मराठी अनुवाद सीताराम पुरोषोत्तम पटवर्धन'सत्याचे प्रयोग अथवा आत्मकथा पाचवी आवृत्ती.
7. डॉ.जे.एफ.पाटील (२०१५)- आर्थिक विचारांचा इतिहास, फडके प्रकाशन, कोल्हापूर.
8. इंगळे बी.डी. (२०११) आर्थिक विचारांचा इतिहास, अरुणा प्रकाशन, लातूर.
9. प्रा.रायखेलकर,डॉ.दामजी (२०११) – आर्थिक विचारांचा इतिहास, विद्या बुक पब्लिशर्स,औरंगाबाद.
10. प्रा.डॉ.अनिलकुमार वावरे, प्रा.संजय धोंडे, व डॉ.अनिल सत्रे (२०१४)- आर्थिक विचारांचा इतिहास, एज्युकेशनल पब्लिशर्स अँड डिस्ट्रिब्युटर्स,औरंगाबाद.
11. प्रा.रा.म.गोखले - आर्थिक विचारांचा इतिहास
12. डॉ.विजय कविमंडन - आर्थिक विचारांचा इतिहास

B. A. III Economics (Semester VI) (CBCS Pattern)

Principles of Micro Economics- II

(Elective Course- 12) DSE E 196

Course Outcomes: After successful completion of this course, the students will be able to:

- Identify the market structure
- Analyse the economic behaviour of individual firms and markets
- Analyse a firm's profit maximising strategies under different market conditions
- Understand the factor pricing

Module- I Perfect Competition

(Teaching Hours- 15, Credits- 01)

- 1.1 Meaning and characteristics
- 1.2 price and output determination under perfect competition
- 1.3 Equilibrium of the firm and industry in the short run
- 1.4 Equilibrium of the firm and industry in the long run

Module- II Monopoly

(Teaching Hours- 15, Credits- 01)

- 2.1 Meaning and characteristics
- 2.2 Price discrimination and degrees
- 2.3 Equilibrium of a monopoly firm in the short run and long run
- 2.4 Monopoly and capacity loss

Module- III Imperfect Competition

(Teaching Hours- 15, Credits- 01)

- 3.1 Meaning and characteristics
- 3.2 Price- output determination
- 3.3 Product differentiation
- 3.4 Oligopoly and duopoly- meaning and characteristics

Module- IV Factor Pricing

(Teaching Hours- 15, Credits- 01)

- 4.1 Marginal productivity theory
- 4.2 Modern theory of rent
- 4.3 Classical and Keynesian theory of interest
- 4.4 Risk and uncertainty theory of profit

BASIC READING LIST:

1. Dominic Salvator (2012) – Principles of Micro Economics, 5th edition, Oxford University Press, Oxford.
2. John B. Taylor & Akila Weerapana, (2011) 'Principles of Economics', 7th Edition, Cengage Learning, India, New Delhi.

3. Koutsoyiannis, A. (1979), Modern Microeconomics, 2nd Edition, Macmillan Press, London.
4. Lipsey Richard G., (latest edition), An Introduction to Positive Economics, Weidenfeld & Nicolson, London.
5. Lipsey, R.G. and K.A. Chrystal (latest edition), Principles of Economics (IX Ed.), Oxford University Press, Oxford.
6. Mankiw, N. Gregory (2008), Principles of Microeconomics, 5th Edition, Cengage Learning India, New Delhi.
7. Mansfield, E (latest edition), Microeconomics (9th Ed) W.W. Norton and Company, New York.
8. Pindyek and Rubinfeld (latest edition)- Micro Economics, Pearson Education, New Delhi.
9. Ray, N.C. (latest edition), An introduction to Microeconomics, Macmillan company of India Ltd.
10. Samuelson, P.A. and W.D. Nordaus (latest edition), Economics, Tata McGraw Hill, New Delhi.
11. Stonier, A.W. and D.C. Hague (latest edition), A Textbook of Economic Theory, ELBS and Logman Group, London.
12. Varian, Hall (1992): Microeconomic Analysis, Third Edition, W. W. Norton & Company, Inc, New York.

B. A. III Economics (Semester VI) (CBCS Pattern)

Economics of Planning (Elective Course- 13) DSE – E 197

Course Outcomes: After successful completion of this course, the students will be able to:

- Get acquainted with economic planning and its importance in development
- Get acquainted with development of planning and planning machinery in India
- Evaluate sectoral performance of the Indian economy
- Compare and analyse Indian models of economic development

Module- I: Introduction to economic planning (Teaching Hours- 15, Credits- 01)

- 1.1 Meaning, Case for and against economic planning
- 1.2 Genesis of planning
- 1.3 Types of planning
- 1.4 Conditions of success of planning

Module- II: Issues in economic planning (Teaching Hours- 15, Credits- 01)

- 2.1 The choice of techniques: labour and capital intensive
- 2.2 Capital output ratio: Importance and factors affecting COR
- 2.3 Input output analysis
- 2.4 Project evaluation

Module- III: Planning in India- I (Teaching Hours- 15, Credits- 01)

- 3.1 Evolution of planning in India
- 3.2 Objectives and evaluation of planning
- 3.3 Planning Commission and National Development Council
- 3.4 NITI Ayog- Need for establishment, organization, objectives and work

Module- IV: Planning in India- II (Teaching Hours- 15, Credits- 01)

- 4.1 Plan models in Indian plans
- 4.2 Agricultural development under plans
- 4.3 Industrial development under plans
- 4.4 Services sector development under plans

BASIC READING LIST:

1. Behrman, S. and T.N. Srinivasan (1995), *Handbook of Development Economics*, Vol. 1 to 3, Elsevier, Amsterdam. Economics 31
2. Hayami, Yujiro and Yoshihisa Godo (1997), *Development Economics*, Oxford University Press, New York.
3. Kindleberger, C.P. (1965), *Economic Development*, 3e, McGraw Hill, New York.
4. Meier, Gerald M. and James E. Rauch (2005), *Leading Issues in Economic Development*, 6e, Oxford University Press, New Delhi.
5. Myint, Hla (1971), *Economic Theory and Under Developed Countries*, Oxford University Press, New York.
6. Thirlwall, A.P. (1999), (6th Edition), *Growth and Development*, Macmillan, London.

7. Bhagwati, J. and P. Desai (1970), *India : Planning for Industrialization*, Oxford University Press, London.
8. Brahmananda, P.R. and C.N. Vakil (1956), *Planning for an Expanding Economy*, Vora and Co., Bombay.
9. Puri V. K. And S. K. Misra (2016), *Economics of Development and Planning*, Himalaya Publishing House.
10. Datta Gaurav and Ashwini Mahajan (2016), *Indian Economy*, S. Chand Publishing, New Delhi
11. Chakravarty, Sukhamoy (1987), *Development Planning : The Indian Experience*, Clarendon Press, Oxford.
12. Jhingan, M.L. (2005) *The Economics of Development and Planning* , Vrinda Publications Ltd. Delhi
13. Lekhi, R.K. (2005) *Economics of Development and Planning*, Kalyani Publishers, Delhi.
14. Patil, J. F. (et al) (2005) *Economics of Growth and Development* (Marathi) , Phadake Publishers, Kolhapur.
15. Patil, J.F. & Tamhankar, P.J. (1990) *Economics of Development and Planning* (Marathi), Continental Publishers, Pune.

B. A. III Economics (Semester VI) (CBCS Pattern)

International Economics- II

(Elective Course- 14) DSE – E 198

Course Outcomes: After successful completion of this course, the students will be able to:

- Distinguish between balance of trade and balance of payments
- Analyse the balance of payments
- Understand the various types of foreign capital
- Analyse the impact of international institutions on Indian economy

Module- I: Balance of Trade and Balance of Payments(Teaching Hours- 15, Credits- 01)

- 1.1 Balance of Trade and Balance of Payments
- 1.2 Importance of Balance of Payments
- 1.3 Disequilibrium in Balance of Payments: Causes and Consequences
- 1.4 Measures to correct disequilibrium in Balance of Payments

Module- II: Foreign Trade of India since 1991 (Teaching Hours- 15, Credits- 01)

- 2.1 Volume, composition and direction
- 2.2 Exim Policy of 2014-19
- 2.3 Trade administration of India
- 2.4 Convertibility of Rupee: Meaning and types.

Module- III: Foreign Capital in India (Teaching Hours- 15, Credits- 01)

- 3.1 Need for Foreign Capital
- 3.2 Types of Foreign Capital
- 3.3 Foreign Capital Policy of Government of India
- 3.4 Trends in Foreign Direct Investment in India

Module- IV: International Institutions and India (Teaching Hours- 15, Credits- 01)

- 4.1 IMF: Objectives and Functions
- 4.2 IBRD: Objectives, Functions
- 4.3 ADB: Objectives, Functions
- 4.4 WTO: Objectives, Functions

BASIC READING LIST:

- 1 Aggarwal, M. R. (1979), Regional Economic Cooperation in South Asia, S. Chand and Co., New Delhi.
- 2 Bhagwati, J. (Ed.) (1981), International Trade, Selected Readings, Cambridge University Press, Mass.
- 3 Crockett. A. (1982), International Money: Issue and Analysis, ELBS and Nelson, London.

- 4 Greenaway. D. (1983), International Trade Policy, MacMillan Publishers Ltd., London.
- 5 Heller, H. R. (1968), International Monetary Economics, Prentice Hall. India.
- 6 Joshi V. and I.M.D. Little (1998), India's Economic Reforms, 1999-2001, Oxford
- 7 Kenan, P.B. (1994), The International Economy, Cambridge University Press, London.
- 8 Kindlberger, C. P. (1973), International Economics, R.D. Irwin, Homewood.
- 9 Krugman, P. R. and M. Obstfeld (1994), International Economics: Theory and Policy, Glenview, Foresman.
- 10 Mithani D.M. (Reprint-2009) International Economics, Himalaya Publishing House, New Delhi.
- 11 Nayyar,D. (1976) : India's Exports and Export Policies in the 1960s, Cambridge University Press, Cambridge.
- 12 Panchmukhi, V. R. (1978), Trade Policies of India: A Quantitative Analysis, Concept University Press, Delhi.
- 13 Patel, S. J. (1995), Indian Economy Towards the 21st Century, University Press Ltd., India.
- 14 RuddarDatt& K.P.M. Sundaram, (2018), Indian Economy, S. Chand & Co. Ltd., New Delhi
- 15 Salvatore, D. L. (1997), International Economics, Prentice- Hall, Upper Saddle River, N. J.
- 16 Singh, M. (1964), India Export Trends and the Prospects for Self-sustained Growth, Oxford University Press, Oxford.
- 17 Sodersten, Bo (1991), International Economics, MacMillan Press Ltd. London

B. A. III Economics (Semester VI) (CBCS Pattern)

Research Methodology in Economics- II

(Elective Course- 15) DSE – E - 199

Course Outcomes: After successful completion of this course, the students will be able to:

- Understand the sampling techniques as a method of data collection
- Use techniques of data analysis in research
- Write a research report and thesis
- Write a research proposal (grants)

Module- I: Sampling (Teaching Hours- 15, Credits- 01)

- 1.1 Meaning and nature
- 1.2 Types of sampling
- 1.3 Criteria of good sampling
- 1.4 Optimum size of sampling

Module- II: Processing and representation of data (Teaching Hours- 15, Credits- 01)

- 2.1 Classification of data
- 2.2 Tabulation of data
- 2.3 Percentage
- 2.4 Graphs and diagrams

Module- III: Techniques of data analysis (Teaching Hours- 15, Credits- 01)

- 3.1 Need and importance of data analysis
- 3.2 Measures of central tendency: mean, mode, median (direct method)
- 3.3 Measures of variation: range, standard deviation (direct method)
- 3.4 Correlation- meaning and importance, Karl Pearson's coefficient of correlation

Module- IV: Interpretation of data and report writing (Teaching Hours- 15, Credits- 01)

- 4.1 Interpretation of data: meaning
- 4.4 Report writing: meaning, steps, precautions
- 4.5 Properties of good report writing
- 4.4 Writing a good research proposal

BASIC READING LIST:

1. Goode and Hatt (1981), Methods in Social Research, McGraw Hill International Book Company, New Delhi.
2. Kerliger F.N.(1983), Foundation of Behavioural Research, Surjeet Publication, Delhi.
3. Young P. V.(1960), Scientific Social Survey and Research, Asia Publication House, Mumbai.
4. Kothari C.R. (1993), Research Methodology-Methods and Techniques, Wiley Eastern Ltd., New Delhi.
5. Lundbrg G.A.(1960), Social Research, Longmans Green and Company, New York.
6. Herekar P .M.(2019), Research Methodology and Project Work, Phadake Prakashan, Kolhapur.
7. Settiz Claire, Jahoda Marie and Others(1959), Research Methods in Social Research, Dryden New York.
8. Takur Dvendra (1997), Research Methodology in Social Sciences, Deep and Deep Publication, New Delhi.
9. Gupta S.P. and Gupta M.P.(2005), Business Statistics, Sultan Chand & Sons, New Delhi
10. Gupta C.B. (1996), An Introduction to Methods, Vikas Publication House, New Delhi.
11. देशमुख राम (जून 2005) : 'मूलभूत सांख्यिकी', विद्या प्रकाशन, नागपूर.
12. पाटील ज.फा., पठाण के.जी., ताम्हणकर पी.जे., संतोष यादव (2012) : 'अर्थशास्त्रीय संशोधनाची तोंडओळख', (सुधारित आवृत्ती), कॉन्टिनेंटल प्रकाशन, पुणे.
13. आगलावे प्रदीप (जानेवारी 2000) : 'संशोधन पद्धतीशास्त्र व तंत्रे', विद्या प्रकाशन, नागपूर.
14. खैरनार दिलीप (फेब्रुवारी 2009) : 'प्रगत सामाजिक संशोधन पद्धती व सांख्यिकी', डायमंड पब्लिकेशन्स, पुणे.
15. भांडारकर पु.ल. (1987) : 'सामाजिक संशोधन पद्धती', महाराष्ट्र विद्यापीठ ग्रंथनिर्मिती मंडळ, नागपूर.

B. A. III Economics (Semester VI) (CBCS Pattern)

History of Economic Thoughts- II

(Elective Course- 16) DSE – E 200

Course Outcomes: After successful completion of this course, the students will be able to:

- Understand the economic concepts and theories of Neo-Classical and Indian thinkers.
- Understand the development of economic thoughts

Module- I: Neo- Classical Economic Thought – Alfred Marshall

(Teaching Hours- 15, Credits- 01)

- 1.1 Theory of Value
- 1.2 The concept of representative firm
- 1.3 Consumer's surplus, elasticity of demand
- 1.4 Quasi rent

Module- II: Indian Economic Thought

(Teaching Hours- 15, Credits- 01)

- 2.1 Mahatma Phule: Views on agriculture and education
- 2.2 Rajarshi Shahu Maharaj: Policy for agriculture development and co-Operation
- 2.3 Dr. Babasaheb Ambedkar: Views on money, agriculture and development policy
- 2.4 Dadabhai Nauroji: Drain theory

Module- III: Mahatma Gandhi

(Teaching Hours- 15, Credits- 01)

- 3.1 Concept of village development
- 3.2 Importance of decentralization
- 3.3 Basic principle of development: swadeshi
- 3.4 Concept of Gram Swarajya

Module- IV: Economic Thoughts of Modern Indian Economist

(Teaching Hours- 15, Credits- 01)

- 4.1 Gopal Krishna Gokhale's views on public finance
- 4.2 D. R. Gadgil: Views on co-operative development and decentralization of power, co-operative commonwealth
- 4.3 V. M. Dandekar: Views on poverty
- 4.4 Amartya Sen: Concept of social choice, choice of techniques, Sen's views on poverty and public action

BASIC READING LIST:

1. Dandekar V.M.and N.Nath (1971), Poverty in India, Indian school of political Economy, Pune.

2. Ganguli B. N. (1977): Indian Economic Thought - A 19th Century Perspectives, Tata Mc Grow Hill, New Delhi.
 3. Rath Nilkanth(1995) V.M.Dandekar Social Scientist with a Difference : Journal of Indian School of Political Economy.Oct-Dec.1995, Vol-7 No-4.
 4. Seshadri G.B.(1997): Economic Doctrines, Publishing Corporation, New Delhi.
 5. चा.भ.खैरमोडे (१९७८) – डॉ.भीमराव रामजी आंबेडकर, खंड १ ला , खंड २ रा खंड ७ वा, प्रताप प्रकाशन.
 6. गांधी मो.क.(१९९७) -मराठी अनुवाद सीताराम पुरोषोत्तम पटवर्धन'सत्याचे प्रयोग अथवा आत्मकथा पाचवी आवृत्ती.
 7. डॉ.जे.एफ.पाटील (२०१५)– आर्थिक विचारांचा इतिहास, फडके प्रकाशन, कोल्हापूर.
 8. इंगळे बी.डी. (२०११) आर्थिक विचारांचा इतिहास, अरुणा प्रकाशन, लातूर.
 9. प्रा.रायखेलकर,डॉ.दामजी (२०११) – आर्थिक विचारांचा इतिहास, विद्या बुक पब्लिशर्स,औरंगाबाद.
 10. प्रा.डॉ.अनिलकुमार वावरे, प्रा.संजय धोंडे, व डॉ.अनिल सत्रे (२०१४)– आर्थिक विचारांचा इतिहास, एज्युकेशनल पब्लिशर्स अँड डिस्ट्रिब्युटर्स,औरंगाबाद.
 11. प्रा.रा.म.गोखले - आर्थिक विचारांचा इतिहास
 12. डॉ.विजय कविमंडन - आर्थिक विचारांचा इतिहास
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SHIVAJI UNIVERSITY, KOLHAPUR.



' A' Reaccredited By NAAC

Revised Syllabus for Bachelor of Arts (CBCS)

B. A. in Political Science

Faculty of Humanities B.A. Part – III

(Sem. V and VI)

Syllabus to be implemented from June, 2020

Shivaji University, Kolhapur
Revised Syllabus from June, 2020
Bachelor of Arts Part III – Political Science - Sem – V and VI

- 1) **Title:** Subject: Political Science (Paper No. 7 to 11) Optional under the Faculty of Arts.
- 2) **Year of Implementation:** Revised Syllabus will be implemented from June 2020 onwards.
- 3) **Duration:** The course shall be a full time course. The duration of course shall be three years.
- 4) **Pattern:** Pattern of examination will be Semester.
- 5) **Eligibility For Admission:** As per eligibility criteria prescribed for each course and the merit list in the qualifying examination.
- 6) **Medium of Instruction:** The medium of instruction shall be English or Marathi
- 7) **Equivalence In Accordance With Titles And Content Of Papers:** For Revised Syllabus As follows:

SEMESTER V

Sr No	Paper No	Title of Old Paper	Paper No	Title of New Paper
1	VII	Modern Government	VII	Political Theory
2	VIII	Public Administration	VIII	Public Administration
3	IX	International Politics	IX	International Politics
4	X	Constitution of United States of America	X	Comparative Politics
5	XI	Classical Western Political Thought	XI	Western Political Thought I

SEMESTER VI

Sr No	Paper No	Title of Old Paper	Paper No	Title of New Paper
1	XII	Modern Political Concepts	XII	Modern Political Concepts
2	XIII	Administrative Thinkers	XIII	Politics and Movements in Maharashtra
3	XIV	Foreign Policy of India	XIV	Foreign Policy of India
4	XV	Constitution of China and Sweden	XV	Comparative Government (With special reference to UK & USA)
5	XVI	Modern Western Political Thought	XVI	Western Political Thought II

Structure of Course

Revised syllabus of B.A. Part III (Political Science) From June, 2020

Semester	Paper No.	Title of the Paper	Theory Marks	Term work
Sem V	Paper VII	Political Theory	40	10
	Paper VIII	Public Administration	40	10
	Paper IX	International Politics	40	10
	Paper X	Comparative Politics	40	10
	Paper XI	Western Political Thought I	40	10
Sem-VI	Paper XII	Modern Political Concepts	40	10
	Paper XIII	Politics and Movements in Maharashtra	40	10
	Paper XIV	Foreign Policy of India	40	10
	Paper XV	Comparative Government (With special reference to UK & USA)	40	10
	Paper XVI	Western Political Thought II	40	10

Revised Syllabus B.A. III- Political Science (CBCS) From June 2020

Semester - V Paper No. VII DSE E-76

Title: Political Theory

Course Outcome:

- 1) Getting basic knowledge of Political Theory
- 2) Understanding of approaches to Political Theory
- 3) Knowing Behavioural movement in Political Science
- 4) Acquiring knowledge about concepts of Power, Authority and Legitimacy

Sr. No.	Unit No. and Title of the Unit	Teaching Hours	Credits
1.	Unit 1: Political Theory. a. Nature and scope of Political Theory. b. Political Philosophy and Political Theory c. Decline, Resurgence and Importance of Political Theory.	15	01
2.	Unit 2: Approaches to Political Theory a) Normative Approach b) Empirical Approach	15	01
3.	Unit 3: Behaviouralism & Post Behaviouralism a) Behavioral Approach—Meaning, Characteristics & Evaluation b) Post Behavioral Approach –Meaning, Characteristics & Evaluation	15	01
4.	Unit 4: Concepts in Political Theory a) 1)Political Power—Meaning, &Types, 2)Theories of Political Power—Psycho-Analytical Theory, Sociological Theory, Liberal Democratic Theory, Marxian Theory b) Authority –Meaning & Types c)Legitimacy –Meaning , Basis of Legitimacy	15	01

References:

- 1) Freidrich C. H. An Introduction to Political Theory.
- 2) Ernest Barkar, Principles of Social & Political Theory, Oxford, 1976
- 3) Ashirvadam & Misra, Political Theory, S Chand, Delhi 2004.
- 4) Dr. A.H. Doctor, Issues in Political Theory
- 5) Lass let Peter & Runciman W.C.(ed) Philosophy, Politics & Society, (3rd Series) Oxford, Blackwell, 1976
- 6) Mac Iver, Modern State, OUP, 1926
- 7) Verma S.P. Modern Political Theory, Vikas, Delhi, 1913
- 8) Carnoy, State and Political Theory, Princeton, 1984
- 9) Strauss L. What is political Philosophy & other essays, Glencoe, Free Press, 1959.
- 10) A Brecht, Political Theory-Foundations of 20th century Political Theory, Bombay, 1965.
- 11) David Held, Political Theory & Modern State, Polity, 1984.
- 12) Cresingay D. and Minogue (Ed) Contemporary Political Thinkers, Methuan, London, 1975.
- 13) Quinton A (Ed) Political Philosophy, Oxford, 1967.
- 14) Bena and Peters Social Principles & Democratic State, George Alien & Unwin, 1959
- 15) Einstein Mathew, Kenny Micheal,(ED) Political Ideologies: A Reader & Guide OUP; 2005

- 16) Bhargava Rajeev & Acharya Ashok, Political Theory, Pearson, 2015
- 17) गर्दे दि.का., राजकीय सिद्धांत, महाराष्ट्र विद्यापीठ ग्रंथ निर्मिती मंडळ, नागपूर, १९७८
- 18) भोळे भास्कर, राजकीय सिद्धांत आणि विश्लेषण, श्रीविद्या, नागपूर, २००४
- 19) देव विजय आणि इतर, राजकीय संकल्पना आणि सिद्धांत, डायमंड, पुणे, २०१५

Semester - 5 Paper No. VIII DSE E-77
Title: Public Administration

Course Outcome:

- 1) Acquiring information about various concepts in Public Administration.
- 2) Getting knowledge about Organization, its Bases, Principles and Units.
- 3) Getting acquainted with the budgetary process in India.
- 4) Understanding the interface between citizens and Public Administration; and other agencies in society and Public Administration.

Sr. No.	Unit No. and Title of the Unit	Teaching Hours	Credits
1.	Unit 1: Introduction to Public Administration a) Meaning, Nature and Scope b) Politics and Administration Dichotomy c) Evolution of the Discipline and its Present Status	15	01
2.	Unit 2: Organization a) Meaning and Bases of Organization b) Principles of Organization c) Units of Organization	15	01
3.	Unit 3: Financial Administration: a) Meaning and definition of Budget b) Budgetary Process in India c) Parliamentary Control of the Budget in India.	15	01
4.	Unit 4: Accountability and Control a) Concepts of Accountability and Control b) Legislative, Executive and Judicial Control over Public Administration c) Citizen and Administration d) Citizen's Charter, Role of: Media, Interests Groups, Voluntary Organizations, and Civil Society.	15	01

Recommended Books

1. Dr.Sharma M. P. : Public Administration in theory and practice, Kitab Mahal, Allahabad.
2. Dr.Avasthi A.; Dr.Maheshwari S., Public Administration, Lakshmi Narain Agrawal,Agra.6
3. Basu R.,Public Administration - Concept and Theories, Sterling Publisher Pvt.Ltd.,New Delhi.
4. White L. D. : Introduction to the study of public administration
5. Bhattacharya M., Restructuring of Public Administration, Jawahar Publishers, New Delhi.
6. Laxmikanth M, Public Administration, McGraw Hill Education (India) Private Limited, Chennai.
7. Prof. Fadia B. L. and Fadia K, Public Administration in India, Sahitya Bhawan, Agra.
- 8 बोरा पारस, शिरसाट शाम, लोकप्रशासनशास्त्र,ज्ञानसमिधा,औरंगाबाद
- 9 गर्दे दि.का. लोकप्रशासन तत्व व तंत्र, नागपूर ,1980
- 10 इनामदार एन.आर.लोकप्रशासन, महाराष्ट्र विद्यापीठ ग्रंथ निर्मिती मंडळ ,नागपूर,1975
- 11 माहेश्वरी श्रीराम, भारतीय प्रशासन ,(अनुवाद : साधना कुलकर्णी), ओरिएन्ट लॉगमन,हैद्राबाद,2002

- 12 काणे प.सि.,लोकप्रशासनाचे सिद्धांत ,विद्या प्रकाशन,नागपूर
- 13 भोगले शांताराम ,लोकप्रशासन सिद्धांत व कार्यपद्धती ,कैलाश ,औरंगाबाद
- 14 दर्शनकार अर्जुन, लोकप्रशासन, कैलाश ,औरंगाबाद

Semester – V - Paper No. IX DSE E-78
Title: International Politics

Course Outcome :

- 1) Getting acquainted with the concepts and dimension of International Politics.
- 2) To understand main theories of International Politics.
- 3) To know the working of international and regional organizations and the new world order that emerged after the end of cold war.

Sr. No.	Unit No. and Title of the Unit	Teaching Hours	Credits
1.	Unit – 1. Nature of International Politics a) Meaning, Nature and Scope of International Politics b) Theories of International Politics: Idealist and Realist.	15	01
2.	Unit – 2. National Power : a) Meaning of National Power b) Elements of National Power.	15	01
3.	Unit – 3. Diplomacy : a) Meaning of Diplomacy, b) Kinds and Functions of Diplomacy.	15	01
4.	Unit – 4. New World Order : a) Post Cold-War International Order b) Regional Organizations: European Union, ASIAN c) Economic Organizations: WTO and BRICS	15	01

Recommended Books:

1. Vinoy Kumar Malhotra - International Relation (New Delhi: Anmol Publication 1999)
2. Joshna Goldstein - International Relation (New York: Longman, 2003)
3. Hans Morgenthau - Politics Among Nation (New York: Alfred Knopf, 1985)
4. देवळाणकर शैलेंद्र, आंतरराष्ट्रीय संबंध, विद्या, औरंगाबाद, 2005
5. रायपूरकर वसंत, आंतरराष्ट्रीय संबंध, मंगेश, नागपूर, 2006
6. फादिया बी.एल. आंतरराष्ट्रीय राजनीती, साहित्यभवन, आग्रा, 2004
7. लोटे रा.ज., आंतरराष्ट्रीय संबंध, पिंपळापुरे, नागपूर, 2018
8. पाटील वा.भा., आंतरराष्ट्रीय संबंध, प्रशांत, जळगाव,
9. तोडकर बी.डी., आंतरराष्ट्रीय संबंध—महत्वाच्या संकल्पना, डायमंड, पुणे, 2012
10. वराडकर र.घ., आंतरराष्ट्रीय संबंध आणि राजकारण, विद्या, नागपूर

Semester – V Paper No. X DSE E-79
Title : Comparative Politics

Course Outcome:

- 1) Students will be familiar with basic theory of comparative politics
- 2) Students be able to understand constitutionalism, federalism.
- 3) Students shall understand party system and pressure groups and its functioning.
- 4) Students shall understand classification of political parties and pressure groups.

Sr. No.	Unit No. and Title of the Unit	Teaching Hours	Credits
1.	Unit – 1. Comparative Politics a) Meaning, Nature and Scope of Comparative Politics b) Structural Functional Approach to the study of Comparative Politics c) System Approach to the study of Comparative Politics d) Marxian Approach to the study of Comparative Politics	15	01
2.	Unit – 2. Constitutionalism a) Meaning and Definition Constitutionalism b) Constitutionalism in United Kingdom c) Constitutionalism in United States of America	15	01
3.	Unit – 3. Federalism a) Meaning and Nature federalism b) Essential Conditions of Federation c) Challenges before Federation	15	01
4.	Unit – 4. Political Party and Pressure Groups a) Meaning and types of Political Party b) Meaning and Classification of Pressure Groups c) Role of Political Parties and Pressure Groups	15	01

Recommended Books:

1. Harry Eckstein & David E. Apter- Comparative Politics, A Reader (New York, The Free Press, 1969.
2. J Blondel- An Introduction to comparative Government, London, 1969.
3. Herman Finer- The theory and Practice of Modern Government, Mathuen and Company, London 1969
4. S. R Maheshwari – Comparative Government and Politics ,Laxmi Narayan Agrwal, Agra, 1983
5. V.N Khanna– Major Political Systems, Chand and Chand company , Delhi
6. J.C Johari – Comparative Politics, sterling Delhi.
7. VidyaBhushan – Comparative Politics , Atlantic Publication and Distributers.
8. H,Denis Derbyshire, Ian Derbyshire – Political system of the world, Alied Publishers.Ltd.
9. D. Deol – Comparative Government and Poltics, sterling Publisher Pvt. Ltd
10. V.D. Mahajan- Select Modern Government, S Chand &Co.Ltd, New Delhi

- 11 लोटे रा.ज, तुलनात्मक शासन आणि राजकारण ,पिंपळापुरे ,नागपूर, 2015
- 12 गांधीजी राय ,तुलनात्मक शासन एवं राजनीती,भारती भवन पब्लिशर, 2017
- 13 जोहरी जे.सी.. तुलनात्मक राजनीती,स्टर्लिंग ,2008
- 14 गाबा ओमप्रकाश, तुलनात्मक राजनीती कि रूपरेखा, मयूर बुक्स, 2018
- 15 बिस्वाल तपन, तुलनात्मक राजनीती-संस्थाए और प्रक्रियाए,द ओरिएन्ट ब्लॉकस्वान, 2016
- 16 गर्ग सुषमा,तुलनात्मक शासन एवं राजनीती,अग्रवाल प्रकाशन ,2012
- 17 देशपांडे म.द., शासन राज्यपद्धती तौलनिक विचार,महाराष्ट्र विद्यापीठ ग्रंथ निर्मिती
- 18 घांगरेकर चि.ग.तुलनात्मक शासन आणि राजकारण
- 19 शास्त्री चंद्रशेखर ,प्रमुख देशांची शासन प्रणाली ,पायल,नागपूर
- 20 देशमुख अलका ,तौलनिक शासन आणि राजनीती,नाथ,नागपूर
- 21देवगावकर रा.गो.आधुनिक राजकीय व्यवस्था, साईनाथ नागपूर

Semester – V, Paper No. XI DSE E-80

Title of the Paper: Western Political Thought – I

Course Outcome :

- 1) Students will get acquainted with the western tradition from Plato to Rousseau.
- 2) Students will understand the evolution of western Political idea.
- 3) Students will be able to study historical aspects of western state and society.

Sr. No.	Unit No. and Title of the Unit	Teaching Hours	Credits
1.	Unit – 1. Plato	15	01
2.	Unit – 2. Aristotle	15	01
3.	Unit – 3. Machiavelli	15	01
4.	Unit – 4. Rousseau	15	01

Recommended Books:

- 1) Francis W. Coker - Recent Political Thought, The world Press Pvt. Ltd.
- 2) George H. Sabine - A History of Political theory, George G. Harrap&comoany Ltd. London.
- 3) C.L. Wayper - Political thought, S.T. Pauls, Honce Warwick lane London, Ec. 4
- 4) V.D. Mahajan & R.R. Seth, Recent Political Thought, Premier Publishing Co, Delhi.
- 5) William Ebenstein, Great Political Thinkers – Plato To the present Modern Political thought, The great Issues, IInd Edition, Oxford & IBH Publishing company.
- 6) Radhey Sham Chourasia, History of western Political thought – Volume I & II
- 7) Suda J.P., History of Political Thought, K.Nath, Meerut, Vol. 1 to 3, Reprint, 2017

- 8 शृंगारपुरे अरविंद, भारतीय तथा पाश्चिमात्य राजकीय विचार, मंगेश, नागपूर
- 9 भोळे भा.ल., भारतीय आणि पाश्चिमात्य राजकीय विचार, पिंपळापुरे, नागपूर
- 10 गर्दे दि.का., पाश्चिमात्य राजकीय विचार प्रवाह, महाराष्ट्र राज्य ग्रंथ निर्मिती, पुणे
- 11 डोळे ना.य., राजकीय विचारांचा इतिहास, कॉन्टीनेटल, पुणे
- 12 कुलकर्णी सुधाकर, निवडक राजकीय विचारवंत, विद्याभारती, लातूर

B. A. Part III – Political Science - Semester – VI

Semester VI, Paper No. XII DSE E- 201

Title of the Paper: Modern Political Concepts

Course Outcome

1. Student will know modern concepts such as Feminism, Multiculturalism, Environmentalism and Civil Society etc.
2. This will enable students to have comprehensive idea of contemporary scenario in political science.

Sr. No.	Unit No. and Title of the Unit	Teaching Hours	Credits
1.	Unit – 1. : Feminism I. Meaning, Origin and Development of Feminism. II. Characteristic of Feminism III. Theories of Feminism	15	01
2.	Unit – 2. Multiculturalism I. Meaning and Development of Multiculturalism II. Will Kymlicka's theory of Multiculturalism III. Nationalism and Multiculturalism	15	01
3.	Unit – 3. Environmentalism I. Origin and Causes of Environmentalism II. Characteristics of Environmentalism III. International Efforts for protection of Environment IV. Global Warming	15	01
4.	Unit – 4. Civil Society I. Meaning and Development of Civil Society II. Civil Society—Liberalism and Political Economy III. Locke, Hegel, Marx and Antonio Gramsci on Civil Society IV. Post Colonialism and Civil Society	15	01

Recommended Books:

- 1 Kymlicka Will, Multicultural Citizenship :Liberal Theory of Minority Rights, Clarendon Press, 1995
- 2 Kymlicka Will, Contemporary Political Philosophy, Oxford, 2001
3. Bhargava Rajeev and Acharya Ashok, Political Theory : An Introduction, 1st. Edition, Pearson, New Delhi, 2008
- 4 राठी शुभांगी डी. आधुनिक राजकीय विचारप्रणाली, अथर्व, धुळे, 2014
- 5 भार्गव राजीव , आचार्य अशोक, (संपा.) राजकीय सिद्धांत परिचय (अनुवाद: हेमंत खानझोडे) पिअर्सन , नवी दिल्ली, 2011
- 6 खेडेकर दिगंबर , राजकीय सिद्धांतातील मुलभूत संकल्पना, चिन्मय , औरंगाबाद, 2009
- 7 भागवत वंदना , संदर्भासहित स्त्रीवाद
- 8 भागवत विद्युत , स्त्रीवादी सामाजिक विचार : सहा महत्वाच्या विचारवंत स्त्रियांचा परिचय, डायमंड, पुणे, 2008

Semester VI Paper N0. XIII DSE E- 202

Title of the Paper: Politics and Movements in Maharashtra

Course Outcome :

- 1) Student will know the Political System of Maharashtra.
- 2) They will understand the process of formation of Maharashtra State
- 3) Student will know the movements, pressure groups and political parties in Maharashtra.
- 4) This will provide comprehensive idea of contemporary politics of Maharashtra.

Sr. No.	Unit No. and Title of the Unit	Teaching Hours	Credits
1.	Unit -1 Samyukta Maharashtra a. Movement of Samyukta Maharashtra and formation of Maharashtra State b. Developments in Politics of Maharashtra after 1960 c. The Politics of Regional Imbalance – Cooperative Sector and Economy	15	01
2.	Unit – 2 Organization of State Government a. Executive: Governor, Chief Minister and Council of Ministers – Composition, Powers and Functions b. Legislature: Legislative Assembly and Legislative Council- Composition, Powers and Functions.	15	01
3.	Unit – 3. Politics of Maharashtra a. Major Political Parties in Maharashtra b. Regional Parties in Maharashtra c. Coalition Politics	15	01
4.	Unit – 4. Political and Social Movements in Maharashtra a. Peasant Movements b. Dalit Movements c. Superstition Eradication Movements d. Student Movements	15	01

References:

- 1- Usha Thakkar and Mangesh Kulkarni (Ed.) Politics in Maharashtra
- 2- M.S.A. Rao/Francis Frankel (Ed.) Politics in Maharashtra – Vol 2. Oxford Uni. Press, 1990.
- 3 Murugkar Lata, Dalit Panther Movement in Maharashtra :A Sociological Appraisal, South Asia Books, 1991
- 4 Shah Ghanshyam, Social Movements in India, sage, 1991
- 5 जैन अशोक ,महाराष्ट्राचे शासन आणि राजकारण, सेठ ,मुंबई ,1998
- 6 पळशीकर सुहास आणि बिरमल नितीन, महाराष्ट्राचे राजकारण, प्रतिमा, पुणे ,2005
- 7 पळशीकर सुहास आणि कुलकर्णी सुहास, महाराष्ट्रातील सत्तासंघर्ष, समकालीन प्रकाशन, पुणे ,2007
- 8 भोळे भा.ल., यशवंतराव चव्हाण विचार व राजकारण, साकेत, औरंगाबाद, 2007

- 9 जाधव तुकाराम आणि इतर (संपादक), महाराष्ट्राचे राजकारण नव्या वळणावर? ,युनिक अकाडेमी, 2015
- 10 काळे भगवानराव, संयुक्त महाराष्ट्र:काल आणि आज ,1998
- 11 फडके य.दि.व्यक्ती आणि विचार, श्रीविद्या, पुणे
- 12 सुमंत यशवंत आन डी.डी.पुंडे (संपा.) महाराष्ट्रातील जातीव्यवस्थात्मक विचार,प्रतिमा ,पुणे
- 13 व्होरा राजेंद्र (संपा.) परंपरा आणि आधुनिकता, प्रतिमा ,पुणे
- 14 भोळे भा.ल., बेडकिहाळ किशोर (संपा.) बदलता महाराष्ट्र, आंबेडकर अकादमी,सातारा,2003
- 15 चौसाळकर अशोक , कॉ.श्रीपाद अमृत डांगे,कॉ.गोविंद पानसरे अमृत महोत्सव समिती,कोल्हापूर,2011

Semester VI Paper No. XIV DSE E- 203

Title: Foreign Policy of India

Course Outcome:

1. Student will understand, 'what is Foreign Policy and what are the objectives of Foreign Policy.
2. This will provide comprehensive idea of foundation of Indian Foreign Policy
3. Student will come to know India's relation with super powers and neighboring countries.
4. It will bring attention of the students towards the current national and international political situation and foreign policy.

Sr. No.	Unit No. and Title of the Unit	Teaching Hours	Credits
1.	Unit 1: Foreign Policy a) Meaning and Objectives of Foreign Policy. b) Determinants and Basic Principles of Indian Foreign Policy	15	01
2.	Unit – 2. India and Global Powers a) India – US Relations b) India – USSR and Russia Relations c) India – China Relations	15	01
3.	Unit – 3. India's Relations with her Neighbors a) India – Pakistan b) India – Bangladesh c) India – Shrilanka	15	01
4.	Unit – 4. Continuity and Change in India's Foreign Policy a) Foreign Policy of India in Cold War Era b) Foreign Policy of India in Post Cold War Era	15	01

Recommended Books :

1. Vinoy Kumar Malhotra - International Relation (New Delhi: Anmol Publication 1999)
2. Joshna Goldstein - International Relation (New York: Longman, 2003)
3. Hans Morgenthau - Politics Among Nation (New York: Alfred Knopf, 1985)
4. देवळाणकर शैलेंद्र, आंतरराष्ट्रीय संबंध, विद्या, औरंगाबाद, 2005
5. रायपूरकर वसंत, आंतरराष्ट्रीय संबंध, मंगेश, नागपूर, 2006
6. फादिया बी.एल. आंतरराष्ट्रीय राजनीती, साहित्यभवन, आग्रा, 2004
7. लोटे रा.ज., आंतरराष्ट्रीय संबंध, पिंपळापुरे, नागपूर, 2018
8. पाटील वा.भा., आंतरराष्ट्रीय संबंध, प्रशांत, जळगाव,
9. तोडकर बी.डी., आंतरराष्ट्रीय संबंध—महत्वाच्या संकल्पना, डायमंड, पुणे, 2012
10. वराडकर र.घ., आंतरराष्ट्रीय संबंध आणि राजकारण, विद्या, नागपूर
11. देवळाणकर शैलेंद्र, समकालीन जागतिक राजकारण व भारताचे परराष्ट्र धोरण, क्रोनिक्ल, 2012
12. देवळाणकर शैलेंद्र, भारत व जग, सकाळ, पुणे, 2014

13 देवळाणकर शैलेन्द्र, भारताचे परराष्ट्र धोरण :सातत्य व स्थित्यंतर ,प्रतिमा पुणे, 2007

Title: Comparative Government (With special reference to UK & USA)**Course Outcome:**

1. To familiarizes students with composition, functions, and law making process of legislative bodies in UK and USA.
2. To introduce the students with execution process of laws in UK and USA
3. To introduce the Judicial System in UK and USA and procedure of adjudication
4. Students will understand the role of Pressure Groups in the Politics of UK and USA.

Sr. No.	Unit No. and Title of the Unit	Teaching Hours	Credits
1.	Unit 1: Legislature a) Parliament of UK- Composition, Powers and Functions b) Congress of USA- Composition, Powers and Functions	15	01
2.	Unit – 2 Executive a) King, Prime Minister and Council of Minister in UK b) The President, Vice President, and Secretaries in USA	15	01
3.	Unit – Judiciary a) House of Lords and Supreme Court of Judicature in UK b) Supreme Court of USA- Composition, Powers and Functions	15	01
4.	Unit – 4 Political Party and Pressure Group a) Political Party system in UK- Conservative Party and Labour Party b) Political Party System in USA- Democratic and Republican Party c) Pressure Groups in UK and USA	15	01

Recommended Books :

1. **Harry Eckstein & David E. Apter-** Comparative Politics, A Reader (New York, The Free Press, 1969.
2. **J Blondel-** An Introduction to comparative Government, London, 1969.
3. **V.D. Mahajan-** Select Modern Government, S Chand & Co. Ltd, New Delhi
4. **Herman Finer-** The theory and Practice of Modern Government, Mathuen and Company, London 1969
5. **S. R Maheshwari** – Comparative Government and Politics ,Laxmi Narayan Agrwal, Agra, 1983
6. **V.N Khanna** – Major Political Systems, Chand and Chand company , Delhi
7. **J.C Johari** – Comparative Politics, sterling Delhi.
8. **Vidya Bhushan** – Comparative Politics , Atlantic Publication and Distributers.
9. **H,Denis Derbyshire, Ian Derbyshire** – Political system of the world, Alied Publishers.Ltd.
10. **D. Deol** – Comparative Government and Poltics, sterling Publisher Pvt. Ltd
- 11 लोटे रा.ज, तुलनात्मक शासन आणि राजकारण ,पिंपळापुरे ,नागपूर, 2015
- 12 गांधीजी राय ,तुलनात्मक शासन एवं राजनीती,भारती भवन पब्लिशर, 2017
- 13 जोहरी जे.सी.. तुलनात्मक राजनीती,स्टर्लिंग ,2008
- 14 गाबा ओमप्रकाश, तुलनात्मक राजनीती कि रूपरेखा, मयूर बुक्स, 2018

- 15 बिस्वाल तपन, तुलनात्मक राजनीती-संस्थाए और प्रक्रियाए, द ओरिएन्ट ब्लॉकस्वान, 2016
- 16 गर्ग सुषमा, तुलनात्मक शासन एवं राजनीती, अग्रवाल प्रकाशन, 2012
- 17 देशपांडे म.द., शासन राज्यपद्धती तौलनिक विचार, महाराष्ट्र विद्यापीठ ग्रंथ निर्मिती
- 18 घांगरेकर चि.ग. तुलनात्मक शासन आणि राजकारण
- 19 शास्त्री चंद्रशेखर, प्रमुख देशांची शासन प्रणाली, पायल, नागपूर
- 20 देशमुख अलका, तौलनिक शासन आणि राजनीती, नाथ, नागपूर
- 21 देवगावकर रा.गो. आधुनिक राजकीय व्यवस्था, साईनाथ नागपूर

Semester VI Paper No. XVI DSE E- 205**Title: Western Political Thought- II****Course Outcome:**

1. The students will understand Political views of J. S. Mill, Karl Marx, Gramsci & Hannah Arendt
2. The students will get acquainted with various aspects of state and society with western perspective.

Sr. No.	Unit No. and Title of the Unit	Teaching Hours	Credits
1.	Unit 1: J.S. Mill	15	01
2.	Unit – 2 Karl Marx	15	01
3.	Unit 3 – Antonio Gramsci	15	01
4.	Unit – 4 Hannah Arendt	15	01

Re commended Books :

- 1) Francis W. Coker - Recent Political Thought, The world Press Pvt. Ltd.
- 2) George H. Sabine - A History of Political theory, George G. Harrap & comoany Ltd. London.
- 3) C.L. Wayper - Political thought, S.T. Pauls, Honce Warwick lane London, Ec. 4
- 4) V.D. Mahajan & R.R. Seth, Recent Political Thought, Premier Publishing Co, Delhi.
- 5) William Ebenstein, Great Political Thinkers – Plato To the present Modern Political thought, The great Issues, IInd Edition, Oxford & IBH Publishing company.
- 6) Radhey Sham Chourasia, History of western Political thought – Volume I & II
- 7) Suda J.P., History of Political Thought, K.Nath, Meerut ,Vol. 1 to 3 ,Reprint,2017
- 8) Steve Buckler Hannah Arendt and Political Theory : Challenging the tradition, Edinburg University Press, 2011
- 9) Murray Forsyth and Muurice Keens- Soper The Political Classics : Green to Dworkin, OUP, 1996
- 10) Weisman Tama , Hannah Arendt and Karl Marx : On Totalitarianism and the Tradition of Western Political Thought
- 11 Buttigieg Joseph, (Ed.) Antonio Gramsci –Prision Notebooks, Columbia University Press,2011
- 12 Arendt Hannah, The Origins of Totalitarianism, Schocken Books,1951
- 13 शृंगारपुरे अरविंद, भारतीय तथा पाश्चिमात्य राजकीय विचार,मंगेश,नागपूर
- 14 भोळे भा.ल., भारतीय आणि पाश्चिमात्य राजकीय विचार, पिंपळापुरे, नागपूर
- 15 गर्दे दि.का., पाश्चिमात्य राजकीय विचार प्रवाह, महाराष्ट्र राज्य ग्रंथ निर्मिती , पुणे
- 16 डोळे ना.य.,राजकीय विचारांचा इतिहास,कॉनंटीनेटल,पुणे
- 17 कुलकर्णी सुधाकर ,निवडक राजकीय विचारवंत, विद्याभारती ,लातूर
- 18 देव विजय आणि इतर , पाश्च्यात्य राजकीय विचारवंत, डायमंड,पुणे,2012
- 19 चौसाळकर अशोक ,मार्क्सवाद –उत्तरमार्क्सवाद,प्रतिमा,पुणे,2010

SHIVAJI UNIVERSITY, KOLHAPUR.



Accredited By NAAC with 'A' Grade

Revised Syllabus For

B. A. Part-III & B. A. B. Ed.

Geography

(Evolution of Geographical Thought)

CBCS PATTERN

Syllabus to be implemented from

(Subject to the modifications to be made from time to time)

Syllabus to be implemented from June 2020 onwards

**B. A. Part – III & B. A. B. Ed. Geography
(Evolution of Geographical Thought)
Sem-V**

Syllabus to be implemented from June 2020 onwards

1. TITLE : Evolution of Geographical Thought

Optional under the Faculty of Science

2. YEAR OF IMPLEMENTATION :

Revised Syllabus will be implemented from June 2020 onwards.

3. PREAMBLE

This curriculum focuses on the understanding of core and fundamental branches of the discipline. This paper is specially designed to cater to foundation building of the students by imparting knowledge about the pillars of geography. It encompasses the evolution of the subject right from the experiences and understanding of travelers and explorers regarding space, place and people to the progression towards establishment of the discipline geography in sciences.

4. GENERAL OBJECTIVES OF THE COURSE

- 1) To study the historical evolution of geographic thought.
- 2) An analysis of different paradigms in geography.
- 3) To evaluating the contemporary trends in geographical studies.
- 4) To study the paradigms and debates in the geographical studies.
- 5) To study the recent trends in geography.

5. COURSE OUTCOMES

- 1) Student should be able to understand in-depth about the Evolution of Geographical Thought.
- 2) Students should be able to analyse the recent trends in geography.
- 3) Student should be able to make use of various models of paradigms and debates in the geographical studies.
- 4) Understanding of recent trends in geography.

6. DURATION

- The course shall be a full time course
- The duration of course shall be of one year (Sem. – V)

7. PATTERN

Pattern of Examination will be Semester

8. FEE STRUCTURE

(As per the Shivaji University rules; and as applicable to regular)

9. ELIGIBILITY FOR ADMISSION :

As per eligibility criteria prescribed for each course and the merit list in the qualifying examination.

10. MEDIUM OF INSTRUCTION :

The medium of instruction shall be in English or Marathi. (as applicable to the course /programme concerned.)

11. STRUCTURE OF COURSE 50 MARKS

(Note – The structure & title of papers of the degree as a whole should be submitted at the time of submission/revision of first year syllabus.)

SEMESTER FIFTH

Paper No.

Title Marks

DSE-E106 or VII, Evolution of Geographical Thought

50

12. SCHEME OF TEACHING AND EXAMINATION

[The scheme of teaching and examination should be given as applicable to the course/paper concerned.]

Sr. No.	Subject/Paper	Teaching Scheme (Hrs/Week)				Examination Scheme (Marks)		
		L	T	P	Total	Theory	Term Work	Total
1	Evolution of Geographical Thought	04	04	00	04	40	10	50

13. SCHEME OF EXAMINATION :

- The examination shall be conducted at the end of each semester
- The theory paper shall carry 40 marks
- The term work shall carry 10 marks
- The evaluation of the performance of the students in theory papers shall be on the basis of Semester Examination of 50 marks.
- Question Paper will be set in the view of the /in accordance with the entire Syllabus and preferably covering each unit of syllabi.

14. STANDARD OF PASSING:

As Prescribed under rules & regulation for each degree/ programme.

15. NATURE OF QUESTION PAPER AND SCHEME OF MARKING :

(Unit wise weightage of marks should also be mentioned)

Semester V	Marks
Question : 1) Objective Type Question (Multiple Choice)	05
Question: 2) Short Notes (Any three out of five)	15
Question: 3) Detailed Answer Type Question (Any two out of three)	20

16. EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS- (FOR REVISED SYLLABUS)

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1	Physical Geography of India	VII	Evolution of Geographical Thought	E106 or VII

17. SPECIAL INSTRUCTIONS, IF ANY.

**NEW/REVISED SYLLABUS FOR
B. A. Part-III and B. A. B. Ed. Geography
(Introduced from June 2020 onwards)
Semester - V**

(i) E106 or Paper No. VII

(ii) Title of Paper: Evolution of Geographical Thought

Module	Teaching Hours	Credit
Module – I Geography in Ancient Period	15	1
1.1 Contribution of Greeks and Romans		
1.2 Arab Geographical Thoughts		
1.3 Indian Geographical Thoughts		
1.4 Exploration and Development of Geography		
Module – II Schools of Geography	15	1
2.1 German School of Geography – Alexander von Humboldt		
2.2 French School of Geography – Vedal de la Blache		
2.3 American School of Geography – William Moris Davis		
2.4 British School of Geography – Halford J. Mackinder		
Module – III Dualisms in Geography	15	1
3.1 Determinism Vs Possibilism		
3.2 Systematic Vs Regional geography		
3.3 Physical Vs Human geography		
3.4 Historical Vs Contemporary		
Module – IV Trends in Geography	15	1
4.1 Quantitative Revolution		
4.2 Model Building in Geography		

4.3 Man-nature relationship: Radicalism, Behaviourism and Humanism

4.4 Future of Geography

Books Recommended :

Adhkari, S. (2006) *Fundamentals of Geographical Thought*, Chaitanya Publishing House, Allahabad.

Bunkse, V.E. (2004) *Geography and the art of Life*, John Hopkins University Press, Baltimore,

Dikshit, R. D. (1997). *Geographical Thought: A Contextual History of Ideas*. Delhi, India: Prentice– Hall India.

Dixit, R.D. (2001) *Geographical Thought : A critical History of ideas*, Prentice Hall of India, New Delhi

Dixit, R.D. (2001) *भौगोलिक चिंतन*, Prentice Hall of India, New Delhi

Gaile, G. and Wilmot, C. (ed) (2003) *Geography in America at the Dawn of the 21st Century*, Oxford University Press, Oxford & New York.

Harvey, David., (1969): *Explanation in Geography*, London: Arnold.

Hubbard, P. et al (2002) *Thinking Geographically : Space, Theory and Contemporary Human Geography*, Continuum, London

Johnston, R.J. (1988) *The Future of Geography*, Methuen, London,

Johnston, R.J. and Claval, P. (1984) *Geography since the Second World War : An International survey*, Crown Haim, Sydney.

Majid Husain (2007): *Evolution of Geographic Thought* Rawat Publication, Jaipur

Marcus, D. (1999) *Post – Structuralism in Geography, The Diabolical Arts of Spatial Sciences*, Edinburgh University Press, Edinburgh.

Martin Geoffrey J. (2005). *All Possible Worlds: A History of Geographical Ideas*, UK: Oxford.

Singh, R.B. (2016). *Progress in Indian Geography*. New Delhi, India: Indian National Science Academy.

Sudeepta, A. (2015). *Fundamentals of Geographical Thought*. Delhi, India: Orient black swan private limited.

e-PG Pathshala: <https://epgp.inflibnet.ac.in/>

MOOCS - NPTEL: <https://nptel.ac.in/>

MOOCS - SWAYAM: <https://swayam.gov.in/>

National Digital Library of India: <https://ndl.iitkgp.ac.in/>

Shivaji University Library (E-Resources): <http://www.unishivaji.ac.in/library/E-Resources>

SHIVAJI UNIVERSITY, KOLHAPUR.



Accredited By NAAC with 'A' Grade

Revised Syllabus For

B. A. Part-III & B. A. B. Ed.

Geography
(Economic Geography)

CBCS PATTERN

Syllabus to be implemented from

(Subject to the modifications to be made from time to time)

Syllabus to be implemented from June 2020 onwards

B. A. Part – III & B. A. B. Ed.
Geography (Economic Geography)
Syllabus to be implemented from June 2020 onwards
Semester-VI

1. TITLE : Economic Geography

Optional under the Faculty of Science

2. YEAR OF IMPLEMENTATION :

Revised Syllabus will be implemented from June 2020 onwards.

3. PREAMBLE

[**Note :-** The Board of Studies should briefly mention foundation, core and applied components of the course/paper. The student should get into the prime objectives and expected level of study with required outcome in terms of basic and advance knowledge at examination level.]

4. GENERAL OBJECTIVES OF THE COURSE

- 6) To study the basics of economic geography.
- 7) To study the locational factors of economic activities with special reference to agriculture and industry.
- 8) To study the basics concepts related to manufacturing and major manufacturing industries of selected countries of the world.
- 9) To study the transport and trade.

5. COURSE OUTCOMES

- 5) In depth understanding about the economic geography.
- 6) Detailed knowledge about locational factors of economic activities with special reference to agriculture and industry.
- 7) Detailed understanding of the basics concepts related to manufacturing and major manufacturing industries (selected countries) of the world.
- 8) Understanding of the transport and trade.

6. DURATION

- The course shall be a full time course
- The duration of course shall be of one year (Sem. – VI)

7. PATTERN

Pattern of Examination will be Semester

8. FEE STRUCTURE

(As per the Shivaji University rules; and as applicable to regular)

9. ELIGIBILITY FOR ADMISSION :

As per eligibility criteria prescribed for each course and the merit list in the qualifying examination.

10. MEDIUM OF INSTRUCTION :

The medium of instruction shall be in English or Marathi. (as applicable to the course /programme concerned.)

11. STRUCTURE OF COURSE 50 MARKS

(Note – The structure & title of papers of the degree as a whole should be submitted at the time of submission/revision of first year syllabus.)

SEMESTER SIX

Paper No.

DSE-E231 or X, Economic Geography

Title Marks

50

12. SCHEME OF TEACHING AND EXAMINATION

[The scheme of teaching and examination should be given as applicable to the course/paper concerned.]

Sr. No.	Subject/Paper	Teaching Scheme (Hrs/Week)				Examination Scheme (Marks)		
		L	T	P	Total	Theory	Term Work	Total
1	Economic Geography	04	04	00	04	40	10	50

14. SCHEME OF EXAMINATION :

- The examination shall be conducted at the end of each semester
- The theory paper shall carry 40 marks
- The term work shall carry 10 marks
- The evaluation of the performance of the students in theory papers shall be on the basis of Semester Examination of 50 marks.
- Question Paper will be set in the view of the /in accordance with the entire Syllabus and preferably covering each unit of syllabi.

15. STANDARD OF PASSING:

As Prescribed under rules & regulation for each degree/ programme.

16. NATURE OF QUESTION PAPER AND SCHEME OF MARKING :

(Unit wise weightage of marks should also be mentioned)

Semester -VI	Marks
Question: 1) Objective Type Question (Multiple Choice)	05
Question: 2) Short Notes (Any three out of five)	15
Question: 3) Detailed Answer Type Question (Any two out of three)	20

17. EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS- (FOR REVISED SYLLABUS)

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1	Economic Geography of India	X	Economic Geography	DSE-E231 or X

18. SPECIAL INSTRUCTIONS, IF ANY.

**NEW/REVISED SYLLABUS FOR
B. A. Part-III and B. A. B. Ed. Geography
(Syllabus to be implemented from June 2020 onwards)
Semester - VI**

(iii) E231 or Paper No. X

(iv) Title of Paper: Economic Geography

Module	Teaching Hours	Credit
Module – I Introduction to Economic Geography	15	1
1.1 Definition, Nature and Scope		
1.2 Concept and Classification of Economic Activity		
1.3 Branches of Economic Geography		
1.4 Significance of Economic Geography		
Module – II Economic Activity	15	1
2.1 Factors Affecting on Location of Agricultural Activity		
2.2 Factors Affecting on Location of Industrial Activity		
2.3 Alfred Weber’s Theory of Industrial Location		
Module – III Manufacturing Activity	15	1
3.1 Concept of Manufacturing Region		
3.2 Concept of Special Economic Zone		
3.3 Major Industries: i) Cotton Textile Industry - USA		
ii) Iron and Steel Industry – USA		
iii) Sugar Industry – Brazil		
iv) Automobile Industry – India		
Module – IV Transport and Trade	15	1
4.1 Significance of Transportation		
4.2 Major Transport Routs: Roadway, Railway, Airway and Ocean Routs		

4.3 International Trade: India and USA

4.4 Trade Policies: India and USA

Books Recommended:

References

- Alexander J. W., (1963): Economic Geography, Prentice Hall Inc Englewood Cliffs, New Jersey.
- Boesch H. (1964) : A Geography of world Economy” D. Van Nostrand co. New York.
- Coe N. M., and others, (2007): Economic Geography: A Contemporary Introduction, Wiley-Blackwell.
- Combes P., Mayer T. and Thisse J. F., (2008) Economic Geography: The Intergration of Regions and Nations, Princeton University Press.
- Goh Chang & Morgan, G.C. (1997): Human and Economic Geography, Oxford University Press.
- H. Robinson (1978): Economic Geography, Macdonald & Evans.
- Hamilton, I (1992) : Resources and Industry, Oxford University Press New York.
- Hartshorn, T.N. and Alexander, J.W. (1994): Economic Geography, Prentice Hall, New Delhi.
- Hodder B. W. and Lee Roger, (1974): Economic Geography, Taylor and Francis.
- Meyer, B. S., Anderson, D. B. and Bohning, R. H. (1960): An Introduction to Plant Physiology, Von Nostrand Company, New York.
- Roberts D (2001) : Globalization and Environment E. Elgar CO.U.K.
- Sadhukhan S. K., (1990): Economic Geography An Appraisal of Resources, S. Chand and Company Ltd., New Delhi.
- Truman A. Hartshorn and John W. Alexander, (1988): Economic Geography, PHI Learning Private Limited, New Delhi.
- Walker, D. F., Collins, L. (Eds.), (1975): Locational Dynamics of Manufacturing Activity, John Wiley and Sons, New York.
- Wheeler J. O., (1995) : Economic Geography John Wiley, New York.
- White H.P. and Senior M.L. (1983) Transport Geography, Longman, London.
- Willington D. E., (2008): Economic Geography, Husband Press.
- Zimmermann, E. W., (1933): World's Resources and Industries, Harper and Row, New York.
- खतीब के. ए. — आर्थिक भूगोल, अजब प्रकाशन, कोल्हापूर
- धारपूर विठ्ठल — आर्थिक भूगोल, पिंपळापुरे अँड कं, नागपूर
- सवदी, कोळेकर — आधुनिक भूगोल, निराली प्रकाशन, पुणे.
- सवदी कोळेकर (२००८) — भूगोलाची मुलतत्वे, खंड दुसरा, निराली प्रकाशन

SHIVAJI UNIVERSITY, KOLHAPUR.



Accredited By NAAC with 'A' Grade

Revised Syllabus For

B. A. Part-III & B. A. B. Ed.

Geography of India

CBCS PATTERN

(Subject to the modifications to be made from time to time)

Syllabus to be implemented from June 2020 onwards

**Accredited By NAAC
With 'A' Grade
New/Revised Syllabus For**

B. A. Part – III / B. A. B. Ed.

DSE (Discipline Specific Elective) – E107 (Paper No. VIII) Geography (Sem. V)

Syllabus to be implemented from June 2020 onwards

A] Ordinance and Regulations:-

(As applicable to degree/program)

B] Shivaji University, Kolhapur

New/Revised Syllabus for Bachelor of Arts and B. A. B. Ed.

1. TITLE: Subject – GEOGRAPHY OF INDIA

Optional/Compulsory/Additional/IDS under the Faculty of Science

2. YEAR OF IMPLEMENTATION: - New/Revised Syllabi will be implemented from June 2020 onwards.

3. PREAMBLE:-

The present course focuses on the studies of Geography of India should briefly mention foundation, core and applied components. The student should get into the prime objectives and expected level of study with required outcome in terms of basic and advance knowledge of physiography, climate, drainage, soils, vegetation, agriculture and industry etc.

4. GENERAL OBJECTIVES OF THE COURSE/ PAPER/:

(As applicable to the Degree /Subject- Paper concerned)

- 1) To acquaint the students with distinct dimensions of India and physical setup of the country.
- 2) To focus the climate of India and mechanism of monsoon of India.
- 3) To get information about soils and vegetations in India.
- 4) To help the students to understand recent trends in regional study.
- 5) To focus on the mineral, agricultural and industrial product of the country.
- 6) To understand the economic setup of the country.

4.1 COURSE OUTCOMES

- 1) In depth understanding the dimensions and physiography of India.
- 2) The students are fully aware about the climatic seasons in India.

- 3) Detailed knowledge about soils, vegetations, drainage systems in India.
- 4) Understanding an importance of agriculture and industry in Indian economy.
- 5) Detailed knowledge about the economic setup of the India.

5. DURATION

- **The course shall be a full time course.**
- **The duration of course shall be of Three years, as applicable to the respective degree.**

6. PATTERN:-

Pattern of Examination will be Semester.

7. FEE STRUCTURE :-

As per Government /University rules.

[Note: - In case of any New degree/Program started at university/college, the respective colleges/ Dept. should submit a separate proposal of fee structure to BOS office. (i. e. Tution Fee & Laboratory Fee, if any.)

8. ELIGIBILITY FOR ADMISSION:-

As per eligibility criteria prescribed for respective degree program and the merit in the qualifying examination (i.e. Entrance Examination), if any.

9. MEDIUM OF INSTRUCTION:

The medium of instruction shall be in English or Marathi. (as applicable to the course / programme concerned.)

10. STRUCTURE OF COURSE = 50 marks

(Note – The structure & title of papers of the degree as a whole should be submitted at the time of submission/revision of first year syllabus.)

SEMESTER FIFTH

Paper No.

Title Marks

E107 (DSE)/Paper No. VIII, Geography of India

50

11. SCHEME OF TEACHING:

The scheme of teaching and examination should be given as applicable to the course / paper concerned.

Sr. No.	Subject/Papers	Teaching Scheme Per Week				Examination Scheme (Marks)			
		L	T	P	Total	Theory	Practical	Term work	Total
1	Geography of India	04	04	-	04	40	-	10	50

12. SCHEME OF EXAMINATION:

- The examination shall be conducted at the end of each term for semester pattern.
- The Theory paper shall carry 40 marks and term work shall carry 10 marks (as applicable to the course).
- The evaluation of the performance of the students in theory papers shall be on the basis of Semester Examination of 40 marks.
- Question Paper will be set in the view of the /in accordance with the entire Syllabus and preferably covering each unit of syllabi.

13. STANDARD OF PASSING:

As per Prescribed rules and regulation for each degree / programme.

14. NATURE OF QUESTION PAPER AND SCHEME OF MARKING:

(Unit wise weightage of marks should also be mentioned)

Semester V	Marks
Question: 1) Objective Type Question (Multiple Choice)	05
Question: 2) Short Notes (Any three out of five)	15
Question: 3) Detailed Answer Type Question (Any two out of three)	20

15. EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS- (FOR REVISED SYLLABUS)

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1	Economic Geography	VIII	Geography of India	DSE-E 107 Or VIII

16. SPECIAL INSTRUCTIONS, IF ANY – Nil

New/ Revised syllabus for B. A. Part-III and B. A. B. Ed. (Semester -V) (Syllabus to be implemented from June 2020 onwards)

(i) Paper – E107 or VIII

(ii) Title of Paper - Geography of India.

(iii) Specific Objectives: -----

(iv) A brief note: - (On expected level of study from examination and assessment point of view) :- -----

Module	Lectures	Credit
Module -I) Physical Profile of India	20	1
1.1) Location (Absolute and Relative)		
1.2) Physiographic Divisions (Characteristics and Importance)		
1.3) Climate: Summer, Rainy and Winter Seasons in India (weather conditions and Characteristics)		
1.4) Major Drainage Systems: a) Northern River Systems (Sindhu, Ganga & Brahmaputra) b) Southern River Systems (Godavari, Krishna & Cauvery) (Characteristics and Importance)		
Module -II) Soils and Forests	14	1
2.1 Major soil types, characteristics and its distribution in India		
2.2 Soil degradation and soil conservation in India		
2.3 Major forest types: characteristics and their distribution		
2.4 Deforestation and conservation of forests in India		
Module -III) Mineral and Power Resources	13	1
3.1 Conventional Resources: Iron Ore and Manganese (Distribution, Production and Trade)		
3.2 Power Resources: Coal and Mineral Oil (Distribution, Production and Trade)		

3.2 Non Conventional Resources: Solar and Wind (Distribution, Production and Trade)

Module -IV) Agriculture and Industry

13

1

4.1 Importance of Agriculture in Indian Economy.

4.2 Major Crops: Rice and Sugarcane (Distribution, Production and Trade)

4.3 Importance of Industries in Indian Economy.

4.4 Industries: Location Factors, Sugar Industry, Iron and Steel Industry and Fertilizer Industry (Distribution, Production and Trade)

References:

1. Majid H., (2013): Geography of India, Tata Mcgraw Hill Education (India) Private Limited, New Delhi.
2. Khullar R. D. (2007): India- A Comprehensive Geography, Kalayani Publisher.
3. Tiwari, R.C. (2007) Geography of India. Prayag Pustak Bhawan, Allahabad.
4. Singh R. L., (1971): India: A Regional Geography, National Geographical Society of India.
5. Deshpande C. D., (1992): India: A Regional Interpretation, ICSSR, New Delhi.
6. Johnson, B. L. C., ed. (2001). Geographical Dictionary of India. Vision Books, New Delhi.
7. Mandal R. B. (ed.), (1990): Patterns of Regional Geography – An International Perspective. Vol. 3 –
8. Indian Perspective.
9. Sdhasuk Galina and Sengupta P., (1967): Economic Regionalisation of India, Census of India
10. Sharma, T. C. 2003: India - Economic and Commercial Geography. Vikas Publ., New Delhi.
11. Singh, J., (2003),: India - A Comprehensive & Systematic Geography, Gyanodaya Prakashan, Gorakhpur.
12. Spate O. H. K. and Learmonth A. T. A., (1967): India and Pakistan: A General and Regional
13. Geography, Methuen.

14. Tirtha, R., (2002): Geography of India, Rawat Publs., Jaipur & New Delhi.
15. Pathak, C. R. (2003): Spatial Structure and Processes of Development in India. Regional Science
Assoc., Kolkata.
16. Sharma, T.C. (2013): Economic Geography of India. Rawat Publication, Jaipur.
17. Savadi, Kolkar: Bharatacha Samarag Bhugol, Nirali Prakashan, Pune.
18. Khatib K. A.,: Geography of India
19. Pawar C.T. & Others : Geography of India.
20. Soil and Water conservation manual Govt. of India.

SHIVAJI UNIVERSITY, KOLHAPUR.



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Revised Syllabus For

Bachelor of Arts Part III and B. A. B. Ed.

Geography

(Choice Based Credit System)

Semester-VI

Urban Geography

Or

Regional Planning and Sustainable Development

(Subject to the modifications to be made from time to time)

Implemented From June, 2020 onward

**B. A. Part – III & B. A. B. Ed.
Geography (Urban Geography), Semester-VI
Implemented From June, 2020 onward**

A] Ordinance and Regulations:-

(As applicable to degree/programme)

B] Shivaji University, Kolhapur

Revised Syllabus For B. A. Part – III and B. A. B. Ed.

1. TITLE: Subject – Urban Geography

2. FACULTY of SCIENCE:- Optional under the Faculty of Science

3. YEAR OF IMPLEMENTATION: - Revised Syllabus will be implemented from June 2020 onwards.

4. PREAMBLE:-

[**Note:** - The Board of Studies should briefly mention foundation, core and applied components of the course/paper. The student should get into the prime objectives and expected level of study with required outcome in terms of basic and advance knowledge at examination level.]

5. GENERAL OBJECTIVES OF THE COURSE:

- 1) To Study the basic of Urban Geography.
- 2) To Study the types of Urban Settlements, Site and Situations.
- 3) To get an ideas of relationship between human activities and urban development.
- 4) To make the students capable for handling the present problematic situation in Urban and rural areas.
- 5) To make students as a good urban planner and environmental conservator.

6. COURSE OUTCOMES:

- 1) The students were known the importance of urban settlements through urban geography.
- 2) The students understood the types of Urban Settlements, Site and Situations.
- 3) The students were familiar with an idea of relationship between human activities and urban development.
- 4) Detail understanding of students regarding present urban problems and students are capable to handling of present problematic situations in urban areas.
- 5) The students are developed as a good urban planner and environmental conservator.

6. DURATION

- The course shall be a full time course.
- The duration of course shall be of one semester.

7. PATTERN:-

Pattern of Examination will be Semester

8. FEE STRUCTURE:-

(as applicable to regular course determined by the university and other fee will be applicable as per University rules/norms)

9. ELIGIBILITY CRITERIA FOR ADMISSION:

As per eligibility criteria prescribed for each course and the merit list in the qualifying examination.

10. MEDIUM OF INSTRUCTION:

The medium of instruction shall be in English or Marathi. (as applicable to the course/programme concerned.)

11. STRUCTURE OF COURSE-

(Note – The structure & title of papers of the degree as a whole should be submitted at the time of submission/revision of first year syllabus.)

SEMESTER SIXTH

Paper No.

DSE-E232 or XI, Urban Geography

Title Marks

50

12. SCHEME OF TEACHING AND EXAMINATION:

[The scheme of teaching and examination should be given as applicable to the course/paper concerned.]

THIRD YEAR

Scheme of Teaching and Examination

Sr. No.	Subject/Paper	Teaching Scheme (Hrs/Week)				Examination Scheme Sr. (Marks)		
		L	T	P	Total	Theory	Term work	Total
1	Urban Geography	04	04	00	04	40	10	50

SCHEME OF EXAMINATION:

- The examination shall be conducted at the end of each semester
- The Theory paper shall carry 50 marks
- The term work shall carry 10 marks
- The evaluation of the performance of the students in theory papers shall be on the basis of semester Examination of 50 marks.
- Question Paper will be set in the view of the /in accordance with the entire Syllabus and preferably covering each unit of syllabi.

13. STANDARD OF PASSING:

As Prescribed under rules & regulation for each degree/programme.

14. NATURE OF QUESTION PAPER AND SCHEME OF MARKING:

(Unit wise weightage of marks should also be mentioned)

Semester VI		Marks
Question 1)	Objective Type Question (Multiple Choice)	05
Question 2)	Short Note Type Question (Any four out of six)	15
Question 3)	Detail Answers Type Question (Any two out of three)	20

15. EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS- (FOR REVISED SYLLABUS)

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1	Urban Geography	XI	Urban Geography	DSE-E232 or XI

16. SPECIAL INSTRUCTIONS, IF ANY.

REVISED SYLLABUS FOR
(Choice Based Credit System)
B. A. Part-III and B. A. B. Ed, Geography
(Introduced from June 2020 onwards)

Semester – VI

(i) DSE- E232 or XI

(ii) Title of Paper: - Urban Geography

(iii) Specific Objectives:-

(iv) A brief note: - (On expected level of study from examination and assessment point of view):- -----

Modules	No. of Lectures
Credit	
Module-I: Introduction to Urban Geography	15
	01
1.1 Urban Geography: Meaning and Definitions	
1.2 Nature and Scope of Urban Geography	
1.3 Approaches of Urban Geography	
1.4 Significance of Urban Geography	
Module-II: Urbanization	15
	01
2.1 Site and Situation: Significance and Types	
2.2 Concept and Factors of Urbanization	
2.3 Patterns of Urbanization in developed and developing countries	
2.4 Functional classification of cities (Quantitative and Qualitative)	
Module-III: 3 Structure and Morphology of Urban Centers	15
	01
3.1 Structure and Morphology	
3.2 City Region and C.B.D.	
3.3 Rural-Urban Fringe	
3.4 Models of Town Morphology: The Concentric Zone Theory, the Sector Theory and the Multi-Nuclei Theory	

01

- 4.1 Urban Issues: problems of housing, slums, civic amenities (water and transport)
- 4.2 Concept of Garden City
- 4.3 Urban Planning in India
- 4.4 Case studies of Mumbai and Chandigarh with reference to Land use and Urban Issues

References

1. Tim Hall. (1998): Urban Geography, Routledge ,London.
2. Verma L.N.: Urban Geography, Rawat Publications, Jaipur.
3. Johnson J. H. (1967): Urban Geography, An Introductory Analysis.
4. Bose A., : India's Urbanization 1974-2000, Tata McGraw Hill, New Delhi.
5. Carter H. (1972): The study of urban Geography, Edward Arnold, London.
6. Smailes A. E. : The Geography of Towns.
7. Taylor and Pntnam : Geography of UrbanPlaces.
8. Hudson F : SettlementGeogrpahy

१दशपाइसी.डी.१९८३.शहरे-कॉन्सीरैलप्रकाशन,पुं

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१०. र्नावदी,कोळेकर,२००५.आधुनिकभूगोलनिरालीप्रकाशन,पुं११. खतीबके. ए. २००७ :

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वसाहतीभूगोल, अजबप्रकाशन, कोल्हापूर

12. Mandal : Urban Geography

B. A. Part – III & B. A. B. Ed. Geography
Semester-VI
(Regional Planning and Sustainable Development)
Implemented From June, 2020 onward

A] Ordinance and Regulations:-
(As applicable to degree/programme)

B] Shivaji University, Kolhapur
Revised Syllabus For B. A. Part – III and B. A. B. Ed.

1. TITLE: Subject – Regional Planning and Sustainable Development

2. FACULTY of SCIENCE:- Optional under the Faculty of Science

3. YEAR OF IMPLEMENTATION: - Revised Syllabus will be implemented from June 2020 onwards.

4. PREAMBLE:-

Regional Planning is the need of time to everyone. Geography subject can lead to the development of human activities through regional planning. In the process of development of geography, the changing nature of subject will make aware to the students about the recent technologies used in geography. This will further help to improve the use of geographical techniques and methods in teaching, learning and research work through regional planning.

5. GENERAL OBJECTIVES OF THE COURSE:

- 1) To introduce the students with the importance of regional planning.
- 2) To understand the concepts of region, regionalization, regional planning & development.
- 3) To give basic information to the students about the region.
- 4) To get familiar with indicators of measurement of development.
- 5) To understand Perroux's Growth Pole Model & Growth Center Model in Indian context.
- 6) To develop skills for demarcation of region.
- 7) To aware the students regional planning with recent technology.

6. COURSE OUTCOMES:

- 6) The students were known the importance of regional planning.
- 7) The students understood the concepts of region, regionalization, regional planning & development and detailed knowledge of region.

- 8) The students were familiar with indicators of measurement of development.
- 9) Detail understanding of Perroux's Growth Pole Model & Growth Center Model in Indian context.
- 10) The students are develop skills for demarcation of region and aware the regional planning with recent technology.

6. DURATION

- The course shall be a full time course.
- The duration of course shall be of one semester.

7. PATTERN:-

Pattern of Examination will be Semester

8. FEE STRUCTURE:-

(as applicable to regular course determined by the university and other fee will be applicable as per University rules/norms)

9. ELIGIBILITY CRITERIA FOR ADMISSION:

As per eligibility criteria prescribed for each course and the merit list in the qualifying examination.

10. MEDIUM OF INSTRUCTION:

The medium of instruction shall be in English or Marathi. (as applicable to the course/programme concerned.)

11. STRUCTURE OF COURSE-

(Note – The structure & title of papers of the degree as a whole should be submitted at the time of submission/revision of first year syllabus.)

SEMESTER SIXTH

Paper No.	Title Marks
DSE-E232 or XI, Regional Planning and Sustainable Development	40

12. SCHEME OF TEACHING AND EXAMINATION:

[The scheme of teaching and examination should be given as applicable to the course/paper concerned.]

THIRD YEAR

Scheme of Teaching and Examination

Sr. No.	Subject/Paper	Teaching Scheme (Hrs/Week)				Examination Scheme Sr. (Marks)		
		L	T	P	Total	Theory	Term work	Total
1	Regional Planning and Sustainable Development	04	04	00	04	40	10	50

SCHEME OF EXAMINATION:

- The examination shall be conducted at the end of each semester
- The Theory paper shall carry 50 marks
- The term work shall carry 10 marks
- The evaluation of the performance of the students in theory papers shall be on the basis of semester Examination of 50 marks.
- Question Paper will be set in the view of the /in accordance with the entire Syllabus and preferably covering each unit of syllabi.

13. STANDARD OF PASSING:

As Prescribed under rules & regulation for each degree/programme.

14. NATURE OF QUESTION PAPER AND SCHEME OF MARKING:

(Unit wise weightage of marks should also be mentioned)

Semester VI	Marks
Question 1) Objective Type Question (Multiple Choice)	05
Question 2) Short Note Type Question (Any four out of six)	15
Question 3) Detail Answers Type Question (Any two out of three)	20

15. EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS- (FOR REVISED SYLLABUS)

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1	Urban Geography	XI	Regional Planning and Sustainable	DSE-E232 or XI

16. SPECIAL INSTRUCTIONS, IF ANY.

REVISED SYLLABUS FOR
(Choice Based Credit System)
B. A. Part-III and B. A. B. Ed, Geography
(Implemented From June, 2020 onward)

Semester – VI

(i) DSE- E232 or XI

(ii) Title of Paper: - Regional Planning and Sustainable Development

(iii) Specific Objectives:-

(iv) A brief note: - (On expected level of study from examination and assessment point of view):- -----

Modules	No. of Lectures	
Credit		
Module I: Region and Regionalization	(15)	1
1.1 Definition, Concept of Region and Regionalization		
1.2 Characteristics of Region		
1.3 Types of Region		
1.4 Demarcation of Region		
Module II: Regional Planning	(15)	1
2.1 Concept of Regional Planning		
2.2 Need for Regional Planning and Types of Regional Planning		
2.3 Choice of a Region for Planning		
2.4 Planning Regions of India		
Module III: Models for Regional Planning	(15)	1
3.1 Spread and Backwash Concept		
3.2 Walter Christaller's Central Place Theory		
3.3 Francois Perroux,s Growth Pole Model		
3.4 R. P. Misra's Growth Foci Concept		
Module IV: Sustainable Development	(15)	1
4.1 Concept of Sustainable Development and Underdevelopment		
4.2 Rostow's Growth Model- Stages of Development		
4.3 An Indicators of Measuring Development		
4.4 Human Development Index (HDI)		

18. Recommended Reading Material:

1. Alden, J. and Morgan, (1974): Regional Planning: A Comprehensive View, Leonard Hill Books, Beds.
2. Adrill, J. (1974): New Citizens Guide to Town and Country Planning, Charies knight and Company Ltd. London.
3. Chand, M. & Puri, V. (1983): Regional Planning in India, Allied Publishers Ltd., New Delhi.
4. Chandra, R.C. (2000): Regional Planning and Development, Kalyani Publishers, Ludhiana.
5. Cook. P. (1983): Theories of Planning and Spatial Development, Hutchinson & Company Ltd. London.
6. Diamond, D. (ed) (1982): Regional Disparities and Regional Policies, Pergamon Press, Oxford.
7. Dickinson R.E. (1964): City and Region: A Geographical Interpretation. Routledge and Keagan Paul.
8. Friedman, J. & Alonson W. (1964): Regional Development and Planning. MIT Press. Cambridge.
9. Galasson, John (1974): An Introduction to Regional Planning Hutchinson. Educational London.
10. Hilborot, J.G.M (1971): Regional Planning. Rotterdam University Press, Rotterdam.
11. Misra, R.P. Sundaram K.V. & Rao, V.L.S. Prakasa (1974): Regional Development Planning In India.
12. Misra, R.P. (1992): Regional Planning. Concept Publishing Company. New Delhi.
13. Reddi, K. V. (1988): Rural Development in India, Himalaya Pub, Mumbai.
14. Singh, R.L.(2008): Fundamentals of Human Geography, Sharada Pustak Bhawan, Allahabad.
15. Sundran, K.V. (1977): Urban and Regional Planning in India, Vikas Publishing, New Delhi.
16. Swawy, M.C.K., Bhaskara, R. Hegde, V.M. (eds.) (2008): Urban Planning and Development at Cross Roads, BC Books for Change, Bangalore.
17. Whynnes, Charles & Hammand (1979): Elements of Human Geography, George Aflen & Unwin, London.
Kothari, C. R. (1985): Research Methodology- Methods and Techniques, Wiley Eastern Limited, New Delhi
18. सवदी ए. बी. व कोळेकर पी. एस. (2008): भूगोलाची मूलतत्वे, खंड दुसरा, निराली प्रकाशन, पुणे

SHIVAJI UNIVERSITY, KOLHAPUR.



Accredited By NAAC with 'A' Grade

Revised Syllabus For

B. A. Part-III & B. A. B. Ed.

**Population Geography
Or
Social Geography**

CBCS PATTERN

Syllabus to be implemented from

(Subject to the modifications to be made from time to time)
Syllabus to be implemented from June 2020 onwards

B. A. Part – III and B. A. B. ED.
DSE (Discipline Specific Core Course) E108 Geography (Course / Paper No. IX)
June 2020 onwards
Semester - V

A] Ordinance and Regulations:

(As applicable to degree/program)

B] Shivaji University, Kolhapur

New/Revised Syllabus For **Bachelor of –Arts and B. A. B. Ed.**

1. TITLE: POPULATION GEOGRAPHY

Optional/Compulsory/Additional/IDS under the Faculty of Science

2. YEAR OF IMPLEMENTATION:

New/Revised Syllabi will be implemented from June 2020 onwards.

3. PREAMBLE:-

This curriculum focuses on the understanding of core and fundamental branches of the discipline. This paper is specially designed to learn the role of demography and population studies as a distinct field of human geography. It encompasses sound knowledge of key concept, different components of population. The curriculum has been carefully designed to include conceptual, basic themes, population dynamics and characteristic with contemporary issues.

4. GENERAL OBJECTIVES OF THE COURSE/ PAPER/:

- 1) To study the basics of population geography.
- 2) To study the population growth trends and its distribution.
- 3) To study the population dynamics.
- 4) To study the population compositions and its characteristics.

5. Course Outcomes:

- 1) This paper would bring an understanding of population geography along with relevance of demographic data.
- 2) The students would get an understanding of distribution and trends of population growth in the developed and less developed countries, along with population concepts.
- 3) The students would get an understanding of the dynamics of population.
- 4) An understanding of the implications of population composition in different regions of the world.
- 5) An appreciation of the contemporary issues in the field of population studies

5. DURATION:

- The course shall be a full time course.
- The duration of course shall be of Three years, as applicable to the respective degree.

6. PATTERN:

Pattern of Examination will be Semester.

7. FEE STRUCTURE :

As per Government /University rules.

[Note: - In case of any New degree/Program started at university/college, the respective colleges/ Dept. should submit a separate proposal of fee structure to BOS office. (i. e. Tution Fee & Laboratory Fee, if any.)]

8. ELIGIBILITY FOR ADMISSION:

As per eligibility criteria prescribed for respective degree program and the merit in the qualifying examination (i.e. Entrance Examination), if any.

9. MEDIUM OF INSTRUCTION:

The medium of instruction shall be in English or Marathi. (as applicable to the course / programme concerned.)

10. STRUCTURE OF COURSE = 40 + 10 = 50 marks

(Note – The structure & title of papers of the degree as a whole should be submitted at the time of submission/revision of first year syllabus.)

THIRD YEAR / SEMESTER

Paper No.	Title Marks
Course / Paper DSE-E108 or IX, Population Geography	50

11. SCHEME OF TEACHING:

The scheme of teaching and examination should be given as applicable to the course / paper concerned.

Sr. No.	Subject/Paper	Teaching Scheme (Hrs/Week)				Examination Scheme (Marks)		
		L	T	P	Total	Theory	Term Work	Total
1	Population Geography	04	04	00	04	40	10	50

12. SCHEME OF EXAMINATION:

- The examination shall be conducted at the end of each term for semester pattern.
- The Theory paper shall carry 40 marks (as applicable to the course).
- The term work shall carry 10 marks
- The evaluation of the performance of the students in theory papers shall be on the basis of Semester Examination of 40 marks.
- Question Paper will be set in the view of the /in accordance with the entire Syllabus

and preferably covering each unit of syllabi.

13. STANDARD OF PASSING:

As per Prescribed rules and regulation for each degree / programme.

14. NATURE OF QUESTION PAPER AND SCHEME OF MARKING:

(Unit wise weightage of marks should also be mentioned)

Semester V		Marks
Question: 1)	Objective Type Question (Multiple Choice)	05
Question: 2)	Short Notes (Any three out of five)	15
Question: 3)	Detailed Answer Type Question (Any two out of three)	20

15. EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS- (FOR REVISED SYLLABUS)

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1	Research Methodology	IX	Population Geography	E108 or IX

16. SPECIAL INSTRUCTIONS, IF ANY – Nil

**NEW/REVISED SYLLABUS FOR
B. A. Part-III and B. A. B. Ed. Geography
(Syllabus to be implemented from June 2020 onwards)
Semester - V**

- (i) **Course/ Paper No. E108 or IX**
- (ii) **Title of Paper: - POPULATION GEOGRAPHY**
- (iii) **Specific Objectives: -**
- (iv) **A Brief note: - (On expected level of study from examination and assessment point of view): -.....**

Module	Teaching Hours	Credits
Module I: Introduction to Population Geography	15	01
1.1 Definition of Population Geography		
1.2 Nature and Scope of Population Geography		
1.3 Significance of Population Geography		
1.4 Sources of Population Data		
Module II: Population Growth and Distribution	15	01
2.1 World Population Growth		
2.2 Factors Affecting on the Population Distribution		
2.3 Population Distribution of the World		
2.4 Population Concepts: Minimum Population, Optimum Population and Over Population		
Module III: Population Dynamics	15	01
3.1 Concept of Population Dynamics		
3.2 Fertility: Concept and Types		
3.3 Fertility: Causes, Effects and Measures		
3.4 Mortality: Concept and Types		
3.5 Mortality: Causes, Effects and Measures		
Module IV: Population Composition	15	01
4.1 Age		
4.2 Sex		
4.3 Literacy		
4.4 Rural and Urban Population		

REFERENCES:

1. Barrett H. R., 1995: Population Geography, Oliver and Boyd.
2. Bhende A. and Kanitkar T., 2000: Principles of Population Studies, Himalaya Publishing House.
3. Chandna R. C. and Sidhu M. S., 1980: An Introduction to Population Geography, Kalyani Publishers.
4. Clarke J. I., 1965: Population Geography, Pergamon Press, Oxford.
5. Jones, H. R., 2000: Population Geography, 3rd ed. Paul Chapman, London.
6. Lutz W., Warren C. S. and Scherbov S., 2004: The End of the World Population Growth in the 21st Century, Earthscan
7. Newbold K. B., 2009: Population Geography: Tools and Issues, Rowman and Littlefield Publishers.
8. Pacione M., 1986: Population Geography: Progress and Prospect, Taylor and Francis.
9. Wilson M. G. A., 1968: Population Geography, Nelson.
10. Panda B P (1988): Janasankya Bhugol, M P Hindi Granth Academy, Bhopal
11. Maurya S D (2009) Jansankya Bhugol, Sharda Putak Bhawan, Allahabad
12. Chandna, R C (2006), Jansankhya Bhugol, Kalyani Publishers, Delhi
14. Trewartha, G T (1969), A Geography of Population: world patterns, John Wiley, New York.
15. e-PG Pathshala: <https://epgp.inflibnet.ac.in/>
16. MOOCS - NPTEL: <https://nptel.ac.in/>
17. MOOCS - SWAYAM: <https://swayam.gov.in/>
18. National Digital Library of India: <https://ndl.iitkgp.ac.in/>
19. Shivaji University Library (E-Resources): <http://www.unishivaji.ac.in/library/E-Resources>

**B. A. Part – III & B. A. B. Ed.
Semester - V**

**SOCIAL GEOGRAPHY
Syllabus to be implemented from June 2020 onwards**

1.TITLE : Social Geography

Optional under the Faculty of Science

4. YEAR OF IMPLEMENTATION :

Revised Syllabus will be implemented from June 2020 onwards.

5. PREAMBLE

This curriculum focuses on the understanding of social geography of the discipline. This paper is specially designed to cater to social study of the students by imparting knowledge about the society. Social geography is the branch of human geography that is most closely related to social problems and well being, dealing with the relation of social phenomena and its spatial components. The different conceptions of social geography have been overlapping with other sub-fields of geography. It was basically applied as a synonym for the search for patterns in the distribution of social groups and there problems.

9. GENERAL OBJECTIVES OF THE COURSE

- 1) Understanding the concept, origin, nature and scope of social geography.
- 2) To study the migration, technological and occupational changes in India peoples.
- 3) An analysis of different social categories and their spatial distribution.
- 4) To understand the geographies of social welfare and well being.

4.1 COURSE OUTCOMES

- 6) In depth understanding the problems and prospects of society in India.
- 7) The students are fully aware about the migration, technological and occupational changes in India peoples.
- 8) Detailed knowledge about the social categories and communities in world.
- 9) Understanding concepts of social well being and welfare.

5. DURATION

- The course shall be a full time course
- The duration of course shall be of one year (Sem. – V)

6. PATTERN:

Pattern of Examination Will Be Semester

7. FEE STRUCTURE:

As per Government /University rules.

[Note: - In case of any New degree/Program started at university/college, the respective colleges/ Dept. should submit a separate proposal of fee structure to BOS office. (i. e. Tution Fee & Laboratory Fee, if any.)]

9. MEDIUM OF INSTRUCTION:

The medium of instruction shall be in English or Marathi. (as applicable to the course / programme concerned.)

10. STRUCTURE OF COURSE = 50 marks

(Note – The structure & title of papers of the degree as a whole should be submitted at the time of submission/revision of first year syllabus.)

SEMESTER FIFTH

Paper No.

Title Marks

DSE-E108 or IX, Social Geography

50

12. SCHEME OF TEACHING AND EXAMINATION

[The scheme of teaching and examination should be given as applicable to the course/paper concerned.]

Sr. No.	Subject/Paper	Teaching Scheme (Hrs/Week)				Examination Scheme (Marks)		
		L	T	P	Total	Theory	Term Work	Total
1	Social Geography	04	04	00	04	40	10	50

15. SCHEME OF EXAMINATION :

- The examination shall be conducted at the end of each semester.
- The Theory paper shall carry 50 marks.
- The term work shall carry 10 marks.

- The evaluation of the performance of the students in theory papers shall be on the basis of semester Examination of 50 marks.
- Question Paper will be set in the view of the /in accordance with the entire Syllabus and preferably covering each unit of syllabi.

14. STANDARD OF PASSING: As Prescribed under rules & regulation for each degree/ programme.

15. NATURE OF QUESTION PAPER AND SCHEME OF MARKING :-

(Unit wise weightage of marks should also be mentioned)

Semester V	Marks
Question : 1) Objective Type Question (Multiple Choice)	05
Question: 2) Short Notes (Any three out of five)	15
Question: 3) Detailed Answer Type Question (Any two out of three)	20

**18. EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS-
(FOR REVISED SYLLABUS)**

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1	Research Methodology	IX	Social Geography	E108 or Paper No. IX

17. SPECIAL INSTRUCTIONS, IF ANY.

**NEW/REVISED CBCS PATTERN SYLLABUS FOR
B. A. - Part III and B. Ed. Geography Elective Discipline Specific
DSE –E108 or Paper No. IX
(Introduced from June 2020 onwards)**

Semester – V

(v) Paper – E108 or IX

(vi) Title of Paper: Social Geography

Module	Teaching Hours	Credit
Module-I: Introduction to Social Geography	15	(1)
1.1 Definitions, Nature and Scope of Social Geography		
1.2 Sub-branches of Social Geography		
1.3 Relationship with other Social Sciences		
1.4 Approaches and Significance of Social Geography		
Module-II: Peopling Process in India	15	(1)
2.1 Educational Changes		
2.2 Technological Changes		
2.3 Occupational Changes		
2.4 Migration		
Module-III: Social Categories and their Spatial Distribution	15	(1)
3.1 Race		
3.2 Religions		
3.3 Gender		
Module-IV: Geographies of Welfare, Well Being and Social Problems in India	15	(1)
4.1 Concept of Social Welfare and Well being		
4.2 Healthcare and Housing Facilities		
4.3 Slums		
4.4 Communal Conflicts and Crime		

References

1. Ahmed A., 1999: Social Geography, Rawat Publications.

2. Casino V. J. D., Jr., 2009) Social Geography: A Critical Introduction, Wiley Blackwell.
3. Cater J. and Jones T., 2000: Social Geography: An Introduction to Contemporary Issues, Hodder Arnold.
4. Holt L., 2011: Geographies of Children, Youth and Families: An International Perspective, Taylor & Francis.
5. Panelli R., 2004: Social Geographies: From Difference to Action, Sage.
6. Rachel P., Burke M., Fuller D., Gough J., Macfarlane R. and Mowl G., 2001: Introducing Social Geographies, Oxford University Press.
7. Smith D. M., 1977: Human geography: A Welfare Approach, Edward Arnold, London.
8. Smith D. M., 1994: Geography and Social Justice, Blackwell, Oxford.
9. Smith S. J., Pain R., Marston S. A., Jones J. P., 2009: The SAGE Handbook of Social Geographies, Sage Publications.
10. Sopher, David (1980): An Exploration of India, Cornell University Press, Ithasa.
11. Valentine G., 2001: Social Geographies: Space and Society, Prentice Hall

SHIVAJI UNIVERSITY, KOLHAPUR.



Accredited By NAAC with 'A' Grade

**Revised Syllabus For
B. A. Part-III & B. A. B. Ed.
Political Geography
Or
Geography of Health and Wellbeing**

CBCS PATTERN

(Subject to the modifications to be made from time to time)
Syllabus to be implemented from June 2020 onwards

**Accredited By NAAC
With 'A' Grade
New/Revised Syllabus For
B. A. Part – III and B. A. B. Ed.**

DSE (Discipline Specific Elective) – E233 or Paper No. XII
Geography (Political Geography), Sem.-VI
Syllabus to be implemented from June 2020 onwards

A] Ordinance and Regulations:-

(As applicable to degree/program)

B] Shivaji University, Kolhapur

New/Revised Syllabus For **Bachelor of -Arts.**

1. TITLE: Subject – POLITICAL GEOGRAPHY

Optional/Compulsory/Additional/IDS under the Faculty of Science

2. YEAR OF IMPLEMENTATION: - New/Revised Syllabi will be implemented from June 2020 onwards.

3. PREAMBLE:-

Political Geography is the most important branch of Human Geography. But after 1960 this branch of Geography becomes popular due to its own significance in the World. Therefore, it has been introduced to B. A. Part-III. In this course the fundamental as well basic concepts and knowledge of Political Geography have been included. The present syllabus of this course includes nature, scope,

4. GENERAL OBJECTIVES OF THE COURSE/ PAPER/:

(As applicable to the Degree /Subject- Paper concerned)

- i) To study the Political geography as a fundamental branch of Human Geography.
- ii) To familiarize the students with the basics and fundamental concepts and theories of Political Geography.
- iii) To aware the students about resource conflicts and politics of displacement.

4.1 COURSE OUTCOME

- i) The students are fully aware about the Political geography as a fundamental branch of Human Geography.
- ii) The students are familiarized with the basics and fundamental concepts and theories of Political Geography.
- iii) The students are aware about resource conflicts and politics of displacement.

5. DURATION

- The course shall be a full time course.
- The duration of course shall be of Three years, as applicable to the respective degree.

6. PATTERN:-

Pattern of Examination will be Semester.

7. FEE STRUCTURE :-

As per Government /University rules.

[Note: - In case of any New degree/Program started at university/college, the respective colleges/ Dept. should submit a separate proposal of fee structure to BOS office. (i. e. Tution Fee & Laboratory Fee, if any.)

8. ELIGIBILITY FOR ADMISSION:-

As per eligibility criteria prescribed for respective degree program and the merit in the qualifying examination (i.e. Entrance Examination), if any.

9. MEDIUM OF INSTRUCTION:

The medium of instruction shall be in English or Marathi. (as applicable to the course / programme concerned.)

10. STRUCTURE OF COURSE = 50 marks

(Note – The structure & title of papers of the degree as a whole should be submitted at the time of submission/revision of first year syllabus.)

SEMESTER SIXTH

Paper No.

DSE-E233 or Paper No. XII, Political Geography

Title Marks

50

11. SCHEME OF TEACHING:

The scheme of teaching and examination should be given as applicable to the course / paper concerned.

Sr. No.	Subject/Papers	Teaching Scheme Per Week				Examination Scheme Sr. (Marks)			
		L	T	P	Total	Theory	Practical	Term Work	Total
1	Political Geography	04	04	-	04	40	-	10	50

12. SCHEME OF EXAMINATION:

- The examination shall be conducted at the end of each term for semester pattern.
- The Theory paper shall carry 40 marks (as applicable to the course).
- The term work shall carry 10 marks.
- The evaluation of the performance of the students in theory papers shall be on the basis of Semester Examination of 50 marks.
- Question Paper will be set in the view of the /in accordance with the entire Syllabus and preferably covering each unit of syllabi.

13. STANDARD OF PASSING:

As per Prescribed rules and regulation for each degree / programme.

14. NATURE OF QUESTION PAPER AND SCHEME OF MARKING:

(Unit wise weightage of marks should also be mentioned)

Semester V	Marks
Question: 1) Objective Type Question (Multiple Choice)	05
Question: 2) Short Notes (Any three out of five)	15
Question: 3) Detailed Answer Type Question (Any two out of three)	20

15. EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS- (FOR REVISED SYLLABUS)

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1	Political Geography	XII	Political Geography	E 233 or XII

16. SPECIAL INSTRUCTIONS, IF ANY – Nil

**NEW/REVISED SYLLABUS FOR
B. A. Part-III and B. A. B. Ed. Geography
(Syllabus to be implemented from June 2020 onwards)
Semester - VI**

(i) DSE – E 233 or XII

(ii) Title of Paper:- POLITICAL GEOGRAPHY

(iii) Specific Objectives:- -----

(iv) A brief note:- (On expected level of study from examination and assessment point of view):- -----

Module	Teaching Hours	Credits
Module I: Introduction to Political Geography	15	01
1.1 Definition of Political Geography		
1.2 Nature and Scope of Political Geography		
1.3 Approaches of Political Geography		
1.4 Significance of Political Geography		
Module II: Concepts in Political Geography	15	01
2.1 State		
2.2 Nation		
2.3 Boundary		
2.4 Frontier		
Module III: Theories in Political Geography	15	01
3.1 Hartland Theory - Halford J. Mackinder		
3.2 Rimland Theory – Nicholas J. Spykeman		
Module IV: Resource Disputes and Conflicts	15	01
4.1 Krishna Water Dispute		
4.2 Ganga Water Dispute		
4.3 Sardar Sarovar Project: Issues of Relief, Compensation and Rehabilitation		
4.4 Chandoli Dam Project: Issues of Relief, Compensation and Rehabilitation		

Reading List

1. Adhikari, S. (1997) : Political Geography, Rawat Publications, Jaipur.
2. Dikshit, R. D. (1985) : Political Geography, A Contemporary Perspective, McGraw Hill, New Delhi
3. Dwivedi, R. L. (1996): Political Geography, ChaitanyaPrakashan, Allahabad.

4. Muir, Richard (1995): Modern Political Geography, Macmillan, London.
5. Pounds, N. J. G. (1972): Political Geography 2nd Ed. McGraw Hill, N. Y.
6. Sharma, T. C. : Political Geography.
7. Agnew J., 2002: Making Political Geography, Arnold.
8. Agnew J., Mitchell K. and Toal G., 2003: A Companion to Political Geography, Blackwell.
9. Cox K. R., Low M. and Robinson J., 2008: The Sage Handbook of Political Geography, Sage Publications.
10. Cox K., 2002: Political Geography: Territory, State and Society, Wiley-Blackwell
11. Gallaher C., et al, 2009: Key Concepts in Political Geography, Sage Publications.
12. Glassner M., 1993: Political Geography, Wiley.
13. Jones M., 2004: An Introduction to Political Geography: Space, Place and Politics, Routledge.
14. Mathur H M and M M Cernea (eds.) Development, Displacement and Resettlement – Focus on Asian Experience, Vikas, Delhi
15. Painter J. and Jeffrey A., 2009: Political Geography, Sage Publications.
16. Taylor P. and Flint C., 2000: Political Geography, Pearson Education.
17. Verma M K (2004): Development, Displacement and Resettlement, Rawat Publications, Delhi
18. Hodder Dick, Sarah J Llyod and Keith S McLachlan (1998), Land Locked States of Africa and Asia (vo.2), Frank Cass

Accredited By NAAC
With 'A' Grade
New/Revised Syllabus For
B. A. Part – III and B. A. B. Ed.
DSE-E233 (Discipline Specific Elective) Paper No.XII
Geography (Geography of Health and Wellbeing), Semester-VI
Syllabus to be implemented from June 2020 onwards

A] Ordinance and Regulations:-

(As applicable to degree/program)

B] Shivaji University, Kolhapur

New/Revised Syllabus for Bachelor of Arts and B. A. B. Ed.

1. TITLE: Geography of Health and Wellbeing
Optional/Compulsory/Additional/DSE

2. FACULTY: Faculty of Science.

3. YEAR OF IMPLEMENTATION:

New/Revised Syllabi will be implemented from June 2020 onwards.

4. PREAMBLE:

Geography of Health and Wellbeing considers the significance for physical and mental health of interactions between people and their environment. This branch of Geography becomes popular due to its significance. Therefore, it has been introduced to B. A. Part-III. In this course the fundamental concepts and knowledge of Geography of Health and wellbeing have been included. The present syllabus of this course includes perspectives of health, pressure on environmental quality and health, exposure and health risks, health and disease patterns.

5. GENERAL OBJECTIVES OF THE COURSE/PAPER:

(As applicable to the Degree/Subject-Paper concerned)

- i) To know Geography of Health and Wellbeing.
- ii) To study the fundamental concepts health and environmental trends.
- iii) To study the pressure on environmental quality and health.
- iv) To study the exposure and health risks.
- iv) To understand the health and various disease patterns in environmental context with special reference to India.

6. COURSE OUT COME:

After the completion of course, the students will have ability to:

- 1. Understand various geographical perspectives related to human health.

2. Create awareness of human health and environmental trends.
3. The students are familiar with geographical background of diseases and their regional pattern.
4. Detail understanding of pressure on environmental quality and human health.
5. Create awareness among the students of malnutrition and hygiene.
6. The students are familiar with the process of health care planning in India.
7. The students are aware about impact of climate change on human health.

6. DURATION

- The course shall be a full time course.
- The duration of course shall be of Three years, as applicable to the respective degree.

8. PATTERN:

Pattern of Examination will be Semester.

8.FEE STRUCTURE:

As per Government/University rules.

[Note: In case of any New degree/Program started at university/college, the respective colleges/Dept. should submit a separate proposal of fee structure to BOS office.(i.e. Tution Fee & Laboratory Fee, if any.)]

9. ELIGIBILITY FOR ADMISSION:-

As per eligibility criteria prescribed for respective degree programme and the merit in the qualifying examination (i.e. Entrance Examination), if any.

10.MEDIUM OF INSTRUCTION:

The medium of instruction shall be in English or Marathi. (as applicable to the course/programme concerned.)

11.STRUCTURE OF COURSE = 50 marks

(Note–The structure & title of papers of the degree as a whole should be submitted at The time of submission/revision of first year syllabus.)

SEMESTER SIXTH Paper No.

Course E 233/Paper- XII, Geography of Health and Wellbeing

TitleMarks
50

12. SCHEME OF TEACHING AND EXAMINATION:

The scheme of teaching and examination should be given as applicable to the course /paper concerned.

Sr. No.	Subject/Papers	Teaching Scheme Per Week				Examination Scheme (Marks)			
		L	T	P	Total	Theory	Practical	Term Work	Total
1	Geography of Health and Wellbeing	04	04	-	04	40	-	10	40

13. Scheme of Examination:

- The examination shall be conducted at the end of each academic year.
- The paper shall carry 40 marks.
- The term work shall carry 10 marks.
- The evaluation of the performance of the students in theory papers shall be on the basis of Semester Examination of 50 marks.
- Question Paper will be set in the view of the / in accordance with the entire syllabus and preferably covering each unit of syllabi.

14. Standard of Passing:

(As prescribed under rules & regulation for each degree / program)

15. Nature of Question Paper and Scheme of Marking:

(Unit wise weightage of marks should also be mentioned)

Semester V	Marks
Question: 1) Objective Type Question (Multiple Choice)	05
Question: 2) Short Notes (Any three out of five)	15
Question: 3) Detailed Answer Type Question (Any two out of three)	20

16. EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS (For revised Syllabus)

Sr. No.	Title of Old Paper	Title of New Paper
1	Political Geography (Paper -I)	Geography of Health and Wellbeing E233 (Paper No. XII)

17. Special Instructions, If any.

NEW/REVISED SYLLABUS FOR
B. A. Part-III and B. A. B. Ed. Geography
(Syllabus to be implemented from June 2020 onwards)
Semester-VI

(i) Course/Paper No. E233 or XII

(ii) Title of Paper:- GEOGRAPHY OF HEALTH AND WELLBEING

(iii) Specific Objectives:-----

(iv) A brief note:-

(On expected level of study from examination and assessment point of view):- -----

Module	Teaching Hours	Credits
Module I: Perspectives on Health	15	01
1.1 Definition, Nature and Scope		
1.2 Trends and Applications		
1.3 Linkages with Environment and Development		
1.4 Health and Environmental Trends: Population Dynamics, Urbanization, Poverty and Inequality		
Module II: Pressure on Environmental Quality and Health	15	01
2.1 Human Activities and Environmental Pressure		
2.2 Land use and Agricultural Development		
2.3 Industrialization		
2.4 Transportation		
Module III: Exposure and Health Risks	15	01
3.1 Air and Water Pollution		
3.2 Household Wastes		
3.3 Housing		
3.4 Workplace		
Module IV: Health and Disease Patterns	15	01
(In Environmental Context with special reference to India)		
4.1 Communicable diseases and their regional pattern – AIDS and Dengue		
4.2 Lifestyle related diseases and their regional pattern – Cancer and Diabetes		
4.3 Climate change and human health		
4.4 Food production and nutrition		

REFERENCES

1. Akhtar Rais (Ed.), 1990: Environment and Health Themes in Medical Geography, Ashish Publishing House, New Delhi.
2. Avon Joan L. and Jonathan A. Patzed., 2001: Ecosystem Changes and Public Health, Baltimore, John Hopling Unit Press (ed).
3. Bradley, D., 1977: Water, Wastes and Health in Hot Climates, John Wiley Chichester.
4. Brown T., S. McLafferty, and G. Moon. 2009. *A companion to health and medical geography*. Chichester, UK: Wiley-Blackwell. DOI: [10.1002/9781444314762](https://doi.org/10.1002/9781444314762)
5. Christaller George and Hristopoles Dionissios, 1998: Spatio Temporal Environment Health Modelling, Boston Kluwer Academic Press.
6. Cliff, A.D. and Peter, H., 1988: Atlas of Disease Distributions, Blackwell Publishers, Oxford.
7. [Emch](#), M., [Root](#), E.D., [Carrel](#), M., 2017, Health and Medical Geography, Fourth Edition Guilford Publications
8. Gatrell, A., and Loytonen, 1998: GIS and Health, Taylor and Francis Ltd, London.
9. Gatrell A., and S. Elliott. 2009. *Geographies of health*. Chichester, UK: Wiley-Blackwell.
10. Gesler, W., and W. Kearns. 2002. *Culture place and health*. Critical Geographies. London: Routledge.
11. Hardham T. and Tannav M., (eds): Urban Health in Developing Countries; Progress, Projects, Earthgoan, London.
12. Jones, K., and G. Moon. 1987. *Health disease and society*. London: Routledge.
13. Meade, M., and R. Earickson. 2000. *Medical geography*. New York: Guildford.
14. Murray, C. and A. Lopez, 1996: The Global Burden of Disease, Harvard University Press.
15. Moeller Dadewed., 1993: Environmental Health, Cambridge, Harvard University Press.
16. Phillips, D. and Verhasselt, Y., 1994: Health and Development, Routledge, London.
17. Shelar, S.K., 2012: Introduction to Medical Geography, Chandralok Pub., Kanpur.
18. Tromp, S., 1980: Biometeorology: The Impact of Weather and Climate on Humans and their Environment, Heydon and Son.

19. मस्कीडी., भैसेएस., २०१४, आरोग्यभूगोल, अथर्वप्रकाशन, पुणे

Websites:

e-PGPathshala: <https://epgp.inflibnet.ac.in/>

MOOCS - NPTEL: <https://nptel.ac.in/>

MOOCS - SWAYAM: <https://swayam.gov.in/>

National Digital Library of India: <https://ndl.iitkgp.ac.in/>

Shivaji University Library (E-Resources): <http://www.unishivaji.ac.in/library/E-Resources>

SHIVAJI UNIVERSITY, KOLHAPUR.



Accredited By NAAC with 'A' Grade

Revised Syllabus For

B. A. Part-III & B. A. B. Ed.

Geography (Practical)

(Fundamentals of Map Making and Map Interpretation)

CBCS PATTERN

(Subject to the modifications to be made from time to time)

Syllabus to be implemented from June 2020 onwards

A) Ordinance and Regulations
(As applicable to degree)
B) Shivaji University, Kolhapur.
Revised Syllabus for
Bachelor of Arts and B. A. B. Ed.
Sem -VI

DSE-E234 (Paper XIII or Practical Paper -I)

1. Title: Fundamentals of Map Making and Map Interpretation

Optional Subject under the Faculty of Science

2. Year of Implementation: Revised Syllabi will be implemented from June 2020 onwards.

3. Preamble:

Practical Work is the most important part of Geography. Map is an indispensable tool in Geographical Studies & Research activities. The present syllabus of this paper includes study of maps and their types, Map Projections, S.O.I. Topomaps, I.M.D. Weather Maps, and Cartographic Techniques. In the process of development of science and technology, the changing nature of subject of geography will make aware to the student about the map work and map interpretation. This will further help to improve the use of maps, cartographic techniques and methods in teaching-learning and research work.

4. General objectives of the Paper:

(As applicable to the – paper concerned)

- 1) To introduce the students with the importance of map making and map Interpretation.
- 2) To make the students to understand map, concept of scale and concept of projection.
- 3) To provide training in analysis of landforms.
- 4) To give basic information to the students about S.O.I. topomaps and I.M.D. weather maps.
- 5) To develop the skill of map Interpretation among the students.
- 6) To familiarize the students with the different cartographic techniques and methods used for representation of demographic and physio- socio-economic database.

5. COURSE OUTCOMES

1. In depth understanding the map, concept of scale and projection.
2. Detailed knowledge about the analysis of landforms and its identification.
3. The students are deeply aware about basic information to the students about S.O.I. topomaps and I.M.D. weather maps and obtained the skills about map interpretation.

4. The students are deeply familiar with different cartographic techniques and methods used for representation of demographic and physio- socio-economic database

6. Duration:

- The course shall be a full time course.
- The duration of course shall be of three years, as applicable to the respective degree.

7. Pattern:

Pattern of Examination will be **ANNUAL**.

8. Fee Structure:

As per Government / University rules.

9. Eligibility for Admission:

As per eligibility criteria prescribed for respective degree program and the merit in the qualifying examination, if any.

10. Medium of Instruction:

The medium of instruction shall be in English or Marathi. (As applicable to the course / programme concerned)

11. Structure of Course: Theory & Practical's

(Note – The structure & title of papers of the degree as a whole should be submitted at the time of submission / revision of first year syllabus.)

Third Year (Semester VI) Paper No. XIII

Sr. No.	Subjects/Papers	Theory	Practical	Total marks
1	Fundamentals of Map Making and Map Interpretation	-----	100	100

12. Scheme of Teaching and Examination:

(The Scheme of teaching and examination should be given as applicable to the course / paper concerned)

B. A. part –III

Sr. No.	Subjects/Papers	Theory				Examination scheme (Marks)		
		L	T	P	Total	Practical	Term Work	Total (Annual)
1	Fundamentals of Map Making and Map Interpretation	---	---	10	10	100	---	100

13. Scheme of Examination:

- The examination shall be conducted at the end of each academic year.
- The Practical paper shall carry 100 marks.
- The evaluation of the performance of the student in practical papers shall be on the basis of annual practical examination of 100 marks.
- Question Paper will be set in the view of the / in accordance with the entire syllabus and preferably covering each Module of syllabi.

14. Standard of Passing:

(As prescribed under rules & regulation for each degree / program)

15. Nature of Question Paper and Scheme of Marking:

(Module wise weightage of marks should also be mentioned)

16. EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS

(For revised Syllabus)

Sr. No.	Title of Old Paper	Title of New Paper
1	Map Work & Map Reading Paper XIII (Practical Paper -I)	Fundamentals of Map Making and Map Interpretation E 234 or Paper XIII (Practical Paper - I)

17. Special Instructions, If any.

Revised Syllabus for B. A. – III and B. A. B. Ed.

(Introduced from June 2020 Onwards)

Revised Syllabus for

B. A. Part III and B. A. B. Ed. Geography

DSE-E234 or Paper No. XIII (Practical Paper -I)

Sem-V

Title of Paper: Fundamentals of Map Making and Map Interpretation

Module – I: Introduction to Map and Scales:

Periods 50

Marks 15

1.1 Map

1.1.1 Map: Definition and Elements

1.1.2 Classification of Maps: Based on Scale and Purpose

1.2 Scale

1.2.1 Meaning and Definition,

1.2.2 Methods of Representation of scale - Verbal, Numerical and Graphical.

1.2.3 Scale Conversion

1.2.4 Construction of Graphical Scale –

i) Simple (Plane Scale)

ii) Time and Distance Scale

iii) Diagonal Scale

Module II: Map Projection

Periods 50

Marks 15

2.1 Definition, Classification of Projections:

a) Based on the methods of Construction: Perspective and Non-perspective

b) Based on Developable Surface used: Conical, Cylindrical, Zenithal,
Conventional.

c) Based on Position of Tangent Surfaces: Polar, Equatorial (normal), Oblique.

d) Based on Position of view point or light: Gnomonic, Stereographic,
Orthographic

e) Based on Preserved qualities: i) Equal area projection (Homolographic)

ii) Orthographic Projection

iii) Azimuthal Projection (True Bearing
Projection)

2.2 Graphical Construction of the following Projections with Properties and Use:

- i) Zenithal Polar Gnomonic Projection
- ii) Zenithal Polar Equal Area Projection
- iii) Simple Conical Projection with one standard Parallel
- iv) Cylindrical Equal Area Projection
- v) Mercator's Projection and Reference to Universal Transverse Mercator (UTM) Projection

Module – III : Identification, Mapping of Slope, Relief Features and Profiles

Periods 50

Marks 15

3.1 Slope and Gradient

- 3.1.1 Types of Slope: Gentle, Steep, Even, Uneven, Convex, Concave, Terraced.
- 3.1.2 Expression of Slopes: a) Gradient b) Degree c) Per Cent d) Mills
- 3.1.2 Representation of Relief by Contours: Hill, Mountain, Ridge, Cliff, Saddle, Plateau, Knoll, Spur, Col or Pass, Volcanic Col or Crater, Gorge, 'V' Shaped Valley, Waterfall, 'U' Shaped Valley, Cirque, Hanging Valley, Ria Coast, Fiord Coast, Sea cliff.

3.2 Profiles

- 3.5.1 Superimposed Profile
- 3.5.2 Composite Profile
- 3.5.3 Projected Profile
- 3.5.4 Longitudinal Profile

Module – IV : Topographical Maps

Periods 50

Marks 15

- 4.1 Indexing of S.O.I. Topographical Map
- 4.2 Signs, Symbols and Colors used in SOI Toposheet
- 4.3 Interpretation of S.O.I.'s Topographical Maps
 - a) Marginal Information
 - b) Physical environment: Relief, Drainage and Vegetation
 - c) Cultural environment: Settlements, Transportation and Communication, Irrigation.
 - d) Land Use

Module V: Weather Instruments and IMD Maps**Periods 70****Marks 20**

5.1 Study of weather Instruments with reference to Principle, Mechanism, and Function

- a) Thermograph
- b) Barograph
- c) Dry and Wet Bulb Thermometer
- d) Cup Anemometer
- e) Rain Gauge

5.2 Isobaric Patterns: Cyclone, Anticyclone, Col, Ridge, Secondary Depression

5.3 Signs and Symbols used in Indian Daily Weather Maps

5.4 Interpretation of Indian Daily Weather Maps

Marginal Information, Pressure, Winds, Clouds, Rainfall, Other Conditions, Sea Condition, Temperature departure from normal

Module VI : Representation Techniques of Statistical Data**Periods 30****Marks 10**

- a) Divided Rectangle
- b) Proportional Circle
- c) Proportional Square
- d) Choropleth Map
- e) Dot Map
- f) Isopleths

Module VII: Journal and Viva Voce**Marks 10****Note :**

1. Use of stencils, log tables, computer and calculator is allowed.
2. Journal should be completed and duly certified by practical in-charge and Head of the Department.

Reference:

1. Bygoot, J: An Introduction to Mapwork and Practical Geography, University Tutorial, London 1964.
2. London 1964.

3. Khan MD. Zulfequar Ahmad : Text Book of Practical Geography, Concept Publishing Company, New Delhi, 1998
4. Mishra, R.P. and Ramesh A. : Fundamentals of Cartography, Concept Publishing Company, New Delhi, 2000
5. Monkhouse F.J. and Wilkison, H.R.: Maps and Diagrams, Mathuen. London, 1971.
6. Negi. , Dr. Balbir Singh : Practical Geography, Kedar Nath Ram Nath, Meerut, Delhi.
7. Raisz, E.: Principals of Cartography, McGraw Hill Book Com., Inc, New York, 1962.
8. Robinson, A.H. and Sale, S.D.: Elements of Cartography, John Witey and Sons, Inc, New York, 1969.
9. Saha, Pijushkanti and Basu Partha : Advanced Practical Geography – A Laboratory Manual Books and Allied (P) Ltd, Kolkata. 2010.
10. Sarkar, Ashis : Practical Geography: A systematic Approach, Orient Longman limited, Calcutta, 1997.
11. Singh, Gopal : Map work and Practical Geography Vikas Publishing House Pvt. Ltd. New Delhi, 1996.
12. Singh, R and Kanaujia, L.R.S.: Map Work and Practical Geography, Central Book Depot, Allahabad.
13. Singh, R. L. and Rana P.B. : Elements of Practical Geography, Kalyani Publishers, New Delhi – Ludhiana, 1998.
14. Aher A. B., Chodhari A. P. & Bharambe S. N. Techniques of Spatial Analysis Prashant Publication Jalgaon 2015
15. Maurice Yeats, An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York, 1974.
16. P. Saha and P. Basu (2006): Advanced Practical Geography, Books and Allied Publication, Kolkata, India.
17. Khullar, Essentials of Practical Geography, New Academic Publishing Co, India.
18. Singh L R (2011): Fundamentals of Practical Geography
19. Robinson Rep. (2010): Elements of Cartography 6/e
20. Khan Za (1998): Text Book of Practical Geography
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SHIVAJI UNIVERSITY, KOLHAPUR.



Accredited By NAAC with 'A' Grade

Revised Syllabus For

**B. A. Part-III & B. A. B. Ed.
Sem VI**

Geography (Practical)
(Advanced Tools, Techniques & Field Work in Geography)

CBCS PATTERN

(Subject to the modifications to be made from time to time)
Syllabus to be implemented from June 2020 onwards

**A) Ordinance and Regulations
(As applicable to degree)
B) Shivaji University, Kolhapur.
Revised Syllabus for
Bachelor of Arts and B. A. B. Ed.
Sem-VI
DSE-E235 or Paper XIV (Practical Paper -II)
Syllabus to be implemented from June 2020 onwards**

1. Title: Advanced Tools, Techniques & Field Work in Geography

Optional Subject under the Faculty of Science

2. Year of Implementation: Revised Syllabi will be implemented from June 2020 onwards.

3. Preamble:

Modern science & technology have gained momentum. The last couple of Decades have witnessed a sudden expansion of knowledge. In the process of development of science and technology, the changing nature of subject of Geography will make aware to the students about the advanced techniques such as Remote Sensing, GIS, and GPS. The application of computers has revolutionized the use of methods & techniques. The present syllabus of this paper includes study of Aerial Photographs, Remote Sensing, GIS, Application of Computer and use of field work in Geography. This will further help to improve the use of advanced techniques and methods in teaching-learning and research work.

4. General objectives of the Paper:

- 1) To introduce the students with the importance of field work and advanced Techniques in Geography.
- 2) To provide training in application of modern tool and techniques in Geography.
- 3) To enable the students to understand the use of computer for analysis of Geographical data.
- 4) To enhance the skill of the students in instrumental survey.
- 5) To give basic information to the students about Aerial Photographs, Remote Sensing, GIS and GPS.

6. COURSE OUTCOMES

5. In depth understanding the importance of field work and advanced Techniques in Geography.
6. The students are trained to implement modern tool and techniques in Geography.
7. Detailed knowledge about the use of computer for analysis of Geographical data.
8. The students are deeply aware about the basics and trained in instrumental survey.

9. The students are deeply familiar with computer, GIS, GPS and Remote Sensing.

6. Duration:

- The course shall be a full time course.
- The duration of course shall be of three years, as applicable to the respective degree.

7. Pattern:

Pattern of Examination will be ANNUAL.

8. Fee Structure:

As per Government / University rules.

9. Eligibility for Admission:

As per eligibility criteria prescribed for respective degree program and the merit in the qualifying examination, if any.

10. Medium of Instruction:

The medium of instruction shall be in English or Marathi. (As applicable to the course / programme concerned)

11. Structure of Course: Theory & Practical's

(Note – The structure & title of papers of the degree as a whole should be submitted at the time of submission / revision of first year syllabus.)

Third Year (Semester VI) Paper No. XIV

Sr. No.	Subjects/Papers	Theory	Practical	Total marks
1	Advanced Tools, Techniques & Field Work in Geography	-----	100	100

12. Scheme of Teaching and Examination:

(The Scheme of teaching and examination should be given as applicable to the course / paper concerned)

B. A. part –III

Sr. No.	Subjects/Papers	Theory				Examination scheme (Marks)		
		L	T	P	Total	Practical	Term Work	Total (Annual)
1	Advanced Tools, Techniques & Field Work in Geography	---	---	10	10	100	---	100

13. Scheme of Examination:

- The examination shall be conducted at the end of each academic year.
- The Practical paper shall carry 100 marks.

- The evaluation of the performance of the student in practical papers shall be on the basis of annual practical examination of 100 marks.
- Question Paper will be set in the view of the / in accordance with the entire syllabus and preferably covering each Module of syllabi.

14. Standard of Passing:

(As prescribed under rules & regulation for each degree / program)

15. Nature of Question Paper and Scheme of Marking:

(Module wise weightage of marks should also be mentioned)

16. EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS

(For revised Syllabus)

Sr. No.	Title of Old Paper	Title of New Paper
1	Advanced Tools, Techniques & Field Work	Advanced Tools, Techniques & Field Work in Geography (DSE-E235 or Paper No. XIV)

17. Special Instructions, If any.

Revised Syllabus for B. A. – III and B. A. B. Ed.

(Introduced from June 2020 Onwards)

Revised Syllabus for

B. A. (Part III) Geography

DSE-E235 or Paper No. XIV (Practical Paper -II)

(ii) Title of Paper - Advanced Tools, Techniques & Field Work in Geography(100 Marks)

Module-I: Introduction to Computer

Lectures- 50

Marks-10

1.1: Introduction to Computer

1.2: Application of computer in geography

1.2.1: Construction of Line Graphs, Bar Graphs

1.2.2: Construction of Pie Diagram and Scatter Diagram

1.3: Application of Excel for Data Analysis

Module-II: Remote Sensing

Lectures- 50

Marks-15

2.1 Definition of Remote Sensing

2.2 Fundamentals of Remote Sensing: EMR, Sensors and Platforms

2.3 Application of Remote Sensing in Geography

2.4 Aerial photographs and Satellite imagery: Definition, types and difference between them

2.5 Determination of Photo Scale

2.6 Elements of image interpretation

2.7 Identification of Physical and cultural features from Aerial Photographs or Satellite Imagery

Module-III: GIS and GNSS

Lectures- 50

Marks-15

3.1 Geographical Information System (GIS)

3.1.1 Definition and components

3.1.2 GIS Data Structure: Types (spatial and non-spatial), Raster and Vector data

3.1.3 Georeferencing, Digitization, Map Layout Preparation

3.1.4 Application of GIS in Geography: Land use or Land Cover, Urban Sprawl Analysis, Forests Monitoring

3.2 Global Navigation Satellite System

3.2.1 Definition and components

3.2.2: GPS and its applications in Geography

3.2.3 Field work in GPS: Determining latitude, longitude and altitude

3.3: Exercise with Google earth Program.

Module-IV: Statistical methods and techniques

Lectures- 60

Marks-10

4.1 Measures of Central Tendency: Mean, Median and Mode

4.2 Dispersion: Mean Deviation and Standard Deviation

4.3 Association and Correlation: Karl Pearson's Method (Product Moment)

4.4 Analysis of Time Series: Semi-average Method

Module-V: Surveying

Lectures- 60

Marks-15

5.1 Introduction to Survey: Meaning and types

5.2 Preparation of plans of the given area with the following survey method

(Any one methods among them)

A- Plane Table survey (Radial, Intersection, and Traverse method)

B- Dumpy Level survey

C- Theodolite survey

D- Total Station

E- Abony Level Survey

5.3 Preparation of plans Prismatic compass survey (Radical, Intersection and Traverse method)

5.3.1 Types and conversion of bearings.

5.3.2 Correction of bearing.

Module-VI: Project work based on field work any one of following:

Marks-15

Resource survey, Population survey, Agricultural survey, Settlement Survey,

Environmental issues, Industrial visit, Health survey, Natural Hazard or Disaster

1. Project Report must be content of following points:

- Introduction – Aims – Objectives - Review of the literature - Data collection –
Methodology - Data Analysis – Interpretation - Findings – Suggestions - Bibliography
2. The duration of the field work should not exceed than 20 days.
 4. The word count of the report should be about 8000 to 12,000 excluding figures, tables, photographs, maps, references and appendices.
 5. One copy per student of the report as per research standard should be submitted at the time of examination.

Module- VII: Study Tour

Marks-10

Maximum 15 days of Study Tour and preparation of Tour Report.

The Study Tour Report must be content of following points:

Introduction – Necessity – Importance - Route map – Objectives – Methodology -
Geographical Profile (Natural, Socio-economic and Cultural) - Geographical importance of
visited tourist places – Conclusion – References

Journal and Viva Voce

Marks 10

Note :

1. Use of stencils, log tables, computer and calculator is allowed.
2. Journal should be completed and duly certified by practical in-charge and Head of the Department.

Reference:

21. Lo C. P., Albert K. W. Yeung, (2011): Concepts and Techniques of Geographic Information Systems, PHI Learning Private Limited, New Delhi-110001.
22. Bygoot, J: An Introduction to Mapwork and Practical Geography, University Tutorial, London 1964.
23. Khan MD. Zulfequar Ahmad : Text Book of Practical Geography, Concept Publishing Company, New Delhi, 1998
24. Mishra, R.P. and Ramesh A. : Fundamentals of Cartography, Concept Publishing Company, New Delhi, 2000
25. Monkhouse F.J. and Wilkison, H.R.: Maps and Diagrams, Mathuen. London, 1971.
26. Negi. , Dr. Balbir Singh : Practical Geography, Kedar Nath Ram Nath, Meerut, Delhi.
27. Raisz, E.: Principals of Cartography, McGraw Hill Book Com., Inc, New York, 1962.
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30. Saha, Pijushkanti and Basu Partha : Advanced Practical Geography – A Laboratory Manual Books and Allied (P) Ltd, Kolkata. 2010.
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 35. Aher A. B., Chodhari A. P. & Bharambe S. N. Techniques of Spatial Analysis Prashant Publication Jalgaon 2015
 36. Maurice Yeats, An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York, 1974.
 37. P. Saha and P. Basu (2006): Advanced Practical Geography, Books and Allied Publication, Kolkata, India.
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 40. Robinson Rep. (2010): Elements of Cartography 6/e
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SHIVAJI UNIVERSITY, KOLHAPUR



Revised syllabus for

Bachelor of Arts (Part – III)

SEMESTER V & VI

PHYSICAL EDUCATION

Syllabus to be implemented from June 2020 onwards

Structure III : B. A. Programme Specific (PHYSICAL EDUCATION)
Sem V – Duration : 06 Months

Teaching Scheme					Evaluation Scheme					
Sr.No.	Course	Course Name	No. Of Lect.	Hours	Credits	Theory	Practical	Total	Min. Marks for Passing (T+P)	Exam Duration (Hrs.)
1	DSE – E41	HEALTH EDUCATION	2+2	2+2*	4	25	25	50	9+9 = 18**	1
2	DSE – E42	RECREATION IN PHYSICAL EDUCATION	2+2	2+2*	4	25	25	50	9+9 = 18	1
3	DSE – E43	YOGA	2+2	2+2 *	4	25	25	50	9+9 = 18	1
4	DSE – E44	ANATOMY AND PHYSIOLOGY	2+2	2+2*	4	25	25	50	9+9 = 18	1
5	DSE – E45	DIETETICS AND NUTRITION	2+2	2+2*	4	25	25	50	9+9 = 18	1
Total			20	20	20	125	125	250		

* 02 Hours for Theory and 02 Hours for Practical per paper per week
 There should be 20 students in single batch while conducting the Practical's.
 ** There are two separate heads for passing i.e. Theory and Practical

Structure III : B. A. Programme Specific (PHYSICAL EDUCATION)
Sem VI – Duration : 06 Months

Teaching Scheme					Evaluation Scheme					
Sr.No.	Course	Course Name	No. Of Lect.	Hours	Credits	Theory	Practical	Total	Min. Marks for Passing (T+P)	Exam Duration (Hrs.)
1	DSE – E166	HEALTH EDUCATION PROGRAM	2+2	2+2*	4	25	25	50	9+9 = 18**	1
2	DSE – E167	RESEARCH IN PHYSICAL EDUCATION	2+2	2+2*	4	25	25	50	9+9 = 18	1
3	DSE – E168	YOGA AND HEALTH	2+2	2+2 *	4	25	25	50	9+9 = 18	1
4	DSE – E169	ANATOMY AND PHYSIOLOGY OF EXERCISE	2+2	2+2*	4	25	25	50	9+9 = 18	1
5	DSE – E170	DIETETICS AND HYGIENE	2+2	2+2*	4	25	25	50	9+9 = 18	1
Total			20	20	20	125	125	250		

* 02 Hours for Theory and 02 Hours for Practical per paper per week
 There should be 20 students in single batch while conducting the Practical's.
 ** There are two separate heads for passing i.e. Theory and Practical

DSE : Discipline Specific Elective – Candidate can opt any one course (subject) from DSC [course (subject) which was opted in Part II (Sem. III & IV)]

Note: DSE Paper No. VII to XVI are elective papers whereas, DSC Paper No. I to VI are core courses. Hence, DSE Paper VII to XVI should be considered in continuation of DSC I to VI

SHIVAJI UNIVERSITY, KOLHAPUR
PROPOSED REVISED SYLLABUS (SEMESTER PATTERN)
FOR B.A. III- PHYSICAL EDUCATION

B.A.PartIII (Physical Education)

- 1 TITLE : Revised syllabus (semester pattern) CBCS
Under Faculty of Education
- 2 YEAR OF IMPLIMENTATION : Revised syllabus will be implemented
From June 2020
- 3 DURATION : B.A.PartIII- Two Semesters (one year)
- 4 PATTERN OF EXAMINATION : Semesters
- A) THEORY EXAMINATION : At the end of semester as per Shivaji University Rules
- B) PRACTICAL EXAMINATION : I) in first and Second Semesters (paper no VII & XI)
(Paper no XII & XVI) there will be Conduct of external practical and
related mark sheet submitted by external examiner
- 5 MEDIUM OF INSTRUCTION : English/ Marathi
- 6 STRUCTURE OF COURSE : B.A.part –III
Two semesters (Sem V and VI)

7 SCHEME OF EXAMINATION

A) THEORY

The theory exam shall be at the end of each semester.

All theory papers (No. VII to XVI) shall be of one hour's duration carrying 25 marks.

Evaluation of the performance of the students in theory shall be on the basis of semester Examination as mentioned above.

Question paper will be set in the view of entire syllabus preferably covering each unit of the syllabus.

Nature of question paper for Theory Examination

Descriptive question having 10 marks (one out of two)

Short note type question having 10 marks (Two out of three)

There will be one objective type question having (multiple choice) 5 marks.

There are two separate heads for passing i.e. Theory and Practical In theory and Practical minimum 9 marks out of 25 is required for passing in each head.

B) Practical examination conducted -

- a) Each batch of 20 students
- b) One organizer (Internal subject teacher)
- c) Two examiners appointed by University.
- d) Peons - Two peons for ground marking, water supply and equipment supply and collecting of materials.

e) Result sheet (Practical)

N.B. 1) two periods for theory + two periods for Practical for each paper — per week.

N.B. 2) the record book/ Project Report will be assessed by internally and marks should be submitted to the external Examiner.

SHIVAJI UNIVERSITY, KOLHAPUR
PHYSICAL EDUCATION (Special)
B. A, Part III
Semester – V
Paper VII DSE E - 41
HEALTH EDUCATION

Unit I) Health Education

- a) Meaning, definitions of Health Education.
- b) Nature and scope of Health Education.

Unit II) Health care

a) Personal Health

- 1) Factor's of Personal Health -I) Physical II) Mental
- 2) Factors influencing on Health
- I) Heredity II) environment II) Habits IV) Exercise

b) Social Health

- a) Communicable diseases Causes & Prevention
(HIV / AIDS, Malaria, Dengue, Chikungunya, Swine Flu, Corona etc.)

Unit III) Health of the Community

- a) Health problems in family, Community, School and Colleges.

Books Recommended

1. Health Education and Hygiene - J. S. Manjal. Universal Publishers, Agra.
2. Health in India - Grant.
3. Preventive and Social Medicine — J. E. Park.
4. Adapted and Corrective Physical Education - Kielly.
5. Applied anatomy and Kinesiology - Rash and Burke.
6. Exercise Physiology - Fox.
7. Physical Education and Health, Singh Mandeep (2009) Khel sahitya Kendra, New Delhi.
8. स्वास्थ्य एवं शारिरीक शिक्षा, शर्मा आर.डी. (१९७७) सोहन प्रिटींग सर्व्हिस, दिल्ली
9. आपण आणि आपले आरोग्य डॉ. हेगाडे बी. एम. (१९९७) मेहता पब्लिशिंग हाउस, पुणे

Semester - V

Paper- VIII DSE E - 42

RECREATION IN PHYSICAL EDUCATION

Unit I Introduction:

- a) Meaning .Concept, Definitions, of Rhythm
- b) Need & Importance of Rhythmic exercise.

Unit II

- a) Meaning, Definitions & Concept of Recreation
- b) Aim & Objectives of recreation

Unit III Recent trends in recreation

- a) Hiking b) Trekking c) Sports camps and Competitions d) Aerobics and Zumba

Books Recommended

1. An Introduction to Recreation Education – W. B. Saunders Company Philadelphia-1955.
2. Community Recreation - Meyer and Brightbill, Prentice Hall, INC 1966.
3. Leisure and Recreation - Neumeyer and Esther. A. S, Barnes and Company, 1956.
4. क्रीडा व रंजन - डी.व्ही. खासनीस
5. Introduction to Community Recreation - Bultter.
6. Organisation of Physical Education - J. P. Thomas

Semester - V
Paper-IX DSE E - 43

YOGA

Unit I) Aim, Objectives and Scope of Yoga in Human Life

Unit II) Yoga and Physical Health: Promotives, Preventive and Curative aspects
Of Physical Health tackled through Yogic practices

Unit III) Yoga and Mental Health: Nature of problems in mental health.
Promotive, Preventive and Curative aspects of mental health through Yogic practices.

Books Recommended

1. Applied Yoga - Dr. M. L. Gharote. Kaivaiyadhama, Lonavala.
2. Yoga and your heart - Datey K. K., Gharote, M. L. and Soli Parri, Jaico Publications, Bombay,
3. Yogic Therapy - Swami KuvalYananda and S. L., Vinekar, Central Bureau of Health Services ,
New Delhi-1963.
4. Yogasana - A. Teachers guide, N.C.E.R.T. - New Delhi,
5. Teaching methods for yogic practices Dr. M. L. Gharote, Kaivaiyadhama, Lonavala.
6. Light on Yoga - B. S, lyangar.
7. आरोग्याची गुरुकिल्ली - डॉ. गुंडे, कोल्हापूर
8. योगाभ्यास - सुखी जीवन, श्रीपाल जर्दे (१९९५) चंद्रमा प्रकाशन कोल्हापूर

Semester - V
Paper-X DSE E - 44

ANATOMY AND PHYSIOLOGY

Unit I) Introduction:

- a) Anatomy, Physiology -Meaning, definition and importance.
- b) The cell and its parts.

Unit-II) Skeletal and Muscular System

- a) Types of Bones and names of various bones of the body.
- b) Various types of joints and major movements around them.
- c) Structural classification of skeletal muscle, structure and functions of skeletal muscle.

Unit III) Respiratory System:

- a) The nose, pharynx, larynx, trachea, bronchioles, lungs - structure and functions.
- b) Vital capacity, Second wind.
- c) Effect of exercise on respiratory system

Books Recommended

1. Scatt K Power T Howley-exercise physiology theory and application Of fitness and performance publisher, McGrow Hill Higher education.
2. Graham Thompson-Physical Education Anatomy and exercise physiology publisher Hodder education, Great Britain.
3. Avelin C Pearce - Anatomy and physiology for Nurse-Oxford university press New Delhi (2003)

Semester - V
Paper-XI DSE E - 45

DIETETICS AND NUTRITION

Unit I) Diet components

Carbohydrates, Proteins, Fats, vitamins. Mineral Fibers and water (need & importance)

Unit II) Balance Diet:-

Meaning. Definition and sources.

Unit III) Malnutrition

- a) Under weight-causes, sign and symptoms.
- b) Obesity - causes, types, Signs and symptoms.

Books Recommended

1. Handbook of Hygiene and Public Health - U. Bedi, Anand Publishing Company, Amritsar, 1962.
2. Nutrition and Physical Fitness - Bogert, Briggs and Galloway, W.B. -Saunders Co. 1966.
3. Human Nutrition and Dietics - Davidson and Passmore, The Williams and Wilkins Co., 1966.
4. Preventive and Social Medicine J. E. Park.
5. Nutrition - Dr. Swaminathan
6. Diet, Health & exercise- major chas G.Perciral (2012),Khe! sahitya Kendra,New Delhi.
7. Physical fitness & Health, Dr.Gupta M.C. (2012) Khel sahitya Kendra.New Delhi.
- 8.स्वास्थ्य एवं शारिरीक शिक्षा, शर्मा आर.डी. (१९७७) सोहन प्रिटींग सर्व्हिस, दिल्ली
- 9.आपण आणि आपले आरोग्य डॉ. हेगाडे बी. एम. (१९९७) मेहता पब्लिशिंग हाउस, पुणे
- 10.आहारशास्त्र - सौ. मोमीन एस.एस. (२०११), सिराजोशफी प्रकाशन, कोल्हापूर
- 11.अन्नशास्त्र - कुकडे सु.रा. शेंडे - गोगटे, प्रा. डॉ. पानसे के.व्ही. (१९८९) कॉन्टिनेन्टल प्रकाशन पुणे
- 12.आहारशास्त्राची मुलतत्वे - महाजनी स्नेहा (१९७८) श्री मंगेश प्रकाशन, नागपूर

SHIVAJI UNIVERSITY, KOLHAPUR

B. A. Part III

Semester - VI

Paper-XII DSE E - 166

HEALTH EDUCATION PROGRAM

Unit I) Health Programme

- a) Importance of exercises in health and fitness.
- b) Drugs, Alcohol and Tobacco-Adverse effect on performance.

Unit II) Population Education

- a) Need Importance and Scope of population education.
- b) Role of Health education in population education.

Unit III) World Health Organization (WHO)

- a) Aims & Objectives, program and projects
- b) World Health Organization - India
- c) HIV / AIDS - causes, symptoms and prevention.

Books Recommended

1. Health Education and Hygiene - J. S. Manjal. Universal Publishers, Agra.
2. Health in India - Grant.
3. Preventive and Social Medicine — J. E. Park.
4. Adapted and Corrective Physical Education - Kielly.
5. Applied anatomy and Kinesiology - Rash and Burke.
6. Exercise Physiology - Fox.
7. Physical Education and Health, Singh Mandeep (2009) Khel sahitya Kendra, New Delhi.
8. स्वास्थ्य एवं शारिरीक शिक्षा, शर्मा आर.डी. (१९७७) सोहन प्रिटींग सर्व्हिस, दिल्ली
9. आपण आणि आपले आरोग्य डॉ. हेगाडे बी. एम. (१९९७) मेहता पब्लिशिंग हाउस, पुणे

Semester - IV
Paper-XIII DSE E - 167

RESEARCH IN PHYSICAL EDUCATION

Unit I) Research – Concept, Meaning and Definition

Unit II) Types of research

Unit III) Research Process

i) Stages in research process

Books Recommended

1. Barrow, H. M. (1979). Practical Approach to Measurement in Health & Physical Education. (3rd ed.). Philadelphia: Lee & Febigeer
2. Best, J. W. & Kahn, J. V. (2006). Research in Education.(10th ed.). New Delhi: PHI
3. Clark, D. H. & Clark, H. H. (1979). Research process in Physical Education, recreation & health. Englewood Cliffs: prentice Hall.
4. Johnson, B. & Christensen, L. (2008). Education Research, Quantitative, Qualitative and Mixed Approaches. (3rd ed.). Sage Publication: England.
5. Miller, David. K. (2002). Measurement by the Physical Educator. New York: McGraw Hill companies.
- John & Nelson (1998). Practical Measurements for Evaluation in Physical Education. Delhi: Surjit Publication.
6. Sprinthall, R. C. (1997). Basic statistical Analysis. (5th ed.). USA: Allyn & Bacon
7. Thomas, J. R. & Nelson, J. K. (2001). Research Methods in Physical Education, (4th ed.). USA: uman Kinetics.
8. आगलावे, प्र.ना. (२०००). संशोधन पद्धतीशास्त्र व तंत्रे (प्रथम आवृत्ती), नागपूर : विद्या प्रकाशन.
9. जर्दे श्री.आ. (१९९५) शारीरिक शिक्षण संशोधन तंत्र व पद्धती (द्वितीय आवृत्ती) कोल्हापूर : चद्रमा प्रकाशन

Semester - VI
Paper-XIV DSE E – 168
YOGA AND HEALTH

- Unit I)** Relationship of Yoga with Emotional Health.
- Unit II)** a) Structure of Human body and yogasanas.
b) Effect of yogic exercises on respiratory and nervous system.
- Unit III)** Yoga and Sports: Psychophysical basis of promoting sports career. Contribution of yogic practices for the development of Sports performances.

Reference Books

1. Applied Yoga - Dr. M. L. Gharote, Raivalyadhama, Lonavala.
2. Yoga and your heart - Datey K. K., Gharote, M. L. and Soli Parri, Jaico Publications, Bombay.
3. Yogic Therapy - Swami Kuval Yananda and S. L., Vinekar, Central Bureau of Health Services, New Delhi-1963.
4. Yogasana - A. Teachers guide, N.C.E.R.T. - New Delhi.
5. Teaching methods for yogic practices Dr. M, L. Gharote, Kaivalyadhama, Lonavala.
6. Light on Yoga - B. S. Iyengar.
7. आरोग्याची गुरुकिल्ली - डॉ. गुंडे कोल्हापूर
8. योग आणि आरोग्य - डॉ. गुंडे कोल्हापूर
9. योगाभ्यास - सुखी जीवन, श्रीपाल जर्दे (१९९५) चंद्रमा प्रकाशन कोल्हापूर

Semester - VI
Paper-XV DSE – E 169
ANATOMY AND PHYSIOLOGY OF EXERCISE

Unit-I) Circulatory System:

- A) Blood - Its constituents and functions, Heart - its structure and function.
- B) Blood pressure, Pulse, Blood groups, Oxygen debt.

Unit-II) Digestive System:

- A) Organ of digestive system - Mouth, teeth, salivary glands, pharynx, oesophagus, stomach, small and large intestine, pancreas, liver, structure and function - in brief.
- B) Excretory System:
Kidney and skin - its Structure and function

Unit-III) Nervous System:

Structure of brain and spinal cord, Reflex action.

Books Recommended

1. Willmore, Jack and Costall, David L. Physiology of sports and exercise, Human kinetics 1994.
2. Rowland, Thomas W. Children's exercise physiology second edition Human Kinetics, 2005.
3. Fox E.L. Physiological basis of physical education and athletics, Brown Pub. 1989.

Semester VI
Paper-XVI DSE – E - 170
DIETETICS AND HYGIENE

Unit I) Food sources and the their effect

- a) Natural food
- b) Impure food
- c) Processed food
- d) Stimulants

Unit II) Athlete Diet

Meaning .Need and importance.

Unit III) Immunity

- a) Personal hygiene - desirable hygiene habits
- b) School Health programme – service, supervision.

Books Recommended

1. Handbook of Hygiene and Public Health - U. Bedi, Anand Publishing Company, Amritsar, 1962.
2. Nutrition and Physical Fitness - Bogert, Briggs and Galloway, W.B. -Saunders Co. 1966.
3. Human Nutrition and Dietics - Davidson and Passmore, The Williams and Wilkins Co., 1966.
4. Preventive and Social Medicine J. E. Park.
5. Nutrition - Dr. Swaminathan
6. Diet, Health & exercise- major chas G.Perciral (2012),Khe! sahitya Kendra,New Delhi.
7. Physical fitness & Health, Dr.Gupta M.C. (2012) Khel sahitya Kendra.New Delhi.
- 8.स्वास्थ्य एवं शारिरीक शिक्षा, शर्मा आर.डी. (१९७७) सोहन प्रिटींग सर्व्हिस, दिल्ली
- 9.आपण आणि आपले आरोग्य डॉ. हेगाडे बी. एम. (१९९७) मेहता पब्लिशिंग हाउस, पुणे
- 10.आहारशास्त्र - सौ. मोमीन एस.एस. (२०११), सिराजोशफी प्रकाशन, कोल्हापूर
- 11.अन्नशास्त्र - कुकडे सु.रा. शेंडे - गोगटे, प्रा. डॉ. पानसे के.व्ही. (१९८९) कॉन्टिनेन्टल प्रकाशन पुणे
- 12.आहारशास्त्राची मुलतत्वे - महाजनी स्नेहा (१९७८) श्री मंगेश प्रकाशन, नागपूर

SHIVAJI UNIVERSITY, KOLHAPUR

B. A. III (Practical)

SEMESTER V

Practical (New Course) Applicable from June 2020 and onwards

Paper VII to XI

Parameter for Practical Examinations

- 1) Athletics - 5000 meter run, Triple Jump, Javelin Throw. -- (Men)
3000 meter run, Triple Jump, Javelin Throw. -- (Women)
(Different Styles. Modern Techniques & performance)
- 2) Weight Lifting - Different Styles, Modern Technique and Performance
- 3) Badminton OR Table Tennis
- 4) Asana -
 - A) Ten Minutes sitting in any meditative Asana
 - B) Matsyasana, Akarna Dhanurasana, Suptavajrasana, Ardhamachhindrasana, Buddha Padmasana
 - C) Pranayama - Anulom Vilom, Bhastrika, Bhramri, Shitkari, Shitali
- 5) First Aid - Practical
 - A) First Aid - Meaning, Objectives, Important rules
 - B) Material in the First Aid Box
 - C) Fracture - Types, Signs and Symptoms - Use of Sling and Splint
 - D) Bleeding - Types, Signs and Symptoms - Use of Sling and Splint
 - E) Artificial Respiration - Meaning and Method of Artificial respiration
(Any Two)
 - F) Bandage, Meaning, Types, Way of applying sling, simple dressing
- 6) Wrestling - Performance and Rules
- 7) Judo OR Fencing - Various Techniques
- 8) Recreational Game

Marking System		
	MEN	WOMEN
Athletics	45	45
Weight lifting	15	15
Badminton OR T.T.	10	10
Asana and Pranayan?	15	15
First Aid	10	10
Wrestling	15	15
Fencing OR Judo	10	10
Recreational Game	05	05

Total 125

PARAMETERS FOR PRACTICAL EXAMINATION

1) Athletics -

1) A) Tripple Jump

MEN

Marks	Minimum Performance
8 -	9 Meters and Above
6 -	8 to 9.9 Meters
4 -	7 to 8.9 Meters
2 -	6 to 7. 9 Meters

WOMEN

Marks	Minimum Performance
8 -	8 Meters and Above
6 -	7 Meters
4 -	6 Meters
2 -	5 Meters

(8 Marks for performance, 7 Marks for Technique and style,)

B) Jeveline Throw

MEN

Marks	Minimum Performance
8 -	25 Meters and Above
6 -	22 to 29.99 Meters
4 -	19 to 26.99 Meters
2 -	16 to 23 9 Meters

WOMEN

Marks	Minimum Performance
8 -	20 Meters
6 -	18 Meters
4 -	16 Meters
2 -	14 Meters

(8 Marks for performance, 7 Marks for Technique and style,)

C) Running

MEN		5000 Meter Running
Marks		Minimum Performance
8	-	30 Minutes
6	-	34 Minutes
4	-	36 Minutes
2	-	38 Minutes

WOMEN		3000 Meter Running
Marks		Minimum Performance
8	-	15 Minutes
6	-	16 Minutes
4	-	17 Minutes
2	-	18 Minutes

(8 Marks for performance, 7 Marks for Technique and style,)

Weight Lifting

(Different Styles, Modern Technique and Performance)

MEN

Marks		Minimum Performance
5	-	115 Kg
4	-	110 Kg
3	-	105 Kg
2	-	95 Kg
1	-	85 Kg

WOMEN

Marks		Minimum Performance
5	-	90 Kg
4	-	80 Kg
3	-	70 Kg
2	-	65 Kg
1	-	60 Kg

4) Asana (15 Marks)

- A) 10 Minutes sitting in any modified asana - 5 Marks
- B) From Section (b) the practical syllabus - 5 Marks
- Two asana of student choice
 - Two asana of examiners choice
- C) From section (C) Practical Syllabus - 5 Marks
- One pranayama from student choice
 - One pranayama from examiners choice

5) First Aid

10 marks

- Oral Knowledge test

- 5 Marks

- Practical Knowledge test

- 5 Marks

(Use of Bandage - Use of Splint - Use of tourniquet)

6} Wrestling (10 Marks)

Performance

6 Marks

Rules

4 Marks

7) Judo OR Fencing (10 Marks)

Various Technique

6 Marks

Rules

4 Marks

8) Recreational Game

05 Marks

(Presentation of any one recreational Game)

SHIVAJI UNIVERSITY, KOLHAPUR

B. A. III (Practical)

SEMESTER VI

Practical (New Course) Applicable from June 2020 and onwards

Paper XII to XVI

Parameter for Practical Examinations

1) Athletics - 110 Meters Hurdles (MEN),

100 Meters Hurdles (WOMEN), Relay (4 X 100 Meters)

2) Gymnastics - Ground Exercises - Front Role, Back Role, Cartwheel,

Dive and Role, Hand Stand

3) Marking of Track

4) Ball Game-

Foot Ball OR Cricket

1- Fundamental Skills

2- Rules and Regulation (Tested Orally)

5) Record Book/Project

6) Educational Tour and Report

Marking System

	Boys		Girls
Athletics	30	-	30
Gymnastics	10	-	10
Marking of Track	20	-	20
Ball Game	20	-	20
Record Book	20	-	20
Study Tour & Report	25	-	25
Total	125		

PARAMETERS FOR PRACTICAL EXAMINATION

1) Athletics –

Men

110 Meters Hurdles

Marks		Minimum Performance
8	-	20 second and below
6	-	20.01 to 24 second
4	-	24.01 to 26 second
2	-	26 second and above

Women

Marks		Minimum Performance
8	-	25 second and
6	-	25.01 to 29 second
4	-	29.01 to 33 second
2	-	33.01 to 37 second

(8 Marks for performance, 7 Marks for Technique and style,)

3) Relay Marks (4 x 100 m.) (15 Marks)

- Batten Exchange Technique - 10 Marks
- Viva Voce - 05 Marks

2) Gymnastics

- 10 Marks

- 1) Forward Roll
- 2) Backward Role
- 3) Dive and Roll
- 4) Cartwheel
- 5) Hand Stand (Each Event 2 Marks)

3) Marking of Track

- 20 Marks

(Student should marks the sectors of the following Events, on the ground only)

(Shot-put, Javelin Throw and Discus Throw)

- A) Sector Marking for above three events 4 Marks
- B) Marking of 400 Met. Track
 - Marking of 400 met. Track 4 Marks
 - Marking of starting and finishing line 4 Marks
- C) (100 met. Running, 100 met. Hurdles, 110 met. Hurdles) 4 Marks
- D) Marking of staggers Distance
 - (200 met. Running, 400 met. Running, 800 met. Running) 4 Marks

4) Ball Game –

Foot Ball or Cricket

20 Marks

- A) Fundamental Skills 12 Marks
- B) Rules and Regulation (Tested Orally) 08 Marks

5) Record Book / Project

20 Marks

6) Educational Tour and Report

25 Marks

प्रश्नपत्रिकेचे स्वरूप खालील प्रमाणे राहिल

लेखी प्रश्नपत्रिकेचे स्वरूप

गुण :- २५

वेळ :- १ तास

प्रश्न १	दीर्घ उत्तराचा प्रश्न किंवा दीर्घ उत्तराचा प्रश्न	१० गुण
प्रश्न २	टीपा द्या (एकूण ३ पैकी २)	१० गुण
प्रश्न ३	पर्यायी उत्तर द्या	५ गुण

Mark list – V Semester

[illegible]

Mark list – VI Semester

[illegible]

SHIVAJI UNIVERSITY, KOLHAPUR



Revised Syllabus for
Bachelor of Arts (Part- III)

SEMESTER V & VI
HISTORY

(Syllabus to be implemented from June 2020 onwards)

EQUIVALANCE OF B.A. III HISTORY SEMESTER- V

Semester	Paper No	Title of Old Paper (June 2015)	Semester	Course No	Title of New Course (June 2020)
V	Paper No. VII	History of Ancient India (From Prehistory to 3rd c. BC)	V	Course No. VII	Early India (from beginning to 4th c. BC)
V	Paper No. VIII	Political History of Medieval India (1206 to 1707 A.D.)	V	Course No. VIII	History of Medieval India (1206-1526 AD)
V	Paper No. IX	India Since Independence –I	V	Course No. IX	Age of Revolutions
V	Paper No. X	History of the Marathas (1707-1818)	V	Course No. X	Political History of the Marathas
V	Paper No. XI	Introduction to Historiography	V	Course No. XI	History: Its Theory

EQUIVALANCE OF B.A. III HISTORY SEMESTER VI

Semester	Course No	Title of Old Paper	Semester	Course No	Title of New Course
VI	Paper No. XII	History of Ancient India (From 3 c. BC to 7th c. AD)	VI	Course No. XII	Ancient India (From 4th c. BC to 7th c. AD)
VI	Paper No. XIII	Socio-Economic and Cultural History of Medieval India (1206 to 1707 A.D.)	VI	Course No. XIII	History of Medieval India (1526-1707 AD)
VI	Paper No. XIV	India Since independence- II	VI	Course No. XIV	Making of the Modern World (16th to 19th Century)
VI	Paper No. XV	Modern Maharashtra (1960 to 2000)	VI	Course No. XV	Polity, Economy and Society under the Marathas
VI	Paper No. XVI	Applications of History	VI	Course No. XVI	Methods and Applications of History

STRUCTURE OF PROGRAMME
REVISED SYLLABUS B.A. PART III (HISTORY)

Sr.No	Semester	Title of Course	Course No.	Credit	Workload	Total Credits	Theory Marks	Term Work/ Seminar
1	V	Early India (from beginning to 4th c. BC)	Course No. VII	04	4 lectures/ Week	20 Credits	40	10
2	V	History of Medieval India (1206-1526 AD)	Course No. VIII	04	4 lectures/ Week		40	10
3	V	Age of Revolutions	Course No. IX	04	4 lectures/ Week		40	10
4	V	Political History of the Marathas	Course No. X	04	4 lectures/ Week		40	10
5	V	History: Its Theory	Course No. XI	04	4 lectures/ Week		40	10
Sr.No	Semester	Title of Course	Course No.	Credit	Workload	Total Credits	Theory Marks	Term Work/ Group Project
6	VI	Ancient India (From 4th c. BC to 7th c. AD)	Course No. XII	04	4 lectures/ Week	20 Credits	40	10
7	VI	History of Medieval India (1526-1707 AD)	Course No. XIII	04	4 lectures/ Week		40	10
8	VI	Making of the Modern World (16th to 19th Century)	Course No. XIV	04	4 lectures/ Week		40	10
9	VI	Polity, Economy and Society under the Marathas	Course No. XV	04	4 lectures/ Week		40	10
10	VI	Methods and Applications of History	Course No. XVI	04	4 lectures/ Week		40	10

B.A. Part -III, (History)
Semester –V, Course VII DSE E-61

Paper VII : Early India (from beginning to 4th c. BC)

Course Objectives: This course explores the major historical developments in India from the beginning to the 4th Century B.C. It traces the history of the Indian subcontinent from the Paleolithic period to the establishment of the Mauryan state. The student will be introduced to the political, social, economic and religious developments in India during this formative period. This course will help the students to understand how India came to be. They will know the facts about the early period of Indian history up to the 4th century B.C. They will get an introduction to the beginnings of India's political, socio-economic and cultural dynamics and understand the legacy of Ancient India.

Course Outcomes:

After studying the course the student will be able to ...

- 1) Understand the transition of humans in India from Hunters to Farmers
- 2) Explain the transition from Early to Later Vedic period.
- 3) Clarify the causes for the first and second urbanizations
- 4) Give an account of the teachings of Gautama Buddha and Vardhamana Mahavira
- 5) Describe the rise and growth of the Mauryan Empire
- 6) Explain the salient features of Ashoka's Dhamma

Module I: The Beginning

- a) The Hunter-Gatherers: Paleolithic and Mesolithic
- b) The Early Farmers: Neolithic and Chalcolithic
- c) The First Urbanization: Harappan Civilization
- d) The Megalithic Nomads: Burial types, nature of remains

Module II: The Vedic Age and Epics

- a) Vedic literature
- b) Transition from Early to Later Vedic period: Polity and Economy
- c) Transition from Early to Later Vedic period: Society and Religion
- d) The Epics: Ramayana and Mahabharata

Module III: The Second Urbanization

- a) Nature of second urbanization
- b) Emergence of Regional States (16 Maha-janapadas)
- c) Gautama Buddha- His teachings
- d) Vardhamana Mahavira- His teachings

Module IV: The Mauryan Empire

- a) Sources: Arthashastra and Indica
- b) Chandragupta Maurya and Ashoka
- c) Mauryan administration
- d) Ashoka's Dhamma

Select Reference Books:

- Allchin, B. G.; Allchin, B.; Allchin, R.; Yoffee, N.; Alcock, S.; Dillehay, T. et al. (1982): The Rise of Civilization in India and Pakistan: Cambridge University Press (Cambridge World Archaeology).
- Habib, I.; Thakur, V. (2016): The Vedic Age: Tulika Books (A People's History of India Series).
- Jha, D. N. (1977): Ancient India: an introductory outline: People's Pub. House.
- Kosambi, D. D. (1975): An Introduction to the Study of Indian History: Popular Prakashan.
- Majumdar, R. C.; Bharatiya Vidya Bhavan; Bharatiya Itihasa Samiti (1951): The History and Culture of the Indian People: The Vedic age: G. Allen & Unwin (The History and Culture of the Indian People).
- Sharma, R. S. (1991): Aspects of Political Ideas and Institutions in Ancient India: Motilal Banarsidass.
- Sharma, R. S. (2006): India's Ancient Past: OUP India.
- Sharma, R. S. (2007): Material Culture and Social Formations in Ancient India: Macmillan India.
- Sharma, R. S.; Kumar, D. (2018): Bharat Ka Prachin Itihas: Oxford University Press India.
- Singh, U. (2009): A History of Ancient and Early Medieval India: From the Stone Age to the 12th Century (PB): Pearson India.
- Thapar, R. (2004): Early India: From the Origins to AD 1300: University of California Press.
- Thapar, R. (2012): Asoka and the Decline of the Mauryas: OUP India (Oxford India Perennials).
- थापर रोमिला, अर्ली इंडिया, के सागर पब्लिकेशन; पुणे, २०१३
- थापर रोमिला दी पेंवीन हिस्टरी ऑफ अर्ली इंडिया, के सागर पब्लिकेशन्स; पुणे, २०१८
- वासंती फडके (अनु.), एंशंट इंडिया (प्राचीन भारत) मूळ लेखक शर्मा आर.एस., के सागर पब्लिकेशन; पुणे, २०१५

- रोमिला थापर, लिखित अशोक आणि मौर्यांचा ऱ्हास, (Asoka and the Decline of the Mouryas या पुस्तकाचा अनुवाद). अनुवादिका. डॉ. सौ. शरावती शिरगावकर. अनुवादिका, महाराष्ट्र राज्य, महाराष्ट्र राज्य साहित्य आणि संस्कृती मंडळ, मुंबई, २००७
(https://sahitya.marathi.gov.in/scans/Ashok%20Ani%20Mauryacharhas_131.pdf)
- ढवळीकर, मधुकर केशव., आर्यांच्या शोधात, राजहंस प्रकाशन; पुणे, २०१२
- ढवळीकर, मधुकर केशव, कोण होते सिंधू लोक ?, राजहंस प्रकाशन प्रा लि; पुणे, २०१६
- ढवळीकर, मधुकर केशव, कोणे एके काळी सिंधु संस्कृती, राजहंस प्रकाशन, पुणे, २००६

B.A. Part III
Semester V, Course No: VIII DSE E-62
History of Medieval India (1206-1526 AD)

Course Objectives: This course covers the important period of Medieval Indian History. It was during this period that the Sultans established their rule in India. They introduced fundamental changes in polity, society, religion and culture of India. The course will acquaint the with various sources of medieval Indian history. They will get knowledge about the activities of major rulers and the policies followed by them. The students will know about the agricultural condition, development of trade and industry as well as the social, religious and architectural milieu of the period.

Course Outcomes:

After studying the course the student will be able to...

- 1) Describe the different types of historical sources available for writing the history of medieval India
- 2) Explain the contributions of medieval rulers like Allaudin Khilji, Muhammad-bin-Tughlaq, Krishnadevraya, and Mahmud Gavan
- 3) Give an account of the administration and economy of the Delhi sultanate and Vijayanagar Empire
- 4) Elucidate the significant developments which took place in religion, society and culture

Module I - Sources:

- a) Literary: Tarikh-i- Firozshahi, Amuktamalyada
- b) Archaeological (excluding Monuments)
- c) Account of Foreign Travelers: Ibn Battuta, Domingo Paes

Module II - Major Rulers

- a)Allaudin Khilji: Internal policy and reforms
- b) Muhammad - bin- Tughlaq : Experiment of Token Currency
- c) Krishnadevraya: Military success and cultural contribution
- d) Mahmud Gavan: Contribution to Bahmani Kingdom

Module III - Administration and Economy(Delhi Sultanate and Vijaynagar)

- a) Administration : Central and Provincial
- b) Agriculture and Land Revenue
- c) Industry and Trade

Module IV) Religion, Society and Culture:

- a) Sufi Order: Chishti Silsila; Bhakti Movement: Sant Kabir; Sikh Religion: Guru Nanak
- b) Society: Hindu and Muslim
- c)Architecture: Delhi Sultanate, Vijaynagar and Bahamani.

Select Reference Books:

- Rizvi, S.A.A., The Wonder that was India, Part II, Rupa, Delhi,2002
- Chitnis, K.N., Glimpses of Medieval Indian Ideas and Institutions, 1974

- Chitnis K. N. Socio- Economic Aspects of Medieval India, Poona, 1979
- Mehta, Jaswant Lal, Advanced Study in the History of Medieval India, Volume I to III, Sterling, New Delhi, 1981.
- Raychaudhuri Tapan and Irfan Habib (eds.), Cambridge Economic History of India, Vol. I. C. 1200 C. 1750., Delhi, S. Chand, 1984.
- Satish Chandra, History of Medieval India (800- 1700), Orient Longman, Hyderabad, 2007
- जे. एल. मेहता, क्षीरसागर वि. एस, देशपांडे व्ही. टी, मध्ययुगीन भारताचा बृहत् इतिहास , तीन खंड, के' सागर पब्लिकेशन्स, पुणे, २०१७
- Stein, Burton, Vijayanagara , Cambridge University Press, 1989
- सतीश चंद्र , वि. एस. क्षीरसागर, मध्ययुगीन भारत – मोगल साम्राज्य १५२६- १७४८, के सागर पब्लिकेशन्स, २०१७
- Salma Ahmed Farooqui, A Comprehensive History of Medieval India, Pearson, 2011.
- के. एन चिटणीस: मध्ययुगीन भारतीय संकल्पना व संस्था, खंड १ ते ४, पुणे, १९८२
- श. गो. कोलरकर: मध्ययुगीन भारताचा इतिहास (१२०६ ते १७०७) , श्री मंगेश प्रकाशन , १९९४
- बारगळ व ढवळे, मध्यकालीन भारत , विद्याप्रकाशन, नागपूर, १९८७
- डब्ल्यू. एच. मूरलॅन्ड, अबकार कालीन हिंदुस्थान , ICHR, डायमंड प्रकाशन, पुणे, २००६
- डब्ल्यू. एच. मूरलॅन्ड, अबकार ते औरंगजेब, ICHR, डायमंड प्रकाशन, पुणे, २००६
- एन. ए. सिद्दिकी, मोगलकालीन महसूल पद्धती, ICHR, डायमंड प्रकाशन, पुणे , २००६
- जदूनाथ सरकार, औरंगजेब, डायमंड प्रकाशन, पुणे, २००६

B.A. Part III
Semester V, Course No: IX DSE E-63
Age of Revolutions

Course Objectives: This course introduces the students to the pathbreaking events of global history. The students will study the accounts of the causes and consequences of the transformative revolutions which changed the history of mankind. They brought about sudden big changes not only in the country in which they happened but also the world in general. Most of them left a lasting effect on the thought and the socio-political and cultural conditions of mankind. The course has been framed to make the students aware of the change and impact of these revolutionary events.

Course Outcomes:

After studying the course the student will be able to...

- 1) Explain the causes and consequences of the Reformation
- 2) Give an account of the role played by Martin Luther
- 3) Explain the salient features of the Industrial revolution
- 4) Give an account of the American revolution
- 5) Explain the causes, effects and major events of French Revolution
- 6) Explain the role of major leaders of the French Revolution

Module I: Reformation (16th Century)

- a) Causes
- b) Role of Martin Luther
- c) Consequences

Module II: Industrial Revolution (18th Century)

- a) Causes
- b) Major Developments
- c) Effects

Module III: American Revolution (1776)

- a) Causes
- b) Important events
- c) Impact

Module IV: French Revolution (1789)

- a) Causes
- b) Important events and major leaders
- c) Impact on the world

Select Reference books:

- Arun Bhattacharjee, World Revolutions, Ashish Publishing House, New Delhi, 1988
- L. Mukherjee, A Study of Modern Europe and the World, Calcutta, 2011
- John Merriman, A History of Modern Europe; From the Renaissance to the Present, W.W. Norton and Company, 2009
- Heather M. Campbell, The Emergence of Modern Europe, c.1500 to 1788, The Rosen Publishing Group, Inc, 2011
- प्रा. ना. गो. भवरे, डॉ. मु. बा. देवपुजारी, अमेरिकाचा इतिहास, पायल प्रकाशन, नागपूर १९७३
- सु. ग. देशपांडे, अमेरिकेचा इतिहास, व्हीनस प्रकाशन पुणे, १९७१
- मदन मारडीकर, आधुनिक युरोपचा इतिहास इ.स. १७८१ ते १९४५, विद्या बुक्स, २००५
- सत्यकेतू विद्यालंकार, युरोप का आधुनिक इतिहास (१७८९-१९७४), २०१३
- कुलकर्णी अ. रा. आणि फडके श्री. रा., आधुनिक युरोप, देशमुख आणि कंपनी, १९६७
- देसाई दत्ता, आधुनिकतेचे आगमन: युरोपकेंद्री इतिहासाचा जागतिक विचार, द युनिक अकॅडमी; पुणे, २०१५
- जोगळेकर ज. द, फ्रेंच राज्यक्रांती, मॅजेस्टीक प्रकाशन, १९८९
- केळकर न. चिं., फ्रेंच राज्यक्रांती, भावे प्रकाशन, १९८९
- देव बळवंत अनंत, मार्टिन ल्युथर युरोपातील धर्मक्रांतीचा इतिहास, गंगाबाई देव, १९१५
- मॉरिसन रिचर्ड बी (भाषांतर परांजपे वा. कृ.), अमेरिकन क्रांति, सौ. सुलोचना लिमये, १९५७

B.A. Part - III
Semester V, Course No. X DSE E-64
Political History of the Marathas

Course Objectives: The course is designed to study the political condition of Marathas after 1707. The Maratha polity was transformed into the largest political entity of India in the eighteenth century. The course introduces the students to the political developments which led to the expansion of Maratha power in the eighteenth century. It also explores the causes and events which led to the eventual decline of Maratha power.

Course Outcomes:

After studying the course the student will be able to...

- 1) Describe the political conditions of the Marathas upto the year 1740
- 2) Explain the role of Balaji Bajirao.
- 3) Explain the causes and effects of the Battle of Panipat.
- 4) Understand the political condition of the Marathas after 1761.
- 5) Critically analyze the causes for the decline of Maratha power.

Module I: Political condition up to 1740

- a. Release of Shahu; Struggle between Shahu and Maharani Tarabai.
- b. Balaji Vishwanath : Delhi Campaign, Maratha Confederacy
- c. Bajirao Peshwa: Northern Policy, Relations with Nizam

Module II: Balaji Bajirao and Battle of Panipat(1761)

- a. Relations with Angre
- b. Conflict with Raghuji Bhosale
- c. Battle of Panipat-1761

Module: III Political condition after 1761

- a. Madhavrao Peshwa
- b. Mahadji Shinde
- c. Nana Phadnavis

Module IV: Decline of the Maratha Power

- a. Peshwa Bajirao II
- b. Second and Third Anglo- Maratha War
- c. Causes for the decline of Maratha power

Select Reference books :

- अप्पासाहेब पवार (संपा) : ताराबाई कालीन कागदपत्रे, खंड १, शिवाजी विद्यापीठ, २०१८
- भावे, वा. कृ., पेशवेकालीन महाराष्ट्र, पुनर्मुद्रित, इंडियन काउन्सिल अन्व हिस्टॉरिकल रिसर्च, नवी दिल्ली, १९७६
- सेतुमाधवराव पगडी : मराठ्यांचे स्वातंत्र्ययुद्ध, पुणे, १९६२

- महादेव गोविंद रानडे, मराठी सत्तेचा उत्कर्ष, वरदा प्रकाशन, २०१६
- प्र.न.देशपांडे : मराठी सत्तेचा उदय आणि उत्कर्ष, स्नेहवर्धन पब्लिशिंग हाऊस, पुणे, २००१
- न.र.फाटक :(अनु.) : मराठी सत्तेचा उत्कर्ष, (म.गो.रानडेकृत राईज ऑफ मराठा पॉवर चे भाषांतर)
- जयसिंगराव पवार : महाराणी ताराबाई, ताराणाणी विद्यापीठ प्रकाशन, १९७५
- जयसिंगराव पवार मराठी साम्राज्याचा उदय आणि अस्थ, कोल्हापूर , १९९३
- त्र्यं.श.शेजवलकर, श्री शिवछत्रपती- संकल्पित शिवचरित्राची प्रस्तावना, आराखडा. व साधने, मराठा मंदीर प्रकाशन, मुंबई, १९६४.
- त्र्यं.श.शेजवलकर , पानिपत १७६१, जोशी आणि लोखंडे प्रकाशन, १९६१
- गो. स. सरदेसाई, मराठी रियासत, १ ते ८ खंड , पॉप्युलर प्रकाशन, पुणे
- V.G. Dighe, Peshwa Bajirao and Maratha expansion, Karnatak Publishing House, Bombay, 1944
- M.G. Ranade, Rise of Maratha Power, 1900
- S.R. Sharma- The founding of Maratha freedom, Orient Longmans, Bombay, 1964
- H.N. Sinha – Rise of the Peshwas, The Indian Press (Publications) Ltd, Allahabad, 1954
- S.N.Sen-, Anglo Maratha Relations 1785-1796, Macmillan , Madras, 1974
- P.C.Gupta, Bajirao II and East India Company, Allied Publications Private Limited, Calcutta, 1964
- Brij Kishore, Tarabai and his Times , Bombay , 1963
- G.S. Sardesai- New History of Maratha's Vols I,II and III, Bombay, 1948

**B.A. Part III:
Semester V, Course No. XI DSE E-65
History: Its Theory**

(Field visit to any important historical place, monuments and record offices is essential)

Course Objectives:

This course has been designed to impart knowledge of the discipline of history to the students. The students will learn the nature and scope of the discipline. They will have a clear understanding of the nature of the evidence collected from primary and secondary sources. They will be introduced to the process of presenting and writing history. They will know the methods of writing history.

Course Outcomes:

After studying the course the student will be able to...

- 1) Understand the definition and scope of the subject of History
- 2) Know the process of acquiring historical data
- 3) Explain the process of presenting and writing history
- 4) Understand the methods of writing history

Module I: History: Definition and Scope

- a) Meaning, Scope and Nature
- b) Types of History
- c) Interdisciplinary Approach

Module II: Acquisition of Historical Data

- a) Sources: Nature and Types
- b) Methods of Data Collection
- c) Methods of Critical Enquiry

Module III: Process of presenting and writing history

- a) Steps of Historical Research
- b) Data Analysis and Interpretation
- c) Presentation

Module IV: Methods of History writing

- a) Notetaking
- b) Footnotes and Endnotes
- c) Index, Appendix, Bibliography

Select Reference books:

- B. Shaik, Ali., History, Its Theory and Method, Macmillan India Ltd, Madras, 1978
- Carr, E. H., What is History, Palgrave Publishers Ltd., Macmillan, 1986
- Chitnis, K. N., Research Methodology in History, Poona, 1979

- Bajaj, S. K., Research Methodology in History, Anmol Publications Pvt. Ltd., New Delhi, 1998
- Collingwood, R. G., The Idea of History, Oxford University Press, Oxford 1978
- Gottschalk, Louis., Understanding History, New York, Second Edition, 1969
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SEMESTER VI

B.A. Part III

Semester VI, Course No. XII DSE E-186

Ancient India (From 4th c. BC to 7th c. AD)

Course Objectives: This course explores the history of India from the 4th century BC to the 7th century A.D. It takes a panoramic survey of the historical developments during this crucial period of Indian history. The course studies the eventful changes which took place under the Satavhana, Kushanas, Guptas, Vakatakas, Chalukyas and Pallavas. The students will be introduced to the incomparably vivid picture of India which prevailed during the ancient period. They will be acquainted with not only the glory of Ancient India but also the social inequality and social evils which have shaped India in the past.

Course Outcomes:

After studying the course the student will be able to...

- 1) Know the political, economic and religious developments which took place in early historic India
- 2) Explain the role played by Major Satavahana, Kushana, Gupta and Vakataka Kings
- 3) Give an account of the developments in the Post-Gupta period
- 4) Have an informed opinion about the society and culture of Ancient India

Module I: Early Historic India

- a) Sources: Gatha Saptashati, Periplus of the Erythraean Sea
- b) Major Kings: Satavahana and Kushanas
- c) Industry and Trade
- d) Hinayana Buddhism

Module II: The Classical Age

- a) Major Kings: Guptas and Vakatakas
- b) Economy and Greater India
- c) Literature and Science
- d) Religion

Module III: The Post-Gupta Period

- a) Source: Hiuen Tsang
- b) North India: Harshavardhana
- c) Deccan: Early Chalukyas of Badami
- d) South India: Pallavas

Module IV: Society and Culture

- a) Position of Women and Varna Structure (From Vedic period to Post-Gupta period)
- b) Education
- c) Art (From Mesolithic Art to Ajanta Paintings)
- d) Architecture- (Rock-Cut Caves (Maharashtra) to Constructed Temples (Madhya Pradesh))

Select Reference Books :

- Jha, D. N. (1977): Ancient India: an introductory outline: People's Pub. House.
- Kosambi, D. D. (1975): An Introduction to the Study of Indian History: Popular Prakashan.
- Majumdar, R. C.; Bharatiya Vidya Bhavan; Bhāratīya Itihāsa Samiti (1951): The History and Culture of the Indian People: The Vedic age: G. Allen & Unwin (The History and Culture of the Indian People).
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- Sharma, R. S. (2006): India's Ancient Past: OUP India.
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- Majumdar, R. C.; Altekar, A. S. (1986): Vakataka - Gupta Age Circa 200-550 A.D: Motilal Banarsidass (History and Culture Series).
- Munshi, K. M.; Majumdar, R. C. (1997): The Classical Age: Bharatiya Vidya Bhavan (History and culture of the Indian people / General ed.: R.C. Majumdar).
- Sastri, K.A.N. (1958): A history of South India from prehistoric times to the fall of Vijayanagar: Oxford University Press.
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B.A. Part III
Semester VI, Course No. XIII DSE E-187
History of Medieval India (1526-1707 AD)

Course Objectives : This course explores the history of the Mughal period in India. The Mughals introduced fundamental changes in the polity, economy, society, culture and religion of India. The Bahamani kingdom in the Deccan also split up into five smaller kingdoms during this period. In the course the students will be introduced to the important events, personalities and developments in India. They will know the policies followed by important rulers and will acquaint themselves with the general scenario prevalent in India during the period. They will understand how a syncretic culture developed in India during the period.

Course Outcomes:

After studying the course the student will be able to...

- 1) Know about the various sources for writing Medieval Indian history
- 2) Explain the role of rulers like Babar, Akbar, Chandbibi and Ibrahim Adilshah II
- 3) Gain knowledge about the administrative and revenue system
- 4) Describe the condition of Industry and trade
- 5) Explain important developments in religion, society and culture

Module I: Sources

- a) Literary: Akbarnama, Gulshan -i -Ibrahimi
- b) Archaeological (excluding monuments)
- c) Accounts of Foreign Travelers: Francois Bernier, Niccolo Manucci

Module II - Major Rulers

- a) Babar: Battle of Panipat and foundation of Mughal empire.
- b) Akbar: Rajput policy
- c) Chandbibi
- d) Ibrahim Adilshah II

Module III- Administration and Economy

- a) Administration: Central and Provincial
- b) Land Revenue: Akbar and Malik Ambar
- c) Industry and Trade

Module IV: Religion, Society and Culture

- a) Religious Policy: Akbar and Aurangzeb
- b) Society: Hindu and Muslim
- c) Architecture: Mughal and Adilshahi

Select Reference Books:

- Rizvi, S.A.A., The Wonder that was India, Part II, Rupa, Delhi, 2002
- Chitnis, K.N., Glimpses of Medieval Indian Ideas and Institutions, 1974
- Chitnis K. N. Socio- Economic Aspects of Medieval India, Poona, 1979

- Mehta, Jaswant Lal, Advanced Study in the History of Medieval India, Volume I to III, Sterling, New Delhi, 1981.
- Qureshi I.H., The Administration of the Moghal Empire, Delhi, Low Price, Publication 1990
- Raychaudhuri Tapan and Irfan Habib (eds.), Cambridge Economic History of India, Vol. I. C. 1200 C. 1750., Delhi, S. Chand, 1984
- J.F. Richards, The Mughal Empire, Delhi Foundation Books, 1993.
- Satish Chandra, History of Medieval India (800- 1700), Orient Longman, Hyderabad, 2007
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- Stein, Burton, Vijayanagara , Cambridge University Press, 1989
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- श. गो. कोलरकर: मध्ययुगीन भारताचा इतिहास (१२०६ ते १७०७) , श्री मंगेश प्रकाशन , १९९४
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- डब्ल्यू. एच. मूरलॅन्ड, अबकार कालीन हिंदुस्थान , ICHR, डायमंड प्रकाशन, पुणे, २००६
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- जदूनाथ सरकार, औरंगजेब, डायमंड प्रकाशन, पुणे, २००६

B.A. Part III
Semester VI , Course No: XIV. DSE E-188
Making of the Modern World (16th to 19th Century)

Course Objectives: This course deals with significant events in global history. The primary objective of the course is to introduce the students to the important events which have happened in the world in modern times. These events which were revolutionary in character had a profound impact on the making of the modern world. The students will be acquainted with the events of the Glorious revolution in England. They will understand the causes for the rise and spread of Nationalism and Imperialism. Moreover, they will know about some select important personalities who contributed to the making of the Modern World.

Course Outcomes:

After studying the course the student will be able to...

- 1) Know the causes and consequences of the Glorious revolution in England
- 2) Explain the concept of Nationalism and account for its rise and spread.
- 3) Describe the unification of Italy and Germany.
- 4) Give an account of the rise, growth and impact of Imperialism
- 5) Explain the significance of the Partition of Africa
- 6) Know the life and thoughts of important leaders like Metternich, Karl Marx and Abraham Lincoln

Module I: Glorious Revolution

- a) Causes
- b) Major events
- c) Consequences

Module II: Nationalism

- a) Causes for the rise and spread of Nationalism
- b) Unification of Italy and Germany
- c) Impact

Module III : Imperialism

- a) Causes for rise and growth of Imperialism
- b) Partition of Africa
- c) Impact on the world

Module IV: Important Personalities

- a) Metternich
- b) Karl Marx
- c) Abraham Lincoln

Select Reference books:

- Arun Bhattacharjee, World Revolutions, Ashish Publishing House, New Delhi, 1988
- L. Mukherjee, A Study of Modern Europe and the World, Calcutta, 2011
- David Thompson, Europe Since Napoleon, Penguin books, 1971
- T.C.W. Blanning, The Oxford History of Modern Europe, OUP, 2000

- C.J.H. Hayes, Modern Europe to 1870 , Macmillan, University of Michigan, 1953
- Desmond Seward, Metternich: The First European, Thistle Publishing, 2015
- मदन मारडीकर, आधुनिक युरोपचा इतिहास इ.स. १७८१ ते १९४५, विद्या बुक्स, २००५
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- कारखानीस सरला, कार्ल मार्क्स चरित्र आणि विचार, जयंत एस भट, १९६०
- बापट राम, कार्ल मार्क्सचा विचार, परामर्श प्रकाशन, १९८४

B.A. Part III
Semester VI, Course No. XV DSE E-189
Polity, Economy and Society under the Marathas

Course Objectives : The objective of the course is to explore the nature of the Maratha polity. It will acquaint the students with the economic and social condition prevalent under Maratha rule. The course will also introduce the students to the sources of Maratha history.

Course Outcomes:

After studying the course the student will be able to...

- 1) Know the various sources for writing the history of the Marathas
- 2) Explain the significant developments in the polity of the Marathas
- 3) Describe the economic conditions
- 4) Explain the social conditions.

Module I: Sources

- a. Importance of sources
- b. Indian Sources: Sanskrit, Marathi, Persian
- c. Foreign sources : Portuguese and English

Module II: Polity under the Marathas

- a. Concept of Kingship
- b. Asthpradhan Mandal
- c. Transfer of power – Chhatrapati to Peshwa, Peshwa to Karbhari

Module III: Economic condition

- a. Agrarian system – Land Revenue, Irrigation
- b. Industry
- c. Trade and Commerce

Module IV: Social condition

- a. Social Structure - Family , Untouchability, Vethbegar , Slavery.
- b. Condition of women and caste system
- c. Education and Festivals

Select Reference books :

- शेणोलीकर ह.श्री. महाराष्ट्र संस्कृती : घडण आणि विकास, मोघे प्रकाशन, कोल्हापूर, १९७२
- भावे. व. कृ. : शिवराज्य व शिवकाल, भावे प्रकाशन, पुणे, १९५९
- अत्रे. त्र्यं. ना. गाववाडा, राजहंस प्रकाशन प्रा लि., पुणे, २०१८
- वि. गो. खोबरेकर , महाराष्ट्रातील दप्तरखाने: वर्णन आणि तंत्र, १९६८
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- गवळी पा. आ., पेशवेकालीन गुलामगिरी व अस्पृश्यता, १९८१
- ओतुरकर, आर्. व्ही., पेशवेकालीन सामाजिक व आर्थिक जीवन, खंड १, भा. इ. सं. मं. , १९५०
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- गवळी, पा. आ., पेशवेकालीन महाराष्ट्र-संस्था व संकल्पना, कैलास पब्लिकेशन्स औरंगाबाद, २०००
- चापेकर, ना. गो., पेशवाईच्या सावलीत, पुणे, १९३७
- जोशी, एस्. एन्., मराठेकालीन समाजदर्शन, अ. वि. गृह प्रकाशन, पुणे, १९६०
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- Chitnis, K. N., Glimpses of Maratha Socio-Economic History, Atlanta Polishers, New Delhi, 1994
- Choksey, R. D., Economics Life in Bombay Deccan, Asia Publishing House, Mumbai 1955
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- Gune, V. T., The Judicial System of the Marathas, Deccan College, Pune, 1953
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- Mahajan, T. T., Industry, Trade and Commerce during the Peshwa period, Jaipur, 1980
- Kadam V.S. Maratha Confederacy: A study in its origin and development, Munshiram Manoharlal Publishers Pvt Limited , 1993
- Fukazawa, H – The Medieval Deccan: Peasants, Social Systems and States Sixteenth to Eighteenth Centuries, OUP, New Delhi, 1999

B.A. Part III
Semester VI , Course No. XVI DSE E-190
Methods and Applications of History

Course Objectives: This course has been designed to impart knowledge of the methods of history to the students. The students will understand the nature of archival sources. They will be introduced to the trends of local and oral history and will know about the tools of local history like Survey, Interview and Questionnaire. The students will be introduced to the technique of collecting data through oral interviews. The students will understand the concept of the museum and learn the basic principles of museology. Moreover, the course will introduce the students to the relevance of monumental heritage and its relationship with the discipline of history through the concept of Heritage Tourism

Course Outcomes:

After studying the course the student will be able to...

- 1) Understand the nature of archival sources
- 2) Gain conceptual clarity about recent trends in history.
- 3) Know about the application of history in museums.
- 4) Explain the concept and scope of heritage tourism.

(Note: The students should undertake Individual/ Group field projects for assignments in which they could take oral interviews / surveys/ regarding persons, events and local socio-political, economic and cultural developments related to local history. They should make audio recordings of the interviews and develop an archive of local oral history in the college department. These audio interviews would form an important source of local history)

Module I: Archival Sources

- a) Meaning, types, and importance of Archives
- b) Types of Records
- c) Concept of Digital Archives

Module II: Recent Trends in History

- a) Local History
- b) Oral History
- c) Tools of Local History (Survey, Interview, Questionnaire)
- d) Interview Technique

Module III: Museology

- a) Definition, Nature and Importance of Museum
- b) Types of Museums
- c) Methods of Collection, Conservation and Preservation Techniques of Objects

Module IV -Understanding Heritage Tourism

- a) Concept, Scope and Significance of Heritage Tourism
- b) Meaning and Historical Perspective of Tourism
- c) World Heritage Sites in India

Select Reference books:

- B. Shaik, Ali., History:Its Theory and Method, Macmillan India Ltd, Madras, 1978
- Chitnis, K. N., Research Methodology in History, Poona, 1979
- Bajaj, S. K., Research Methodology in History, Anmol Publications Pvt. Ltd., New Delhi, 1998
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- Sarkar, H., Museums and Protection of Monument and Antiquities in India, New Delhi, 1980
- Agarwal, O. P. Conservation of Manuscripts and Pantings of South East Asia, London, 1984
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- गायकवाड, आर. डी., सरदेसाई, बी. एन. आणि हनमाने, व्ही. एन. इतिहासलेखन पद्धत व ऐतिहासिक स्मारके यांचा अभ्यास, फडके प्रकाशन, कोल्हापूर, १९८८
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- सरदेसाई, बी. एन., इतिहासलेखनपद्धती, फडके प्रकाशन, कोल्हापूर, २००४
- राजदेकर, सुहास., इतिहासलेखनशास्त्र, विद्या प्रकाशन, नागपूर, १९९८
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- देशमुख, प्रशांत., इतिहासाचे तत्त्वज्ञान, विद्या बुक्स पब्लिशर्स, औरंगाबाद, २००५
- बेंद्रे, वा. सी., शिवशाहीचा चर्चात्मक इतिहास: साधन चिकित्सा, लोकवाङ्मय गृह, मुंबई, १९७६
- आठवले, सदाशिव., इतिहासाचे तत्त्वज्ञान, प्राज्ञपाठशाला, वाई, १९६७
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- बोरकर, रघुनाथ, संग्रहालयशास्त्र, पिंपळापुरे बुक, नागपूर, २००७
- खतीब, के. ए., पर्यटन भूगोल, मेहता पब्लिशिंग हाऊस, पुणे, २००६

- आगलावे, प्रदीप., सामाजिक संशोधन- पद्धती शास्त्र व तंत्र, साईनाथ प्रकाशन, नागपूर, २०१९
- देव, प्रभाकर., इतिहास ऐक शास्त्र, कल्पना प्रकाशन नांदेड, १९९७
- राऊत, गणेश (संप), दत्तक गावांचा इतिहास, खंड १, २, ३, पुणे विद्यापीठ, पुणे, १९९९
- वांबूरकर जास्वंदी, इतिहास लेखनातील नवे प्रवाह, डायमंड प्रकाशन, पुणे, २०१५

SHIVAJI UNIVERSITY, KOLHAPUR.



Accredited By NAAC with 'A' Grade

Revised Syllabus For

B.A. Part-III

Sociology

Syllabus to be implemented from

June, 2020 onwards.

Shivaji University, Kolhapur.

REVISED SYLLABUS OF B. A. III SOCIOLOGY

Choice Based Credit System (CBCS)

Semester – V, DSE – E66 SOCIOLOGY – VII

WESTERN SOCIOLOGICAL THINKERS

(June, 2020 onwards)

A) Course Objectives

Objective of teaching sociological Thinkers to undergraduate students is to enable them to apply theory to their own everyday life experiences.

This requires that students develop their sociological imagination and the capacity to read each situation sociologically and then to think about it theoretically.

To this end, it is imperative that sociological theory courses demonstrate the applicability of theory to students.

B) Course Learning Outcomes:

1. Understanding the grand foundational themes of sociology.
2. Application of theories and concepts from classical sociological theories to develop intellectual openness and curiosity.
3. Appreciation of the classical concepts and theories to develop awareness of the limits of current knowledge.

C) Course Content:

Module	Topic and Sub-Topic	Teaching Hours	Credits
Module -I	AUGUSTE COMTE A) Law of Three Stages B) Concept of Positivism. C) Social Statics and Social Dynamics.	15	1
Module -II	KARL MARX A) Dialectical Materialism B) Theory of Class Conflict C) Theory of Alienation	15	1

Module -III	EMILE DURKHEIM A) The Study of Social Facts B) Theory of Division of Labour C) Theory of Suicide	15	1
Module -IV	MAX WEBER A) The Ideal Type B) Theory of Social Action C) Types of Authority.	15	1

D) Teaching Learning Process:

1. The students are encouraged to read the original texts and the teacher often participates in the reading process. Thereby the teacher engages in active, rather than passive, pedagogy.
2. It is important that the classroom sessions, initiated either by the student or the teacher, would encourage teamwork and draw students towards learning, yet there are other means available now which add to that. The use of digital/ICT generated techniques (audio-visual aids).

E) Assessment Methods:

1. Class assignments/term papers, theme(s) of which are chosen following teacher student discussion, is one of the ways of assessing the subject and writing skill of the students.
2. Tutorial discussion oral presentations and viva-voce, short individual/team led field studies/projects and seminars/workshops are other modes of assessment. These are included in the Internal Assessment (IA) system.
3. Mid-semester examination is another mode of assessment. Here again, the topic(s) on which the students are to be examined are chosen through teacher-student consultation. Mid-semester examination tests the students on the grasp of the topic(s) in particular and the discipline in general.
4. The end-semester examination is conducted by the university and the student is tested and evaluated on the basis of the entire paper (syllabus). S/he is expected to have a full knowledge of the paper and prescribed readings.

NOTE: Visit to University Library

F) REFERENCES:

1. Abraham Francis Modern sociological Theory, Delhi Oxford University press,1982
2. Abraham Francis 'Sociological Thought', Madras Macmillan,1991
3. Aron Raymond Main Currents In Sociological Thought,Vol.I & II
4. Coser A.Lewis 'Masters of Sociological Thought' Rawat publications Jaipur 1996
5. Delaney Tim 'Contemporary Social Theory,Investigation and Application'
6. Haralambos & Holborn Sociology : Themes and Perspectives Published by
Harper Collins Publishers Ltd.London W6 8JB 2008
7. Ritzer George Classical Sociological Theory, 4th edition,Nework, Mc-grawhill
publication. 1996.

REVISED SYLLABUS OF B. A. III SOCIOLOGY

Choice Based Credit System (CBCS)

Semester – V, DSE – E67 SOCIOLOGY– VIII

METHODS OF SOCIAL RESEARCH (Part-I)

(June, 2020 onwards)

A) Course Objective:

1. The course is a general introduction to the methodologies of sociological research. It will provide the student with elementary knowledge of the complexities and philosophical underpinnings of research.

B) Course Learning Outcomes:

1. Students are introduced to the concept of conducting research, which is inclusive of formulating research designs, methods and analysis of data. Some knowledge of elementary statistics is also provided to the students to acquaint them with quantification of data.

2. The thrust of the course is on empirical reasoning, understanding and analysis of social reality, which is integral to the concepts of quantitative research. Students learn to differentiate between qualitative and quantitative aspects of research in terms of collection and subsequent analysis of data.

3. Through the competing theoretical perspectives and methodologies, students are able to understand that social reality is multi-faceted, heterogeneous and dynamic in nature.

4. By imparting the knowledge of theory and praxis of research, students are prepared to arrive at a critical understanding of the course. It also equips them with necessary skills for employment in any social research organization.

C) Course Content:

Module	Topic and Sub- Topic	Teaching Hours	Credits
Module-1	Introduction to social Research a. Philosophy of social science b. Meaning and objectives of social research c. Scientific Steps in Social Research d. Relation between theory and fact	15	01
Module -2	Research Design a. Meaning and Nature of Research Design b. Explorative c. Descriptive d. Experimental	15	01
Module -3	Basic Elements of Social Research a. Concepts-meaning and characteristics		

	b. Variable- meaning and Types c. Hypothesis- meaning and Sources	15	01
Module -4	Modes of Enquiry a. Quantitative Research : meaning and characteristics b. Qualitative Research: meaning and characteristics c. Importance of Quantitative and Qualitative Research	15	01

D) Teaching - learning process:

- a. A research methods course will require a robust class room discussion on various aspects of the course leading to a clearer understanding of concepts and research methods and the production of knowledge.
- b. Interactive classroom sessions contribute to the development of group skills including listening, brainstorming, communicating and negotiating with peers.

E) Assessment Methods: Assessment for this course will be based on written assignments, projects, project designs and presentations.

NOTE: Organise One Day Workshop on Research Methodology

F) Reference Book :

Durkheim, E. 1958, The Rules of Sociological Method, New York: The Free Press

Weber, Max. 1949, The Methodology of the Social Sciences, New York: The Free Press

Radcliffe-Brown, A.R. 1958, Methods in Social Anthropology, Delhi: Asia Publishing Corporation

Beiteille, A. 2002, Sociology: Essays on Approach and Method, New Delhi

Goode, W. E. and P. K. Hatt. 1952. Methods in Social Research. New York: McGraw Hill.

Srinivas, M.N. et al 2002(reprint), The Fieldworker and the Field: Problems and Challenges in Sociological Investigation, New Delhi

Bryman, Alan. 2004, Quantity and Quality in Social Research, New York: Routledge

Merton, R.K. 1972, Social Theory & Social Structure, Delhi: Arvind Publishing House

REVISED SYLLABUS OF B. A. III SOCIOLOGY

Choice Based Credit System (CBCS)

Semester – V, DSE – E68 SOCIOLOGY – IX

POLITICAL SOCIOLOGY

(June, 2020 onwards)

A) Course Objective:

This course aims to acquaint the students with the major concepts, theoretical approaches and perspectives of political sociology. It seeks to prepare the students to apply these concepts and approaches to the understanding of the nature of the political processes and institutions in India. The course also exposes the students to the emerging perspective on the polity-society relationship in contemporary times.

B) Course Learning Outcomes:

1. An ability to comprehend the embeddedness of political and the social in each other.
2. Familiarity with different theoretical and conceptual issues in political sociology and a capacity to use them to grasp political phenomena in a cross-cultural and comparative perspective
3. Be able to understand and appreciate the diversity of ways in which politics operates historically and spatially to generate a more expansive notion of the realm of the political.
4. Be able to understand the relationship between state and society in shaping politics in India both historically and analytically.
5. Be able to generate hypotheses and research questions within the theoretical perspectives and ethnographic contexts in political sociology.

C) Course Content:

	Topic and Sub- Topic	Teaching Hours	Credits
Module - I	Nature of Political Sociology A) Definition and Subject Matter of Political Sociology B) Emergence of Political Sociology C) Importance of Political Sociology	15	1

Module - II	Basic Concepts in Political Sociology A) Power: Meaning and Nature B) State: Meaning and Nature C) Civil Society: Meaning and Nature	15	1
Module - III	Study of Perspectives to Political Sociology A) Perspectives on Power: Weberian, Marxist and Ambedkarian B) Perspectives on State: Liberal, Pluralist, Power-elite, Post-modernist	15	1
Module - IV	Political parties in India A) Political parties: characteristics and social composition. B) Pressure groups and Interest groups: characteristics and political significance. C) Major Political Parties and Their Principles	15	1

D) Teaching-Learning Process:

Teaching learning process in this paper has to be interactive and reflective as majority of students are more often disinterested in questions concerning the political. Teachers should encourage students to read the daily newspaper and peruse electronic journals which would animate the conceptual and analytical aspects of the course with real socio-political events from the students' immediate contexts. Use of audio-visual resources, mainly documentaries will be made an integral part of learning in this course.

E) Assessment Methods:

Assessment in this paper will be in the form of written assignments, book reviews, film reviews, class presentations, projects, and class test.

F) Keywords:

Power, Authority, Resistance, Politics, Elite, State, Democracy, Citizenship, Rights, Para-Political Systems, Post-Colonialism

NOTE: 1) Visit to Vidhansabha / Vidhanparishad

2) Visit to any Gram Sachivalaya / Corporation

G) Reference Book(s)

1. Bendix, R. and S. M. Lipset (Eds.). *Class, Status and Power*. London: RKP, 1966.
2. Bhargava, R. *Secularism and its Critics*. New Delhi: OUP, 1999.
3. Bottomore, T. *Elites and Society*. Harmondsworth: Penguin, 1966.
4. Chakravarty, A. *Contradiction and Change*. Delhi: OUP, 1975.
5. Dahl, R. *Who Governs?* New Haven: Yale University P, 1961.
6. Desai, A.R. *State and Society in India: Essays in Dissent*. Bombay: Popular Publication, 2000
7. Gerth, H.H. and C.W. Mills (Eds.). *From Max Weber: Essays in Sociology*. London: RKP, 1948.
8. Key, V.O. *Politics, Parties and Pressure Groups*. NY: Crowell, 1964.
9. Kohli, A. *India's Democracy: An Analysis of Changing State-Society Relations*. Princeton: Princeton University P, 1990.
10. Kohli, A. *The State and Poverty in India: The Politics of Reform*. Cambridge: Cambridge University P, 1999.
11. Kothari, R. *Caste in Indian Politics*. Delhi: Orient Blackswan, 2008.
12. Laclau, E. *Politics and Ideology in Marxist Theory*. London: Verso, 2012.
13. Miller, D. *On Nationality*. Oxford: Clarendon Press, 1995.
14. Mills, C.W. *The Power Elite*. NY: OUP, 2000.
15. Nash, K. *Contemporary Political Sociology*. Massachusetts: Blackwell Publishers, 2000.
16. Robinson, M. S. *Local Politics: the Law of the Fishes*. Delhi: OUP, 1988.
17. Runciman, W.G. *Social Science and Political Theory*. Cambridge: CUP, 1969.
18. Taylor, G. *The New Political Sociology: Power, Ideology and Identity in an Age of Complexity*. London: Palgrave Macmillan, 2010.
19. Vora, R. and S. Palshikar (Ed.) *Indian Democracy*, Delhi: Sage, 2004.
20. Weber, M. *Economy and Society*. Berkeley: University of California P, 1978.

REVISED SYLLABUS OF B. A. III SOCIOLOGY

Choice Based Credit System (CBCS)

Semester – V, DSE – E69 - SOCIOLOGY – X

HUMAN RIGHTS

(June 2020 onwards)

A) OBJECTIVES:-

- 1.To Provide the conceptual understanding about the human rights.
2. To understand the nature and role of Human Rights in India.
3. To understand violation of Human Rights in India.

B) Course Learning Outcomes:

After completion of program students will able to-

- 1)Conceptual understanding about the Human Rights
- 2)Identify issues and problems relating to the realization of human rights
- 3)Understand the nature & role of human rights in India
- 4) Contribute to the resolution of human rights issues and problems
- 5)Educate the society about the human rights and duties in order to create responsible citizenry

C) Course Content:

	Topic and Sub- Topic	Teaching Hours	Credits
Model - I	HUMAN RIGHTS A) Meaning and Characteristics of Human Rights B) History of Human Rights in India (Ancient Period to After Independent Period) C) Perspectives of Human Rights. (Sociological Perspective and Modern Perspectives -Jeromi J.Shestoak)	15	1
Model - II	UNITED NATIONS ORGANIZATIONS AND HUMAN RIGHTS A)Universal Declaration of Human Rights,1948 B)International Covenant on Economic ,Social and cultural Rights,1966 C) International Covenant on civil and Political Rights,1966	15	1
Model - III	HUMAN RIGHTS IN INDIA A)Indian Constitutions and Human Rights B) National Human Rights Commission in India (Structure and Role) C) Function of National Scheduled Castes and Scheduled Tribe commission in India	15	1
Model - IV	VIOLATION OF HUMAN RIGHTS IN INDIA A)Human Trafficking B)Mob Lynching C)Honor Killing	15	1

D) Teaching-Learning Process:

Teaching learning process in this paper has to be interactive and reflective as majority of students are more often disinterested in questions concerning the human rights. Teachers should encourage students to read the daily newspaper and peruse electronic journals which would animate the conceptual and analytical aspects of the course with real sociological Perspective events from the students' immediate contexts. Use of audio-visual resources, mainly documentaries will be made an integral part of learning in this course.

E) Assessment Methods:

Assessment in this paper will be in the form of written assignments, book reviews, film reviews, class presentations, projects, and class test, Seminar .

F) Keywords:

Human Rights, Castes ,Tribe ,Political Rights, Violation ,Human Trafficking
Moab Lynching, Honor Killing
S

NOTE: 1) Visit to Old Age Home, Orphanage, etc

G) REFERENCE :

Anthony M.J	Social action through courts ,ISI ,New Delhi ,1997.
Bhatia K.L	Law and social change Towards 21 st Century, Deep and Deep ,New Delhi ,1994
Bose A.B	Social Security for the old myth and reality ,Center for Public& Governance Institute of applied Manpower Research by Concept Pub. Company .New Delhi,2006
Crampton Helen M.	Social welfare :Institution and Process,Random and Keiser Keneth K. House Inc ,New York,1970
	Social Policy and Social Development in India
Kulkarni P.D	Social Policy and social Development in India,ASSWI,Madras,1979
Pathak s.	Social;An Evolutionary and Development Perspective,Welfare McMillan ,Delhi,1981.
Patil	The Economics of Social Welfare in India, Somayya, Bombay,1978
कोतापल्ले लक्ष्मण	भारतातील सामाजिक कल्याण, प्रशासन आणि समाज कार्य, विद्या प्रकाशन, औरंगाबाद
जी.एल.शर्मा	सामाजिक मुद्दे, रावत पब्लिकेशन्स, २०१५
य.च.म.मु.वि.नाशिक	मानवी हक्क आणि भारतीय राज्यघटना
य.च.म.मु.वि.नाशिक	मानवी हक्क आणि अंमलबजावणी यंत्रणा

REVISED SYLLABUS OF B. A. III SOCIOLOGY

Choice Based Credit System (CBCS)

Semester – V, DSE – E70 SOCIOLOGY – XI

SOCIOLOGY OF RELIGION

(June, 2020 onwards)

A) COURSE OBJECTIVE

1. This course exposes students to the distinctiveness of the sociological approach to the study of religion.
2. The individual and the group encounter religion and/or religious phenomenon in myriad ways be it through custom, ritual, beliefs or other practices. Students will be familiarized with the basic theoretical and methodological perspectives on the study of religion and also exposed to ethnographic texts on various aspects of religious phenomenon.
3. The last section of the course touches upon some aspects of religion in contemporary times such as secularization and multiculturalism.

B) COURSE LEARNING OUTCOMES:

1. Students will be acquainted with representative texts that symbolize the development of knowledge in the field of Sociology of Religion. They will be able to identify different theories, approaches and concepts that make up the study of religion, distinguish between them and also use terms specific to the field in specific context.
2. Students will be able to make a link between texts and paraphrase their arguments and use these to communicate their ideas in research papers, projects and presentations.
3. By encompassing contemporary developments the course enables students to think about linkages between religion and society at various levels.

C) Course Content:

Module	Topic and Sub-Topic	Teaching Hours	Credits
Module -I	Understanding Religion A) Sociology of Religion: Meaning , Scope and Subject matter B) Religion : Definition and Characteristics C) Basic Concepts in Religion 1) Belief and Rituals 2) The Sacred and Profane	15	1
Module -II	Perspectives to Study of Religion A) Perspectives of Religion: Durkheim and Weber B) Perspectives of Religion in India: Mahatma Phule and Dr. B. R. Ambedkar	15	1

Module -III	Religions in India A) Hinduism, Islam B) Buddhism, Christianity C) Jainism, Sikhism D) Satya Dharma and Shiv Dharm	15	1
Module -IV	Religion and Social Change A) Socio- Religious Movements B) Religion and Violence C) Religion and Commercialization D) Secularism and National Integration	15	1

D)Teaching -Learning Process:

Teaching learning process in this paper has to be interactive and reflective. Teacher should encourage students to utilize print and electronic media for acquiring knowledge regarding recent status and trends of religion.

E) Assessment Methods:

Assessment in this paper will be from of written assignments, seminars and class test.

F)Key Words;

Religious Belief, Rituals, Sacred, Profane, Magic, Violence, Secularism, National Integration.

NOTE: Visit to Any Religious place and Understand its Structure and Functioning

G)Reference Books

1. Baird, Robert D. "Religion in Modern India". Manohar, Delhi, 1995.
2. Madan, T.N.(Ed), Religion in India", Oxford University Press, New Delhi, 1992.
3. Muzumdar, H.T. "India's Religious Heritage", Allied New Delhi, 1996.
4. Roberts, Keith A. "Religion in Sociological Perspective", Donsey Press, New Delhi, 1984.
5. Prabhu, Pandharinath H. "Hindu Social organization: A Study in Socio-Psychological and ideological Foundations", Popular Prakashan, Bombay, 1963.
6. Dsouza, Leela. "Sociology of Religion".
7. Pias, Richard. "Sociology of Religion".
8. Salve, R.N. "Buddhism and Education", Shruti, Jaipur, 2008.
9. डॉ. विधाधार पुंडलिक .” धर्माचे समाजशास्त्र” कॉन्टीनेटल प्रकाशन २००३,
10. डॉ. प्रदीप आगलावे . “ समाजशास्त्र संकल्पना आणि सिद्धांत “ साईनाथ प्रकाशन नागपूर २००९
11. डॉ. दा . धो . काचोळे . “ भारतीय समाजरचना “ कैलाश प्रकाशन औरंगाबाद १९९८
12. डॉ. बी . एम . कऱ्हाडे “ समाजशास्त्र मुलभूत संकल्पना “ पिंपळापुरे प्रकाशन , नागपूर २०११
13. मंगला आठलेकर “धर्म आणि हिंसा “राजहंस प्रकाशन पुणे २०१७
14. डॉ. ज्योती डोईफोडे “ भारतीय समाज “विद्या प्रकाशन औरंगाबाद

REVISED SYLLABUS OF B. A. III SOCIOLOGY

Choice Based Credit System (CBCS)

Semester – VI, DSE – E191 SOCIOLOGY – XII

INDIAN SOCIOLOGICAL THINKERS

(June 2020 onwards)

A) Course Objectives

Objective of teaching Indian Sociological Thinkers to undergraduate students is to enable them to apply theory to their own Indian Social life experiences. This requires that students develop their sociological imagination and the capacity to read each situation sociologically and then to think about it theoretically. To this end, it is imperative that sociological theory courses demonstrate the

applicability of theory to students.

B) Learning Outcomes:

1. Understanding the characteristics and dynamics of the social world, and how postclassical sociologists attempt to understand the social world.
2. Appreciating the relevance and limits of the contemporary theories or theoretical approaches to make sense of social reality.
3. Understanding the basic methodological approaches of the thinkers, through some original texts and their role in building sociological knowledge.

C) Course Content:

Module	Topic and Sub-Topic	Teaching Hours	Credits
Module -I	G.S.GHURYE A) Ideas on National Unity and Interaction B) Study on Caste C) Study on Indian Tribes	15	1
Module -II	A.R.DESAI A) Study of Village Structure in India B) Study of Indian Nationalism C) Analysis of Indian Society through Marxian Perspective	15	1

Module -III	M. N. SRINIVAS A) Concept of Sanskritization B) Concept of Westernization C) Concept of Dominant Caste	15	1
Module -IV	IRAWATI KARVE A) Concept of Kinship Relations B) Hindu Culture: An Interpretation C) Views on Maharashtra	15	1

D)Teaching learning process:

The students are encouraged to read the original texts and the teacher often participates in the reading process. Thereby the teacher engages in active, rather than passive, pedagogy.

It is important that the classroom sessions, initiated either by the student or the teacher, would encourage teamwork or draw students towards learning, yet there are other means available now which add to that. The use of digital/ICT generated techniques (audio-visual aids).

E)Assessment Methods:

1. Class assignments/term papers, theme(s) of which are chosen following teacherstudent discussion, is one of the ways of assessing the subject and writing skill of the students.
2. Tutorial discussion oral presentations and viva-voce, short individual/team led field studies/projects and seminars/workshops are other modes of assessment. These are included in the Internal Assessment (IA) system.
3. Mid-semester examination is another mode of assessment. Here again, the topic(s) on which the students are to be examined are chosen through teacher-student consultation. Mid-semester examination tests the students on the grasp of the topic(s) in particular and the discipline ingeneral.
4. The end-semester examination is conducted by the university and the student is tested and evaluated on the basis of the entire paper (syllabus). S/he is expected to have a full knowledge of the paper and prescribed readings.

NOTE: Visit to University Library

F) REFERENCES:

1. Nagala B.K. 'Indian Sociological Thought' '
2. V.S.Upadhyay and Gaya Pandey 'History of Anthropological Thought'
3. Narendra K. Singh 'Theory and Ideology in Indian Sociology'
4. T. K. Ommen and P.N. Mukharjee 'Indian Society: Reflections and Introspections'
5. A.R. Desai 'Social Background Of Indian Nationalism'
6. A.R. Desai 'Rural India In Transition'
7. T. N. Madan 'Western Sociologists on Indian Society'
8. Yogendra Singh 'Indian Sociology : Social Conditioning and Emerging Concerns'
9. S.K. Pramanik 'Sociology of G.S. Ghurye'
10. Devdas Pillai 'Indian Sociology Through Ghurye : A Dictionary'
11. A.R. Momin 'The Legacy Of G.S. Ghurye'
12. M.N. Srinivas 'Social Change In Modern India'

REVISED SYLLABUS OF B. A. III SOCIOLOGY

Choice Based Credit System (CBCS)

Semester – VI, DSE – E192 SOCIOLOGY – XIII

METHODS OF SOCIAL RESEARCH (Part-II)

(June, 2020 onwards)

A) Course Objectives

1. The course provides an introductory, yet comprehensive engagement with social research.
2. Through theoretical and practical knowledge students are acquainted with the different stages of the research process like creation of research design, methods of data collection and analysis.
3. The imparted knowledge and training will enable students to develop a sound understanding of both quantitative and qualitative research.

B) Course Learning Outcomes:

1. Students are introduced to the concept of conducting research, which is inclusive of formulating research designs, methods and analysis of data. Some knowledge of elementary statistics is also provided to the students to acquaint them with quantification of data.
 2. The thrust of the course is on empirical reasoning, understanding and analysis of social reality, which is integral to the concepts of quantitative research. Students learn to differentiate between qualitative and quantitative aspects of research in terms of collection and subsequent analysis of data.
 3. Through the competing theoretical perspectives and methodologies, students are able to understand that social reality is multi-faceted, heterogeneous and dynamic in nature.
 4. By imparting the knowledge of theory and praxis of research, students are prepared to arrive at a critical understanding of the course. It also equips them with necessary skills for employment in any social research organization.
3. Periodic tests/mid-semester examination of the covered syllabus is also undertaken by the students during the academic session. End-semester examination is conducted by the University of Shivaji.

C) Course Content:

Module	Topic and Sub- Topic	Teaching Hours	Credits
Module -1	Sampling and Data collection a. Meaning and Purpose of Sampling b. Types of sampling c. Advantages and Limitation of Sampling d. Primary and secondary Data collection	15	01
Module -2	Observation a. Observation: Meaning and characteristics b. Types of Observation c. Advantages and limitations of observation	15	01

Module -3	Interview and Questionnaire a. Interview-meaning and Types b. Advantages and limitations of interview c. Questionnaire- meaning and Types d. Advantages and limitations of Questionnaire	15	01
Module -4	Data Analysis and Report Writing a. Use of computer in data analysis b. Statistical methods c. Report Writing	15	01

D) Teaching-Learning Process:

1. Classroom lectures interlink the sociological theories previously taught with the methods and techniques of data collection. Students are encouraged to construct questionnaires and conduct interviews, use technology like online surveys to develop practical research skills.
2. The use of statistics enables the students to understand both qualitative and quantitative aspects of social research.
3. Alternative pedagogical techniques like outdoor learning through field trips and research projects, audio-visual technology in classrooms provides them with both research related knowledge and experience.

E) Assessment Methods:

1. Tutorials are given regularly to students after the completion of a topic. The objective is to assess the understanding of the student regarding the covered topic.
2. Students are expected to submit individual/team project reports, along with making oral presentations of the same in class.

**NOTE: Organise Guest Lecture/Seminar on Social Research
Methodology**

F)Books for References:

- Ahuja Ram:** Research Methods, Rawat Publication, Jaipur 2015
- Ghosh B.N.:** Scientific Methods and Social Research, Sterling Publishers, New Delhi, 1982
- Kothari C.R.:** Research methodology: Methods and Techniques, Wiely Eastern, New Delhi, 1992
- Lal Das D.K:** Designs of social Research, Rawat Publication, Jaipur, 2008
- Young P.V.:** Scientific Social Surveys and Research, Prentice -Hall of India, New Delhi, Fourth edition fifteen Reprint, 2003

संदर्भा साठी ग्रंथ (मराठी)

आगलावे प्रदीप : संशोधन पद्धती: शास्त्र व तंत्रे, विद्या प्रकाशन, नागपूर
घाटोळे.ना.: सामाजशास्त्रीयसंशोधन -पद्धती आणि तत्त्वे, मंगेश प्रकाशन
नागपूर,

बोधनकर सुधीर : सामाजिक संशोधन पद्धती,साईनाथ प्रकाशन,नागपूर
रानडे पुष्पा : प्राथमिक सांख्यिकी आणि संशोधन पद्धती,डायमंड प्रकाशन, पुणे,
२०१५

REVISED SYLLABUS OF B. A. III SOCIOLOGY

Choice Based Credit System (CBCS)

Semester – VI, DSE – E193 SOCIOLOGY – XIV

SOCIAL ANTHROPOLOGY

(June, 2020 onwards)

-
1. To provide the conceptual understanding about anthropology
 2. To understand the social aspects of tribal's in India.

	Topic	Teaching Hours	Credits
Model - I	INTRODUCTION TO SOCIAL ANTHROPOLOGY A) Social Anthropology: Meaning and Characteristics B) Relation Between Social Anthropology and Sociology C) Field work Method and its Characteristics D) Importance of Social Anthropology	15	1
Model – II	TRIBAL SOCIETY IN INDIA A) Tribal Society : meaning and Characteristics B) Social life : Family ,and Marriage - Characteristics C) Economic Life : Characteristics D) Religious Life : Beliefs and practices	15	1
Model – III	TRIBAL PROBLEMS A) Poverty and Indebtedness B) Land Alienation C) Illiteracy and Exploitation D) Religious Crisis	15	1
Model - IV	Tribal Community in Maharashtra: Pardhi A) Socio-Cultural life : Tradition and Change B) Economic life : Tradition and Change C) Religious life : Tradition and Change D) Social Movements for Development of Pardhi Community	15	1

NOTE: Visit to Any Tribal and Nomadic Tribe Community

REFERENCE:-

Vidyarthi L.P. Tribal Culture of India, Concept Publishers, New Delhi, 1976.
E.E. Evans Pritchard Social Anthropology and Other Essays, The free Press, New York, 1962.
Mujumdar D.N. and Madam T.N An Introduction to Social Anthropology, Asia Publishing House, Bombay, 1973.
संगवे विलास सामाजिक मानवशास्त्र, पॉप्युलर प्रकाशन, मुंबई, १९६९.
नाडगोडे गुरुनाथ भारतीय आदिवासी, कॉन्टिनेंटल प्रकाशन, पुणे, १९९८.
संगवे विलास आदिवासींचे सामाजिक जीवन ए पॉप्युलर प्रकाशन, मुंबई
K. S. Tribal Situation in India, Indian Institute of Advanced Study, Simla, 1972.
S.L. Doshi & P. C. Jain
Social Anthropology Rawat Publication, 2001.
Mane Lximan, Vimuktayan, Yashvantrav chavan prakashan, Satara 1994 (Marathi)
Prabhune Girish, Pardhi, Rajhans Prakashan, Pune. 2006 (Marathi)

Pawar Deepak, Pardhi Samajache Antrang,
Shree Sainath Prakashan, Nagapur. 2014 (Marathi)
Chavan Ramnath, Bhatakya vimuktantanchi Jatpanchayat, Deshmukh ani company
Pune. 2006 (Marathi)

Journals:

i) हाकारा (Hakara)
ii) Social Change (New Delhi)
iii) Man in India (Ranchi)
iv) Tribal research bulletin (Marathi and English)
Tribal Research Institute Pune.
v) Human Ecology : Journal of manenvironmental relationship Kamalraj,
Enterprises Delhi.
Ritzer George Sociological Theory, Tata Mcgraw Hill, 1996
Morrison, Ken Marx,
Durkheim, Weber
Formation of Modern Social Thoughts, Sage London 1995.

REVISED SYLLABUS OF B. A. III SOCIOLOGY

Choice Based Credit System (CBCS)

Semester – VI, DSE – E194 SOCIOLOGY – XV

RURAL SOCIOLOGY

(June, 2020 onwards)

A) Course Objectives:

1. To communicate Agriculture as the foundational material practices at the heart of the formation of social collectivities and make sense of South Asian societies agrarian formations.
2. To familiarize students with rural situation past and present with the help of necessary theories and categories.
3. To make sense of rural communities, their structure, transformation and trials and tribulations in modern world.
4. To introduce students to the rich legacy of theoretical and empirical work in rural sociology and its continued relevance.

A) Course Learning Outcomes:

1. An empathy for and ability to engage rural communities as living societies and understand grasp they condition as human condition.
2. An appreciation of rural world and familiarity with the trajectory of theoretical conversation on rural issues and their social, political and policy implications.
3. An understating of emerging as well as enduring issues of concern in Indian rural society
4. To be ready for a range of academic and professional roles that may require a knowledge of rural societies.

C) Course Content:

Module	Topic and Sub- Topic	Teaching Hours	Credits
Module -1	Introduction to Rural Sociology A) Meaning of Rural Sociology B) Origin, Scope and Subject Matter of Rural Sociology C) Importance of Rural Sociology with the reference of India	15	01
Module-2	Indian Rural Community A) Village studies in India B) Classification of Indian Villages C) Changing Nature of Rural Community in India	15	01

Module -3	Social Institutions in Rural Society A) Marriage, Family and kinship Institution B) Caste and Balutedari C) Political life : structure and change	15	01
Module-4	Changing Indian Agrarian Society A) Rural Cooperative and Rural Industry B) Markets, Land Reforms and Green Revolution C) The Agrarian Issues	15	01

D) Teaching Learning Process:

The teaching learning for this course involves lectures, tutorial conversations around contemporary issues of concern for agrarian societies and extensive usage of imaginative literature and films that makes the lived world of peasantry and rural communities come alive to the students.

E) Assessment Methods:

Recommended evaluation would be an assignment that tests the conceptual grasp of the students and a project that prompts students to engage in research about a historical or contemporary rural issue.

NOTE: Visit to village and Grampanchayat and Understand its Structure and Rural Development Programs

F) References:(English)

Beteille Andre: Caste, Class and Power, Oxford University press, (India), New Delhi, (2012).

Beteille Andre: 'The Study of Agrarian Systems: An Anthropological Approach', from Marxism and Class Analysis, New Delhi: Oxford. 2007.

Bandopadhyay : 'Reflections on Land Reform in India since Independence' from T. V. Satyamurthy (Ed.) Industry and Agriculture in India Since Independence, Delhi: Oxford University Press.

Desai A.R.: Rural Sociology in India Popular Prakashan, Bombay, (1969 reprint 2009) .

Dhanagare, D. N.: 'Green Revolution and Social Inequalities in Rural India' from, Economic and Political Weekly, Vol. 22, No. 19/21, Annual Number (May, 1987),

Dube SC: Indian Village, Routledge, New York, (Second edition 2018)

Mukherjee Ramkrishna: The Dynamics of a Rural Society, Akademie -Verlag, Berlin, (1957)

Oommen T.K.: Green Revolution and Agrarian Conflicts, Economics and Political weekly, Vol.-6, Issue-26 (1971)

Shah, A.M.: Changes in the Indian Family: An Examination of Some Assumptions', in The Family in India: Critical Essays, New Delhi: Orient Longman (1998)

Srinivas M.N.: India: Social Structure, Hindustan Publishing Corporation, Delhi (1980)

मराठी ग्रंथ

जयपूर(२००९).

REVISED SYLLABUS OF B. A. III SOCIOLOGY

Choice Based Credit System (CBCS)

Semester – VI, DSE – E195 SOCIOLOGY – XVI

URBAN SOCIOLOGY

(June,2020 onwards)

A)Course Objectives:

1. Urbanization is an important aspect of modern society. This course is will provide an Exposure to key theoretical perspectives for understanding urban phenomena in historical and contemporary contexts.
2. It also reflects on vital concerns of urban living while narrating the subjective experiences of urban communities. With case studies from India and other parts of the world this course will help students understand and relate to the complexities of urban living.
3. The course seeks to evolve critical thinking and develop a policy perspective on the urban.

B)Course Learning Outcomes:

1. To appreciate the significance of the city and the process of urbanization and its Consequences across the globe, through cross disciplinary texts and ethnographic studies.
2. To understand the urban in the historical as well as modern contexts - the idea of Urbanism and urban space and the intersections in these of institutions, processes and Identities. This is to be achieved by exposing students to critical theoretical debates which help them to gain a deeper understanding of city life and urban environment which can Also help them understand their own social environment better.
3. To learn about key urban processes such as migration, displacement and urban slums, as

Well as critical contemporary issues such as resettlement and rehabilitation and also engage in issues of public policy, urban transformation and change. Knowledge of such Themes will help students pursue further studies in academic areas such as development and also engage in research on public policy, urban transformation and change.

4. To develop critical thinking and a reflective perspective through exposure to multicultural Thought; to enhance disciplinary knowledge, research-related skills and develop a problem-solving competence.

C) Course Content:

Module	Topic and Sub- Topic	Teaching Hours	Credits
Module I	Introduction to Urban Sociology A) Definition, Meaning & Nature of Urban Sociology. B) Subject Matter of Urban Sociology. C) Importance of the Study of Urban Sociology	15	01
Module II	Major Concepts in Urban Sociology. A)Urban Community. B)Urbanism. C)Rural- Urban differences- continuum	15	01
Module III	Process of Urbanization A) Meaning and Nature of Urbanization	15	01

	B) Causes of Urbanization. C) Consequences of Urbanization		
Module IV	Urban Social Structure. A) Urban Family : Characteristics and Change B) Urban Social stratification: Caste & Class. C) Urban Occupations: Characteristics and Change	15	01

D) Teaching Learning Process:

The sociology of the urban is simultaneously theoretical and yet deeply experiential. The teaching learning for this course necessarily has to be deliberative, drawing from the multicultural exposure to city living. There will be an emphasis on blended learning supported by debates and discussions. Classroom lectures shall be supplemented by power point presentations and film screenings on various contemporary urban issues. Invited lectures by policy makers, activists, practitioners and other stake holders would be integral to the curriculum. Students would be encouraged to set out into the field to grasp issues with greater clarity. City walks will be encouraged to enrich the experiential understanding of the urban. Learning would also involve a multi-disciplinary perspective, collaborating with other social sciences that engage with the urban as well as the disciplines of urban planning and architecture, in order to enhance problem solving and critical thinking ability.

E) Assessment Methods:

Assessment for this paper would be in the form of tests, written assignments, projects' reports and presentations.

F) Key Words:

Urban, Urbanism, Urbanisation, City, Migration, Settlement, Space, Ecology.

NOTE: 1) Visit to any Slum Area in City and Understand their Problems

2) Visit to any City and Observe its Ecosystem

G) References:-

1. Wilson R.A & Schlutz David : Urban Sociology, Prentice Hall, England, 1978
2. Rao M.S.A. : Urban Sociology in India, Orient Longman
New Delhi, 1974.
3. D Souza Alfred : The Indian city: Poverty Ecology and Urban
Development, Manohar, New Delhi, 1978.
4. Dube K.K. and Singh A.K. : Urban Environment in India, Inter India, New Delhi
1980.
5. Mitra, Ashok et.al. : Indian cities, abhinav, New Delhi, 1980.
6. Berge E.E. : Urban Sociology, Free Press, New York, 1962
7. Bose, Ashish : Studies in India's Urbanisation, Tata McGraw Hill,
New Delhi, 1973
8. Singh Pramod : Ecology and Urban India, Vol.II Ashish, New
Delhi, 1987.
9. Urban Sociology : Rajendra K. Sharma Atlantic Publishers &
Distributors, New Delhi, 1997
10. Urbanization : Concept & Growth: A.K. Shrivastava,
H.K. Publishers and Distributors, New Delhi, 1989

B.A. Sociology Outcome

Sociology is the most contemporary and versatile of the Social Sciences. It trains students to grasp social structures, understand social processes map the dynamics of social change, decipher social interactions and make sense of individual and collective experiences in their social, historical and cultural context. Sociology is at once critical and constructive; conceptual and applied; theoretical and empirical. It is a science that cohabits comfortably with literary flair, speculative sensibility, historical imagination and statistical rigour. It is incessantly reflexive about its methods, demanding about its research techniques and standards of evidence. Sociology is ever so subtle about the conceptual distinctions it draws and zealous about its disciplinary boundaries and identity. At the same time, sociology is the most open and interdisciplinary of social sciences. The Pursuit of sociology is a systematic effort at recovering, mapping and making sense of our kaleidoscopic collective self under the sign of modernity. It is both historical and comparative. Sociology as an academic discipline is committed to the ideal of generating public knowledge and fostering public reason. It embodies best of enlightenment virtues: scientific reason, tolerance of diversity, humanistic empathy and celebration of democratic ideals. It is the science of our times.

Teaching Learning Process

Multiple pedagogic techniques are used in imparting the knowledge both within and outside the classrooms. Listed below are some such techniques:

- Lectures
- Tutorials
- Power-point presentations
- Project work
- Documentary Films on relevant topics
- Debates, Discussions, Quiz
- Talks /workshops

- Interaction with experts
- Academic festivals
- Classics and other sociologically meaningful films
- Excursions and walks within the city
- Visit to the museums
- Outstation study tours Survey designs
- Internships

A note on Assessment Methods

Besides the formal system of University exams held at the end of each semester as well as mid-semester and class tests that are held regularly, the students are also assessed on the basis of the following:

- Written assignments
- Projects Reports
- Presentations
- Participation in class discussions
- Ability to think critically and creatively to solve the problems
- Application of classroom concepts during fieldwork
- Reflexive Thinking
- Engagement with peers
- Participation in extra and co-curricular activities
- Critical assessment of Films /Books etc.

**A note on career trajectories for Sociology Graduates and (for)
Prospective employers:**

Students with a grounding in Sociology have contributed immensely to the following fields :

- Academics
- Bureaucracy
- Social Work
- Law
- Journalism both print and visual
- Management
- Policy Making
- Developmental Issues
- Designing and Conducting surveys
- Human Resource Development
- Competitive Examinations
- Advocacy
- Performing Arts
- Research in contemporary issues of Gender, Development, Health, Urban Studies, Criminology etc.

SHIVAJI UNIVERSITY, KOLHAPUR.



**Accredited By NAAC with 'A' Grade
Revised Syllabus For
B.A. Part-III**

Psychology

**Syllabus to be implemented from
June, 2020 onwards.**

Shivaji University, Kolhapur
New/Revised Syllabus (CBCS)
For
Bachelor of Arts
(B.A. Part- III)
Semester –V
Paper- VII to XI

1. **TITLE: Subject Psychology**
Optional under the Faculty of Humanities
2. **YEAR OF IMPLEMENTATION:** - New/Revised Syllabus (CBCS) will be implemented from June, 2020 onwards.
3. **PREAMBLE:-**
The Board of Studies should briefly mention foundation, core and applied components of the course/paper. The student should get into the prime objectives and expected level of study with required outcome in terms of basic and advance knowledge at examination level.
4. **GENERAL OBJECTIVES OF THE COURSE/ PAPER/: (As applicable to the Degree /Subject- Paper concerned)**
 - 1) To make students familiar with the field of cognitive psychology.
 - 2) To make aware students with the field of Cross cultural psychology.
 - 3) To make students familiar with the various psychological disorders.
 - 4) To acquaint the students with Current Trends in Psychology.
 - 5) To make students familiar with experiments and statistical methods.
5. **DURATION**
 - The course shall be a full time course.
 - The duration of course shall be of Three years.
6. **PATTERN:-**
Pattern of Examination will be Semester.
7. **FEE STRUCTURE: - (as applicable to regular/self supporting course) As per Government / University rules/norms.**
8. **ELIGIBILITY FOR ADMISSION:-**
As per eligibility criteria prescribed for each course and the merit list in the qualifying examination.

9. MEDIUM OF INSTRUCTION:

The medium of instruction shall be in English or Marathi. (As applicable to the course/programme concerned.)

10. INTERNAL ASSESSMENT

Per paper there will be internal assessment for ten marks. Each student has to submit seminar/ research paper/ case study / field visit report/ survey report/ pannel discussion / Review of books, movies, websites etc.

11. STRUCTURE OF COURSE:

(Note –The structure & title of papers of the degree as a whole should be submitted at the time of submission/revision of first year syllabus.)

THIRD YEAR SEMESTER V (NO.OF PAPERS 05)

Sr. No.	Course	Course Code	Theory Marks	Practical Marks	Internal Marks	Total Marks
1	Cognitive Psychology	DSE – E –86	40	--	10	50
2	Cross Cultural Psychology	DSE – E –87	40	--	10	50
3	Psychopathology	DSE – E –88	40	--	10	50
4	Current Trends in Psychology	DSE – E –89	40	--	10	50
5	Practical: Experiments	DSE – E –90	--	40	10	50
Total			160	40	50	250

12. SCHEME OF TEACHING AND EXAMINATION:-

[The scheme of teaching and examination should be given as applicable to the course/paper concerned.]

THIRD YEAR / SEMESTER – V Scheme of Teaching and Examination

Sr. No.	Course	Teaching Scheme (Hrs/Week)				Examination Scheme (Marks)			
		L	T	P	Total	Theory	Practical	Term Work	Total
1	Cognitive Psychology	4			4	40	---	10	50
2	Cross cultural Psychology	4			4	40	---	10	50
3	Psychopathology	4			4	40	---	10	50
4	Current Trends in Psychology	4			4	40	---	10	50
5	Practical: Experiments	-		8*	8*	--	40	10	50
Total		16	-	8*	24	160	40	50	250

*Two practical of four periods each per week per batch consisting of 10 students.

SCHEME OF EXAMINATION:-

- The examination shall be conducted at the end of each term.
- The Theory/Practical paper shall carry 40 marks.
- The evaluation of the performance of the students in theory papers shall be on the basis of Semester Examination of 40 marks.
- Question Paper of Theory will be set in the view of the /in accordance with the entire Syllabus and preferably covering each unit of syllabi.

STANDARD OF PASSING:-

As Prescribed under rules & regulation for each degree/ programme.

NATURE OF QUESTION PAPER AND SCHEME OF MARKING

(Theory):- Total Marks: 40

Que.1. Multiple Choice Questions	5 marks
Que.2. Short Notes (Any three out of five)	15 marks
Que.3. A) Essay Type Questions	10 marks
Or	
B) Essay Type Questions	
Que.4. A) Essay Type Questions	10 marks
Or	
B) Essay Type Questions	

EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS- (FOR REVISED SYLLABUS)

Old Course	New Course
Cognitive Psychology	Introduction to Cognitive Psychology
Social Psychology	Cross cultural Psychology
Psychopathology	Introduction to Psychopathology
Educational Psychology	Current Trends in Psychology
Practical: Experiments	Practical: Experiments

**REVISED SYLLABUS FOR
B.A. (Part - III)
Choice Based Credit System
(Introduced from June, 2020 onwards)
SEMESTER-V Course Code: DSE – E –86**

- (i) **Paper** **VII**
- (ii) **Title of Paper** **: Introduction to Cognitive Psychology**
- (iii) **Learning Objectives:** This paper has four main learning objectives. Upon successful completion of the course students should:
1. Gain an understanding of key concepts and research techniques in cognitive psychology.
 2. Gain an understanding of the basic processes of sensation attention and perception.
 3. Gain an understanding of the memory processes.
 4. Be able to broadening the horizons of cognitive psychology.
- (iv) **Module** **No. of Credits**
- | | |
|---|----|
| Module 1: Approaches to Human Cognition | 01 |
| Module 2: Visual Perception and Attention | 01 |
| Module 3: Memory | 01 |
| Module 4: Broadening Horizons | 01 |
- (v) **Recommended Reading:**
- a) Basic Reading:**
- Eysenck, M., & Keane, M. (2015). *Cognitive Psychology A Student's Handbook* (7th Ed.). New York: Psychology Press, (Taylor and Francis)
- b) References:**
- Galotti, Kathleen M. (1999). "Cognitive Psychology In and Out of the Laboratory", Second Edition, New York: Books / Cole, Wadsworth. (3rd Reprint, 2004).

SHIVAJI UNIVERSITY, KOLHAPUR

B.A. (Part - III)

Choice Based Credit System

(Introduced from June, 2020 onwards)

SEMESTER-V Course Code: DSE – E –86

PAPER -VII: INTRODUCTION TO COGNITIVE PSYCHOLOGY

Module 1: Approaches to Human Cognition

Introduction

Cognitive Psychology and Cognitive Neuropsychology

The Cognitive Neuroscience: The Brain in Action

Computational Cognitive Science

Comparison of Major Approaches

Module 2: Visual Perception and Attention

Basic Process in Visual Perception

a) Vision and the Brain

b) Two Visual Systems: Perception and Actions

c) Depth Perception

Object and Face Recognition

a) Pattern Recognition

b) Perceptual Organization

c) Approaches to Object Recognition

Perception Motion and Action

a) Direct Perception

b) Perception of Human Motion

c) Change Blindness

Attention and Performance

a) Focused Auditory Attention

b) Focused Visual Attention

c) Divided Attention: Dual Task Performance

Module 3: Memory

Learning Memory

a) Architecture of Memory

b) Working Memory and Working Memory Capacity

c) Levels of Processing and Learning through Retrieval

Long Term Memory System

a) Declarative Memory and Non-declarative Memory

b) Episodic Memory and Semantic Memory

Everyday Memory

- a) Autobiographical Memory: Introduction
- b) Memories across the Lifetime
- c) Theoretical Approaches to Autobiographical Memory
- d) Eyewitness Testimony and Enhancing Eyewitness Memory

Module 4: Broadening Horizons

Cognition and Emotions

- a) Appraisal Theories
- b) Emotion Regulation
- c) Affect and Cognition: Attention and Memory
- d) Cognitive Bias Modification

Consciousness

- a) Functions of Consciousness

(Note: Question papers as per pre-revised syllabi will be set at the examination to be held in October, 2020 and April, 2021 for the benefit of repeater students.)

SHIVAJI UNIVERSITY, KOLHAPUR

B.A. (PART- III)

Choice Based Credit System

(Implemented from June, 2020 Onwards)

Semester – V Course Code: DSE – E –87

i. Paper VIII

ii. Title of paper : CROSS-CULTURAL PSYCHOLOGY

iii. Specific Objectives :

1. To acquaint students with emerging field of Cross-Cultural Psychology
2. To make students aware of global v/s relativistic approaches to study human behavior
3. To sensitize students recognize cultural aspects of individual development and socialization
4. To understand socio-cultural influences in development of abnormality and its treatment
5. To introduce the importance of multiculturalism in globalized world
6. To enhance understanding of indigenous psychologies

iv. Module	No. of credits
Module- 1: Introduction to Cross-cultural Psychology and key concepts	01
Module- 2: Ethics, Emics, Ethnocentrism and Indigenous Psychology	01
Module- 3: Culture and Intelligence, Prejudice and Parental Practices	01
Module- 4: Culture and Abnormality	01

v. Recommended reading

a) Basic Reading:

Stevenson, Andrew (2010): Cultural Issues in Psychology: A Student's Handbook; Routledge Publication, Taylor and Francis Group (Psychology Press), USA; First edition; 2010 (ISBN: 978-0-415-42922-1; ISBN: 978-0-415-42923-8)

b) References:

Bruegelmans S. M., Fons A. C., Van De Vijver J. R. (2011). Fundamental Questions in Cross-Cultural Psychology; Cambridge University Press; 2011 (ISBN: 9780521757515, 0521757517)

Shiraev E. and Levy D. (2013). Cross-Cultural Psychology: Critical thinking and contemporary applications; Routledge Pub., USA; Fifth edition; 2013 (ISBN: 9780205253234)

SHIVAJI UNIVERSITY, KOLHAPUR

B.A. (PART- III)

Choice Based Credit System

(Implemented from June, 2020 Onwards)

Semester - V Course Code: DSE – E –87

PAPER -VIII: CROSS-CULTURAL PSYCHOLOGY

MODULE 1: Introduction to Cross-cultural Psychology and key concepts

Charles Darwin and the age-old search for cultural universals

Introducing cross-cultural psychology

Later trends: Cross-cultural psychology or cultural psychology?

What do we talk about when we talk about culture? - Dual influence,

Limitations of eco-cultural model

The dynamic process of cultural transmission

Culture and individual levels of analysis and the reliability of culture-level analyses

MODULE 2: Ethics, Emics, Ethnocentrism and Indigenous Psychology

Where is psychology?

a. Whereabouts of the written word in psychology

b. Where about of psychology's practitioners

a. Ethics, Emics and ethnocentrism in psychological research

b. Limitations of Ethic-Emic Model

a. Beyond ethnocentrism: Indigenous psychologies

b. Indigenous psychology in the developing world

Indigenous methods

a. Complimentary with mainstream

b. Limitations of indigenous psychology movement

MODULE 3: Culture and Intelligence, Prejudice and Parental Practices

Culture and intelligence

a. What is intelligence?

b. The 'nature' of intelligence: the heritability hypothesis

c. The 'nurture' of intelligence: the environmental-cultural hypothesis

- d. Can intelligence tests be culture-fair?
- e. Indigenous intelligence
- f. Everyday intelligence and cognition

Culture and prejudice

- a. Social psychological theories on the origins of prejudice
- b. Global support for theories of prejudice: Minimal groups, Contact, Social dominance, realistic conflict

Culture and parenting practices

- a. Cultural variations in parenting: bedtime, playtime, doing as you're told
- b. Cultural commonalities in parenting
- c. Culturally diverse parental styles and ethno theories
- d. Parenting is a two-way street: the role of temperament

MODULE 4: Culture and Abnormality

- a. Culture, abnormality and psychopathology
 - b. The debate between Universalists and relativists
- a. Universalism, relativism and Schizophrenia
 - b. Universalism, relativism and culture-bound syndromes
 - C. Limitations of culture-bound syndrome research

Culture, psychotherapy and healing

- a. Factors influencing the effectiveness of psychotherapy across cultures
 - 1. Conceptual factors: ideas about health and illness
 - 2. Interpersonal factors: at the client–therapist interface
 - 3. Material factors: access to treatment
- b. Possession trance: a religious psychotherapy; therapy or pathology?
- c. Indigenous therapies from around world

Recent developments in culture and psychotherapy: Multiculturalism, globalization and healing

(Note: Question papers as per pre-revised syllabi will be set at the examination to be held in October 2020 and April 2021 for the benefit of repeater students.)

Shivaji University, Kolhapur
B. A. (Part - III)
Choice Based Credit System
(Introduced From June, 2020 onwards)

Semester – V Course Code: DSE – E –88

- i) **Paper No.** IX
- ii) **Title of Paper** : **INTRODUCTION TO PSYCHOPATHOLOGY**
- iii) **Specific Objectives** :

- 1) To make the students familiar with the field of Psychopathology.
- 2) To acquaint students with various perspectives of Psychopathology.
- 3) To make the students understand Anxiety and Obsessive Compulsive Disorder.
- 4) To acquaint students with Mood Disorders and Suicide.

iv) Module	No. of Credits
Module - 1: Psychopathology: An Overview	01
Module - 2: Perspectives of Psychopathology	01
Module - 3: Anxiety and Obsessive-Compulsive Disorder	01
Module - 4: Mood Disorders and Suicide	01

v) **Recommended Reading:**

a) **Book for Study:**

Butcher, J. N., Hooley, J. M. and Mineka, S. (2018). Abnormal Psychology. 17th edition, Pearson Education Inc.

b) **Books for Reference:**

Butcher, J. N., Hooley, J. M. and Mineka, S. (2018). Abnormal Psychology. 16th edition, Pearson Education Inc.

Carson, R. C., Butcher, J. N. and Mineka, S. (1996). Abnormal Psychology and Modern Life. 10th edition, New York: Harper Collins

Comer, R. J. (2013). Abnormal Psychology. 8th edition, New York: worth Publishers.

Sarason, I. G. And Sarason, B. R. (2009). Abnormal Psychology: The Problem of Maladaptive Behaviour. 11th edition, Delhi : Pearson Education (Singapore) Pvt. Ltd., (First Impression – 2007)

Shivaji University, Kolhapur
B. A. (Part - III)
Choice Based Credit System
(Introduced From June, 2020 onwards)

PAPER- IX: INTRODUCTION TO PSYCHOPATHOLOGY
DSE – E 88

Module 1: Psychopathology: An Overview

- Indicators of Abnormality
 - A) Subjective Distress
 - B) Maladaptiveness
 - C) Statistical deviancy
 - D) Violation of the Standards of Society
 - E) Social Discomfort
 - F) Irrationality and Unpredictability
 - G) Dangerousness
- The DSM – 5 and the Definition of Mental Disorder
- Classification and Diagnosis
 - A) Advantages and Disadvantages of Classification
 - B) How can we reduce prejudicial attitudes toward people who are mentally ill
- How common are Mental Disorders
 - A) Prevalence and Incidence
 - B) Prevalence estimates for Mental Disorders
 - C) The Global burden of disease
 - D) Treatment
 - E) Mental Health Professionals

Module 2: Perspectives of Psychopathology

- The Biological Perspective
 - A) Genetic Vulnerabilities
 - B) Brain Dysfunction and Neural Plasticity
 - C) Imbalances of Neurotransmitters and Hormones
 - D) Temperament
- The Freud's Psychoanalytic Perspective
 - A) The Structure of Personality
 - B) Defense Mechanisms
 - C) Psychosexual Stages of Development
 - D) The Oedipus complex and the Electra complex
- The Behavioural Perspective
 - A) Classical Conditioning
 - B) Operant Conditioning

- C) Generalization and Discrimination
- D) Observational Learning
- The Social Perspective
 - A) Early Deprivation or Trauma
 - B) Problems in Parenting Style
 - C) Marital Discord and Divorce
 - D) Low Socio-economic Status and Unemployment

Module 3: Anxiety and Obsessive-Compulsive Disorder

Anxiety Disorders

- A) Specific Phobia
 - i) Prevalence, Age of Onset and Gender Differences
 - ii) Causal Factors
 - iii) Treatments
- B) Social Phobia
 - i) Prevalence, Age of Onset and Gender Differences
 - ii) Causal Factors
 - iii) Treatments
- C) Agoraphobia (Panic Disorder)
 - i) Prevalence, Age of Onset and Gender Differences
 - ii) Causal Factors
 - iii) Treatments
- D) Generalized Anxiety Disorder
 - i) Prevalence, Age of Onset and Gender Differences
 - ii) Causal Factors
 - iii) Treatments

Obsessive-Compulsive Related Disorder

- A) Obsessive-Compulsive Disorder
 - i) Prevalence, Age of Onset and Gender Differences
 - ii) Causal Factors
 - iii) Treatments
- B) Body Dysmorphic Disorder
 - i) Prevalence, Age of Onset and Gender Differences
 - ii) Causal Factors
 - iii) Treatments

Module 4: Mood Disorders and Suicide

- Unipolar Depressive Disorders
 - A) Major Depressive Disorder
 - B) Persistent Depressive Disorder
 - C) Causal Factors
 - i) Biological Causal Factors
 - ii) Psychological Causal Factors

- Bipolar and Related Disorders
 - A) Cyclothymic Disorder
 - B) Bipolar Disorders (I and II)
 - C) Causal Factors
 - i) Biological Causal Factors
 - ii) Psychological Causal Factors
- Treatments of Mood Disorders
 - A) Pharmacotherapy
 - B) Alternative Biological Treatments
 - C) Psychotherapy
- Suicide
 - A) Psychological Disorder
 - B) Factors Associated with Suicide
 - C) Theoretical Models of Suicidal Behaviour
 - D) Suicide Prevention and Intervention

(Note: Question papers as per pre-revised syllabi will be set at the examination to be held in October 2020 and April 2021 for the benefit of repeater students.)

SHIVAJI UNIVERSITY, KOLHAPUR

B.A. (PART III)

(Implemented From June, 2020 Onwards)

SEMESTER- V Course Code: DSE – E –89

i. Paper X

ii. Title of paper : CURRENT TRENDS IN PSYCHOLOGY

iii. Specific Objectives :

1. To acquaint students with emerging new trends in Psychology
2. To make students aware of health risk behaviour and their causes
3. To sensitize students recognize developmental factors related to criminal behaviour
4. To understand psychological, family and social influences in development of criminality
5. To introduce work carried out in the field of cyber psychology
6. To learn about psychological processes behind digital Usage, cyber bullying, gaming and gambling
7. To make students aware of online crimes such as scams, fraud, illegal downloads etc.

iv. Module	No. of credits
Module- 1: Health Psychology	01
Module- 2: Criminal Psychology	01
Module- 3: Cyber Psychology - I	01
Module- 4: Cyber Psychology - II:	01

v. Recommended reading

a) Basic Reading:

Bartol, Curt R. and Bartol Anne M. (2017): Criminal Behavior: A Psychological Approach; Pearson Education, Inc., US; Eleventh Edition, 2017 (ISBN-13: 978-1-292-15771-9, ISBN-10: 1-292-15771-2) **(For Module II)**

Morrison Val and Bennett Paul (2016): An Introduction to Health Psychology; Pearson Education Limited; Fourth edition, 2016 (ISBN: 978-1-292-00313-9; ISBN: 978-1-292-00314-6; ISBN: 978-1-292-12944-0) **(For Module I)**

Whitty, Monica Therese and Young, Garry (2017). Cyber Psychology: The Study of Individuals, Society and Digital Technologies; British Psychological Society and John Wiley & Sons, Ltd.; First Edition; 2017 (ISBN 9780470975626; ISBN 9781118321126) **(For Module- III and IV)**

b) References:

Connolly Irene, Palmer Marion, Barton Hannah, Kirwan Grainne (Ed.) (2016). An Introduction to Cyber Psychology; Routledge Pub; First Edition; 2016 (ISBN: 131758452X, 9781317584520)

Durrant, Russil (2018). An Introduction to Criminal Psychology; Routledge Taylor & Francis Pub., London; Second Edition, 2018 (ISBN: 978-1-138-65095-4; ISBN: 978-1-138-65096-1; ISBN: 978-1-315-62504-1)

Ogden J. (2012): Health Psychology - A Textbook; McGraw Hill Open University Press; Fifth edition; 2012 (ISBN 13: 978 0 335 243839; ISBN 10: 0 335 243835)

SHIVAJI UNIVERSITY, KOLHAPUR
B.A. (PART III)
Choice Based Credit System
(Implemented from June, 2020 Onwards)
SEMESTER V Course Code: DSE – E –89
PAPER X: CURRENT TRENDS IN PSYCHOLOGY

MODULE 1: Health Psychology: Health-Risk Behavior

What is Health Behavior?

Smoking, Drinking and Illicit Drug Use

Unprotected Sexual Behavior

Obesity

MODULE 2: Criminal Psychology: Origins of Criminal Behavior and Developmental Risk Factors

Social Risk Factors:

- a. Peer Rejection and Association with Antisocial Peers

Parental and Family Risk Factors

- a. Parental Styles and Practices
- c. Parental Monitoring
- d. Parental Psychopathology

Psychological Risk Factors

- a. Lack of Attachment
- b. Lack of Empathy
- c. Attention Deficit Hyperactivity Disorder and ADHD - Criminal Behavior link
- d. Conduct Disorder
- e. Oppositional Defiant Disorder

MODULE 3: Cyber Psychology - I: Digital Usage, Cyber bullying, Gaming and Gambling

Children's and teens' use of digital technologies

- a. Internet usage
- b. Digital technologies: Harmful or empowering for young people?
- c. Illegal content and illegal activities

- a. Cyber bullying and cyber-harassment
 - b. Scams, Children and Teens
- a. Activism
 - b. Radicalization

Online Gaming and Gambling

- a. Internet addiction
- b. Internet Gaming addiction
- c. Aggressive video games
- d. Games for learning

MODULE 4: Cyber Psychology - II: Online Crimes (Scams, Fraud and Illegal Downloads)

- a. Phishing and Vishing
 - b. Why are people tricked by phishing?

Mass-Marketing Fraud

- a. Cognitive and Motivational Errors
- b. What type of person tends to be susceptible to Mass-Marketing Fraud (MMF)?

Stages involved in the online dating romance scam

Illegal downloads

(Note: Question papers as per pre-revised syllabi will be set at the examination to be held in October, 2020 and April, 2021 for the benefit of repeater students.)

SCHEME OF PRACTICAL EXAMINATION:-

The practical examination shall be conducted at the end of each semester/term.

- The practical shall carry 40 marks.
- There shall be Two Practical's of 4 Periods each per week, per batch consisting of 10 students (Total workload for practical will be 8 periods per week, per batch).
- Practical examination incorporates experiments, and statistical problems.
- The evaluation of the performance of the students in practical shall be on the basis of Semester Examination of 40 marks.
- Experiments and statistical problems should be set for semester – V
- In the semester practical examination, the candidate has to conduct one experiment allotted to him / her and solve one statistical problem.
- The candidate has to bring his / her own subject for practical examination.

STANDARD OF PASSING:

As Prescribed under rules & regulation for each degree / programme.

NATURE OF QUESTION PAPER

The candidate will be asked to conduct one experiment allotted to him / her and to write its full report.

The candidate in a practical batch will have to solve one statistical problem.

As a different statistical problem has to be set, separate question paper will be set for each batch of each practical.

SCHEME OF MARKING

1. Journal	: 10 Marks
2. Statistical Problem	: 10 Marks
3. Conduct	: 07 Marks
4. Report Writing	: 08 Marks
5. Oral (Experiment)	: 05 Marks

TOTAL : 40 Marks

NOTE:

1. There shall be Two Practical's of 4 Periods each per week, per batch consisting of 10 students (Total workload for practical will be 8 periods per week, per batch).
2. Six experiments should be conducted from the list given for Semester V.
3. The student has to submit a journal duly signed by the course teacher and the head of the department before practical examination.
4. During the academic year students are expected to visit any social or industrial organization such as Remand Home, Old Age Home, Special Schools, Mental Hospital, Industry, Rehabilitation & Counseling centers etc.

SHIVAJI UNIVERSITY, KOLHAPUR
REVISED SYLLABUS FOR B.A. (Part III)
(Introduced from June, 2015 onwards)
SEMESTER-V Course Code: DSE – E –90

(i) Paper **XI**

(ii) Title of Paper **: PRACTICAL-EXPERIMENTS**

(iii) Specific Objectives:

- 1) To make the students familiar with Psychological experiments.
- 2) To impart the knowledge and skills for conducting experiments and writing their reports.
- 3) To make the students familiar with some statistical methods.
- 4) To provide Practical experience through IT Soft ware's (e.g. Coglab etc.)

(iv) Recommended Reading:

a) Basic Reading:

Anastasi, Anne and Urbina, Susana, (1997). Psychological Testing, Seventh Edition(2003), New Delhi: Prentice-Hall of India Pvt. Ltd.,
Kothurkar, and Vanarase (1986). Experimental Psychology: A Systematic Introduction, New Delhi: Wiley Eastern Ltd.
Mangal, S.K. (2010). Statistics in Psychology and Education, 2nd edition, New Delhi: Prentice-Hall of India Pvt. Ltd.,
Postman, L. and Egan J. P. (1949). Experimental Psychology: An Introduction, New Delhi: Kalyani Publishers.

b) References:

Barve, B.N. (2007). Shaikshanik Manasashastriy Sankhyashastra, Nagpur: Vidya Prakashan
Desai, Bharat ani Abhyankar, Shobhana (2001): Manasashastriya Mapana, Pune: Narendra Prakashan.
Narake, H.J. ani Barve, B. (1999). Manomapan va Sankhyashastra, Aurangabad: Prerana Agencies.
Vanarase, S.; Gogate, S. ani Vanarase, Shyamala (1976). Manasashastriya Prayog Pune: Vinus Prakashan.

SHIVAJI UNIVERSITY, KOLHAPUR
B. A. PART – III
(Implemented from June, 2020 onwards)
SEMESTER –V Course Code: DSE – E –90
PAPER –XI: PRACTICAL (EXPERIMENTS)

1. Span of Attention
2. Division of Attention
3. Reaction Time
4. Serial Position Effect in Learning
5. Recall and recognition
6. Effect of Meaningfulness on Learning
7. Transfer of Training
8. Habit Interference
9. Massed Vs. Distributed Method of Learning
10. Short Term Memory
- 11 Problem Solving
12. Maze Learning
13. Change Blindness
14. Depth Perception

• Statistical Problems

Measures of Central Tendency

- A) Mean (Short method)
- B) Standard Deviation

Shivaji University, Kolhapur
New/Revised Syllabus CBCS)
For
Bachelor of Arts
(B.A. Part - III)
Paper- XII to XVI
Sem.VI

1. TITLE: Subject Psychology

Optional under the Faculty of Humanities

2. YEAR OF IMPLEMENTATION: - New/Revised Syllabus will be implemented from June, 2020 onwards.

3. PREAMBLE:-

The Board of Studies should briefly mention foundation, core and applied components of the course/paper. The student should get into the prime objectives and expected level of study with required outcome in terms of basic and advance knowledge at examination level.

4. GENERAL OBJECTIVES OF THE COURSE/ PAPER/: (As applicable to the Degree /Subject- Paper concerned)

- 1) To make students familiar with the field of Psychological Testing.
- 2) To make aware students with the field of Counseling Psychology.
- 3) To make students familiar with the various Developmental Psychology.
- 4) To acquaint the students with Psychology of Organizational Behavior.
- 5) To make students familiar with Psychological tests and statistical methods.

5. DURATION

- The course shall be a full time course.
- The duration of course shall be of Three years.

6. PATTERN:-

Pattern of Examination will be Semester.

7. FEE STRUCTURE: - (as applicable to regular/self supporting course) As per Government / University rules/norms.

8. ELIGIBILITY FOR ADMISSION:-

As per eligibility criteria prescribed for each course and the merit list in the qualifying examination.

9. MEDIUM OF INSTRUCTION:

The medium of instruction shall be in English or Marathi. (As applicable to the course/programme concerned.)

10. INTERNAL ASSESSMENT

Per paper there will be internal assessment for ten marks. Each student has to submit seminar/ research paper/ case study / field visit report/ survey report/ panel discussion / Review of books, movies, websites etc.

11. STRUCTURE OF COURSE-

(Note – The structure & title of papers of the degree as a whole should be submitted at the time of submission/revision of first year syllabus.

THIRD YEAR SEMESTER VI (NO.OF PAPERS 05)

Sr. No.	Course	Course Code	Theory Marks	Practical Marks	Internal Marks	Total Marks
1	Psychological Testing	DSE – E –211	40	--	10	50
2	Counselling Psychology	DSE – E –212	40	--	10	50
3	Developmental Psychology	DSE – E –213	40	--	10	50
4	Psychology of Orgazational Behaviour	DSE – E –214	40	--	10	50
5	Practical: Psychological Tests	DSE – E –215	--	40	10	50
Total			160	40	50	250

12. SCHEME OF TEACHING AND EXAMINATION:-

[The scheme of teaching and examination should be given as applicable to the course/paper concerned.]

THIRD YEAR / SEMESTER – VI Scheme of Teaching and Examination

Sr. No.	Course	Teaching Scheme (Hrs/Week)				Examination Scheme (Marks)			
		L	T	P	Total	Theory	Practical	Term Work	Total
1	Psychological Testing	4			4	40	--	10	50
2	Counselling Psychology	4			4	40	--	10	50
3	Developmental Psychology	4			4	40	--	10	50
4	Psychology of Organizational Behaviour	4			4	40	--	10	50
5	Practical: Psychological Tests	-		8*	8*	---	40	10	50
Total		16	-	8*	24	160	40	50	250

*Two practical of four periods each per week per batch consisting of 10 students.

SCHEME OF EXAMINATION:-

- The examination shall be conducted at the end of each term.
- The Theory/Practical paper shall carry 40 marks.
- The evaluation of the performance of the students in theory papers shall be on the basis of Semester Examination of 40 marks.
- Question Paper of Theory will be set in the view of the /in accordance with the entire Syllabus and preferably covering each module of syllabi.

STANDARD OF PASSING:

As Prescribed under rules & regulation for each degree / programme.

NATURE OF QUESTION PAPER AND SCHEME OF MARKING (Theory):

Que.1. Multiple Choice Questions	5 marks
Que.2. Short Notes (Any three out of five)	15 marks
Que.3. A) Essay Type Questions	10 marks
Or	
B) Essay Type Questions	
Que.4. A) Essay Type Questions	10 marks
Or	
B) Essay Type Questions	

EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS- (FOR REVISED SYLLABUS)

Old Course	New Course
Psychological Testing	Psychological Testing
Counselling Psychology	Counselling Psychology
Personal Psychology	Developmental Psychology
Psychology of Organizational Behaviour	Psychology of Organizational Behaviour
Practical: Psychological Tests	Practical: Psychological Tests

(Note: Question papers as per pre-revised syllabi will be set at the examination to be held in October, 2020 and April, 2021 for the benefit of repeater students.)

Shivaji University, Kolhapur
B.A. (III)
Choice Based Credit System
(Introduced from June, 2020 onwards)

Semester-VI Course Code: DSE – E –211

i) Paper **XII**

ii) Title of the paper **: PSYCHOLOGICAL TESTING**

iii) Specific Objectives **:**

- 1) To make the students familiar with the field of psychological testing in general.
- 2) To acquaint the students with the nature, types, applications, reliability and
- 3) To make the students to understand the nature and other description of personality tests.

iv) Module	No. of Credits
Module 1: The nature and uses of psychological testing	01
Module 2: Reliability and Validity: Basic concepts	01
Module 3: Individual tests of Intelligence and Achievement	01
Module 4: Psychological Assessment and Personality Tests	01

V. Recommended reading

a) Book for Study:

Aiken, Lewis, R. (2009). Psychological Tests and Assessment. 12th Ed. Pearson Education.

Anastasi, Anne & Urbina, Susana (1997). Psychological Testing, Seventh Edition, New Delhi: Prentice- Hall of India Pvt. Ltd., (2003)

b) Books for Reference:

Gregory, Robert, J. (2014). Psychological Testing: History, Principals and Applications. Sixth Ed., Pearson Education.

Kaplan, Robert, M. & Saccuzzo, Dennis, P. (2005). Psychological Testing: Principles, Applications and Issues. 6th Ed., Canada: Wordsworth Cengage Learning.

Ronald, J. & Swerdik, Mark, E. (2010). Psychological Assessment: An Introduction to Tests and Measurement. 7th Ed., Special Indian Edition, New Delhi: McGraw Hill Education Pvt. Ltd.

Barve, B.N. & Narake, H.J. (2008). Manomapan, Nagpur: Vidya Prakashana.

Desai, B. & Abhyankar, Shobhana (2007). Manasashatriya Mapan, Pune: Narendra Prakashana.

Shivaji University, Kolhapur
B.A. (III)
Choice Based Credit System
(Introduced from June, 2020 onwards)

PAPER- XII: Psychological Testing
DSE – E - 211

Module 1: The nature and uses of psychological testing

Definition of a test

Types of tests

Uses of testing

Influence of the Examiner

Module 2: Reliability and Validity: Basic concepts

Reliability

a) Meaning of Reliability

b) Types of Reliability

i. Test -Retest Reliability

ii. Alternate- Form Reliability

iii. Split-Half Reliability

iv. Scorer Reliability

Reliability of speeded test

Validity

a) Meaning of validity

b) Content-description Procedures

c) Criterion- Prediction Procedures

d) Construct- Identification Procedures

Module 3: Individual tests of Intelligence and Achievement

The Wechsler scales of Intelligence

The Wechsler subtests: Description and analysis

Stanford-Binet intelligence scales (SBIT): Fifth edition

Individual tests of Achievement

Module 4: Psychological Assessment and Personality tests

A) Personality tests-Expression Techniques

- i) The draw- A - person test
- ii) The house- tree - person test (H-T-P)

B) Projective Techniques

- i) Rorchach Ink Blot Test
- ii) Thematic Apperception Test

Assessment of normality

A) Sixteen Personality Factor Questionnaire (16 PF)

B) NEO personality inventory - revised (NEO-PI-R)

Measures of emotional Intelligence

Shivaji University, Kolhapur
B.A. (III)
Choice Based Credit System
(Introduced from June, 2020 onwards)

Semester-VI Course Code: DSE – E –212

(i) Paper: XIII

(ii) Title of the paper: Counselling Psychology

(iii) Specific Objectives:

1. To make the students familiar with the field of Counselling Psychology.
2. To acquaint students with the applications of Counselling Psychology in the fields of Career, School, College Counselling and student-life services.

(iv) Module	No. of Credits
Module 1: Introduction and Professional Aspects of Counselling Psychology	01
Module 2: Career Counselling	01
Module 3: Professional School Counselling	01
Module 4: College Counselling and Student- life Services	01

V. Recommended reading

a) Book for Study:

Gladding, S.T., and Batra Promila (2018). Counselling : A Comprehensive Profession. Eighth Edition. Third Impression, Pearson Education Inc.

(vi) Books for Reference:

David A. (2009). Guidance and Counselling. New Delhi: Commonwealth Publishers,
Gladding, S.T.(2014). Counseling : A Comprehensive Profession. Seventh Edition.
First Impression, Pearson Education Inc.

Kinra Asha, (2008). Guidance and Counselling. Pearson India Education Services
Pvt.Ltd.

Rao, N. (2007). Counselling and Guidance. New Delhi: Tata McGraw- Hill Publishing
Company Limited,.

Reeves Andrew, (2013) An Introduction to Counselling and Psychotherapy. New
Delhi: SAGE Publications India Pvt. Ltd.

Shivaji University, Kolhapur
B.A. (III)
Choice Based Credit System
(Introduced from June, 2020 onwards)

PAPER- XIII: COUNSELLING PSYCHOLOGY
DSE – E - 212

MODULE 1. Introduction and Professional Aspects of Counselling

Introduction

A. Definition of Counselling

B. Guidance

C. Psychotherapy

Current Trends in 21st Century

A. Dealing with Violence, Trauma and Crises

B. The Challenge of Managed Care

C. Promoting Wellness

D. Concern for Social Justice and Advocacy

E. Greater Emphasis on Technology

Professional Aspects of Counselling

A. Inspection

B. Registration

C. Certification

D. Licensing

MODULE 2. Career Counseling

The Importance and Scope of Career Counselling

A. Important Aspects of Career Counselling

B. The Scope of Career Counseling and Careers

Career Development Theories and Counselling

A. Trait-and –Factor Theory

B. Developmental Theories

C. Social-Cognitive Career Theory

Career Counseling with Diverse Populations

A. Career Counselling with Children

B. Career Counselling with Adolescents

C. Career Counselling with College Students

MODULE 3. Professional School Counselling

The ASCA Model

- A. The ASCA Model Areas
- B. School Counselors at Various Levels

Elementary School Counselling

- A. Emphases and Roles
- B. Activities
- C. Prevention

Middle School Counselling

- A. Emphases and Roles
- B. Activities
- C. Prevention

Secondary School Counselling

- A. Emphases and Roles
- B. Activities
- C. Prevention

MODULE: 4 College Counselling and Student-Life Services

The Beginning of Student-Life-Services and College Counselling

The Theoretical Bases and Professional Preparation for Working With
College Students

- A. Theoretical Bases
- B. Professional Preparation

College Counseling

- A. Emphases and Roles
- B. Activities

Counselling and Student-Life Services with First-Year, Graduate Students
And Nontraditional Students

- A. First-Year Students
- B. Graduate Students
- C. Older Students
- D. First-Generation Students
- E. Student Athletes

(Note: Question papers as per pre-revised syllabi will be set at the examination to be held in October, 2020 and April, 2021 for the benefit of repeater students.)

Semester-VI Course Code: DSE – E –213

Shivaji University, Kolhapur
B.A. (III)
Choice Based Credit System
(Introduced from June, 2020 onwards)

PAPER- XIV: DEVELOPMENTAL PSYCHOLOGY
DSE – E- 213

Module 1: An Introduction to Lifespan Development

An orientation of life span development

- A. Defining Lifespan Development
- B. The scope of the field of lifespan development

Research Methods

- A. Experiments: Determining Cause and Effect
- B. Measuring Developmental Change

Earliest Development

- A. Genes and Chromosomes: The Code of Life
- B. Multiple Births: Two- or More- for the Genetic Price of life
- C. Boy or Girl? Establishing the sex of the Child

Prenatal Growth and Change

- A. Fertilization: The moment of Conception
- B. The Stages of the Prenatal Period: The Onset of Development
- C. Pregnancy Problems

Module 2: Infancy and Childhood

Developing the Roots of Sociability

- A. Emotions in Infancy: Do Infants Experience Emotional Highs and Lows?
- B. Stranger Anxiety and Separation Anxiety: It's Only Natural
- C. Social Referencing: Feeling What Others Feel

Intellectual Development

- A. Piagetian Approaches to Cognitive Development
- B. Information Processing in Middle Childhood
- C. Vygotsky's Approach to Cognitive Development

The Developing Self

- A. Psychosocial Development in Middle Development
- B. Self-esteem: Developing a Positive – or Negative – View of the Self

Module 3: Adolescence

Identity: Asking “Who Am I?”

- A. Self –Concept and Self- Esteem
- B. Identity Formation: Changes or Crisis?
- C. Depression and Suicide : Psychological Difficulties in Adolescence

Relationships : Family and Friends

- A. Family Ties : Changing Relations with Relations
- B. Relationship with Peers : The Importance of Belonging

Dating and Sexual Behavior

- A. Dating and sexual relationships in the twenty- first century.
- B. Sexual Orientation : Heterosexuality, Homosexuality, Bisexuality, and Transsexualism

Module 4: Adulthood

Choosing a Career

- A. Career Choices, Skill Development and Government Policies in India
- B. Gender and Career Choices
- C. Why Do People Work? More Than Earning a Living

Health

- A. Wellness and Illness: The Ups and Downs of Middle Adulthood
- B. Individual Variations in Health: Socioeconomic Status and Gender Difference

Personality Development

- A. Two Perspectives on Adult Personality Development: Normative Crisis versus Life events
- B. Erikson’s Stage of Generatively versus Stagnation

(Note: Question papers as per pre-revised syllabi will be set at the examination to be held in October, 2020 and April, 2021 for the benefit of repeater students.)

Shivaji University, Kolhapur
B.A. (III)
Choice Based Credit System
(Introduced from June, 2020 onwards)

Semester-VI Course Code: DSE – E –214

- (i) **Paper** **XV**
- (ii) **Title of Paper** **: Organizational Behaviour**
- (iii) **Learning Objectives:** This paper has four main learning objectives. Upon successful completion of the course students should:
1. Gain an understanding of key concepts in organizational behaviour.
 2. Gain an understanding of the idea of personality, job satisfaction and leadership.
 3. Gain an understanding of the group processes.
 4. Be able to understand the fundamental change processes of organization.
- | (iv) | Module | No. of Credits |
|------|--|----------------|
| | Module 1: Organizational Behaviour (OB) | 01 |
| | Module 2: The Individual | 01 |
| | Module 3: Foundations of Group Behaviour | 01 |
| | Module 4: Organizational Change | 01 |
- (v) **Recommended Reading:**
 Robbins, S., Timothy A., Vohra, N. (2013). *Organizational Behavior* (15th Edition). Delhi: Pearson Education, Inc.

Shivaji University, Kolhapur
B.A. (III)
Choice Based Credit System
(Introduced from June, 2020 onwards)

PAPER-XV: ORGANIZATIONAL BEHAVIOR
DSE – E- 214

Module 1: Organizational Behavior (OB)

Importance of Interpersonal Skills

What managers do?

- A) Management functions and roles
- B) Management skills
- C) Effective versus successful managerial activities

Challenges and opportunities for OB

- A) Responding to Globalization
- B) Improving people skills
- C) Stimulating innovation and change
- D) Helping employees balance work-life conflicts
- E) Creating a positive work environment

Module 2: The Individual

Personality

- A) What is personality?
- B) The Myer-Briggs Type indicator
- C) The Big Five Personality Model

Attitudes and Job Satisfaction

- A) What are the major Components of Attitudes?
- B) What are the major job attitudes?
- C) Measuring Job Satisfaction, How Satisfied are people in their Jobs?
What Causes Job Satisfaction?
- D) The Impact of Satisfied and Dissatisfied Employees on the Workplace?

Leadership

- A) What is Leadership: Trait Theories?
- B) Behavioral Theories
- C) Contingency Theories.
- D) Charismatic Leadership and Transformational Leadership

Module 3: Foundations of Group Behaviour

Defining and classifying groups

Stages of Group Development: Five-Stage model

Group properties

- A) Roles and Norms

- B) Cohesiveness and Diversity
- Group Decision Making
 - A) Group versus Individual
 - B) Group Decision Making Techniques

Module 4: Organizational Change

- Forces for Change and planned change
- Resistance to change
- Approaches to manage organizational change
 - A) Lewin's three-step model
 - B) Kotter's Eight-step plan for implementing change
- Creating a culture for change
 - A) Stimulating a culture of innovation
 - B) Creating a learning organization

(Note: Question papers as per pre-revised syllabi will be set at the examination to be held in October, 2020 and April, 2021 for the benefit of repeater students.)

SCHEME OF PRACTICAL EXAMINATION:-

The practical examination shall be conducted at the end of each semester/term.

- The practical shall carry 40 marks.
- There shall be Two Practical of 4 Periods each per week, per batch consisting of 10 students (Total workload for practical will be 8 periods per week, per batch).
- Practical examination incorporates psychological tests, and statistical problems.
- The evaluation of the performance of the students in practical shall be on the basis of Semester Examination of 40 marks.
- Psychological tests and statistical problems should be set for semester -VI
- In the semester practical examination, the candidate has to administer one psychological test allotted to him / her and solve one statistical problem for Semester-VI
- The candidate has to bring his / her own testee/subject for practical examination.

STANDARD OF PASSING:

As Prescribed under rules & regulation for each degree / programme.

NATURE OF QUESTION PAPER

The candidate will be asked to administer one psychological test allotted to him / her and to write its full report.

The candidate in a practical batch will have to solve one statistical problem. As a different statistical problem has to be set, separate question paper will be set for each batch of each practical.

SCHEME OF MARKING

1. Journal	:	10 Marks
2. Statistical Problem	:	10 Marks
3. Conduct	:	07 Marks
4. Report Writing	:	08 Marks
5. Oral (Tests)	:	05 Marks

TOTAL	:	40 Marks

NOTE:

1. There shall be Two Practical of 4 Periods each per week, per batch consisting of 10 students (Total workload for practical will be 8 periods per week, per batch).
2. Six psychological tests should be conducted from the list given for Semester –VI.
3. The student has to submit a journal duly signed by the course teacher and the head of the department before practical examination.
4. During the academic year students are expected to visit any social or industrial organization such as Remand Home, Old Age Home, Special Schools, Mental Hospital, Industry, Rehabilitation & Counseling centers etc.

SHIVAJI UNIVERSITY, KOLHAPUR

B.A. (Part III)

Choice Based Credit System

(Introduced from June, 2020 onwards)

SEMESTER-VI Course Code: DSE – E –215

PRACTICAL: PSYCHOLOGICAL TESTS

(i) Paper XVI

(ii) Title of Paper : PRACTICAL- PSYCHOLOGICAL TESTS

(iii) Specific Objectives :

1. To make the students familiar with Psychological tests.
2. To impart the knowledge and skills for administering psychological tests and writing their reports.
3. To make the students familiar with some statistical methods.
4. To provide Psychological experience Testing through IT Software (e.g. Coglab etc.)

(vi) Recommended Reading:

a) Basic Reading:

Anastasi, Anne and Urbina, Susana, (1997). Psychological Testing, Seventh Edition, New Delhi: Prentice-Hall of India Pvt. Ltd.

Garrette, H. E and Woodworth, R. S., (1981). Statistics in Psychology and Education, Tenth Edition Reprint, Bombay: Vakils and Siman Ltd.,

b) References:

Barlinge ani Latkar (2000). Upayojit Manasashatra, Nagpur: Shri Sainath Prakashan,

Barve, B.N. (2007). Shaikshanik Manasashastriy Sankhyashastra, Nagpur: Vidya Prakashan

Desai, B. and Abhyankar, S.C. (2001). Prarayogik Manasashastra ani Samshodhan Paddhati. Pune: Narendra Prakashan.

Desai, Bharat ani Abhyankar, Shobhana (2001). Manasashastriya Mapana, Pune: Narendra Prakashan.

Narake, Himmat ani Barve, Bapurao (1999). Manomapan va Sankhyashastra, Aurangabad: Prerana Agencies.

SHIVAJI UNIVERSITY, KOLHAPUR
B.A. (Part III)
Choice Based Credit System
(Introduced from June, 2020 onwards)

PAPER – XVI: PRACTICAL (PSYCHOLOGICAL TESTS)
DSE – E - 215

1. Interest Inventory
2. Attitude Scale
3. Anxiety Scale
4. Personality Inventory
5. Adjustment Inventory
6. Self-concept Test
7. Test of Intelligence
8. Achievement Test
9. Leadership Scale
10. Secularism Scale
11. Locus of Control Scale
12. Stress Scale
13. Aggression Scale
14. Superstition Scale
15. Women Freedom Scale
16. Attitude toward Sex
17. Social Change Scale
18. Stress Management Scale

• Statistical Problems

A) Pearson's product moment correlation (Calculations from actual scores)

B) Independent 't' test

(Write the calculated values are significant at the 0.01 / 0.05 level or not)

SHIVAJI UNIVERSITY, KOLHAPUR.



Accredited By NAAC with 'A' Grade

Revised Syllabus For

B.Sc Part- III

Physics

Syllabus to be implemented from

June, 2020 onwards.

SHIVAJI UNIVERSITY, KOLHAPUR

B.Sc. Part-III Physics CBCS Syllabus with effect from June 2020

B.Sc. Part-III Semester-V

PHYSICS Paper-IX

DSE-E1 Mathematical Physics

Theory: 36 Hours (45 Lectures of 48 minutes)

Marks -50 (Credits: 02)

UNIT-I

1. Partial Differential Equation (8 hours)

Introduction to differentialequations, Method of separation of variables for solving second order partial differential equations, Form of two dimensional Laplace differential equation in Cartesian coordinates and its solution, Three dimensional partial differential equation in Cartesian coordinates and its solution, The differential equation of progressive wave and its solution.

2. Frobenious Method and Special Functions (10hours)

Singular points of second order differential equations, Application of singularity to Legendre and Bessel differential equation, Series solution method of solving second order linear differential equation(Frobenious method) and its application to Legendre differential equation.

UNIT-II

1. Some Special Integrals (6 hours)

Gamma function, Properties of Gamma function, Beta function, Properties of Beta function,Relation between Beta and Gamma functions, Error function (Probability Integral).

2. Complex Analysis (12 hours)

Revision of complex numbers and their graphical representation: Geometrical representation, Equal complex numbers, Addition, Subtraction, Multiplication and Division of complex number by geometry. Types of complex numbers, square roots of complex numbers, Logarithmic function of complex variables, Euler's formula, De'Moivre's theorem, Cauchy-Riemann conditions.

Reference Books

1. Advanced calculus, Robert C. Wrede, Murray Spiegel.
2. Differential Equations with Modeling Applications, Dennis G.Zill.
3. Partial Differential Equations, Gupta Malik and Mittal.
4. Differential Equations, Gupta Malik and Mittal.
5. Differential Equations, Ramachandra Rao, H. R. Anuradha.
6. Partial Differential Equations, N. P. Bali.
7. Differential Equations, N. Ch. S. N. Iyenger.
8. Mathematical Physics, B. S. Rajput.
9. Mathematical Methods for Physicists, Arfken, Weber, 2005, Elsevier.
10. Mathematical Methods for Scientists and Engineers, McQuarrie, 2003, Viva Books.
11. Mathematical Physics, H. K. Das, Rama Varma.
12. Essential Mathematical methods, K. F. Riley, M. P. Hobson, 2011, Cambridge.
13. Mathematics for Physicists, Susan M. Lea, 2004, Thomson Books/Cole.

B.Sc. Part-III Semester-V
PHYSICS Paper-X
DSE-E2 Quantum Mechanics
Theory: 36 Hours (45 Lectures of 48 minutes)
Marks -50 (Credits: 02)

Unit-I

1. Matter Waves (08 hours)

Wave particle duality, De-Broglie hypothesis of matter waves, Derivation of wavelength of matter wave, Concept of wave packet, Relation between group velocity - phase velocity and group velocity-particle velocity, Davisson and Germer experiment, Uncertainty principle (statements only): position-momentum and energy- time, Application of uncertainty principle- non existence of free electrons in the nucleus.

2. Schrodinger's Wave Equation (10 hours)

Wave function and its physical interpretation, Condition of physically acceptable wave function, Normalized and orthogonal wave function, Schrödinger time dependent and time independent (steady state) wave equations in 1D and 3D, Probability current density(continuity equation), Eigen values and Eigen functions, Expectation values of dynamic variables.

Unit-II

1. Operators in Quantum Mechanics (08 hours)

Definition of an operator, Position operator (x), Linear momentum operator (p), Commutation relation in quantum mechanics, Commutation relation between x and p , Kinetic energy operator (T), Hamiltonian operator (H), Parity operator (π), Angular momentum operator (L) – components of angular momentum operator in Cartesian coordinate system, Ladder operators, Eigen values of L_z and L^2 (use equations for L^2 and L_z in spherical polar coordinates).

2. Applications of Schrodinger Equation (10 hours)

Particle in a rigid box (infinite potential well) in one dimension and three dimension, Step potential- reflection and transmission coefficients, Potential barrier- tunneling effect (qualitative treatment), One dimensional simple harmonic oscillator (operator method)- energy levels, zero point energy, Schrodinger equation for Hydrogen atom in spherical polar coordinates, Separation of radial and angular parts, Solution of radial part of Schrodinger's equation - Energy Eigen values.

Reference Books

1. Modern Physics, R. Murugesan, 1997, S. Chand and Company Ltd.
2. Atomic Physics, J B Rajam, S Chand and Co.
3. Perspectives of Modern Physics, Arthur Beiser, McGraw Hill International Editions.
4. Concepts of Modern Physics, Arthur Beiser, Ahobhit Mahajan, S. Rai Choudhury, Sixth Edition, Tata McGraw Hill Education Private Ltd.
5. Modern Physics, S. L. Kakani and Shubhra Kulkarni, 2006, Viva books Private Ltd.
6. Modern Physics, D. L. Sehgal, K. L. Chopra and N. K. Sehgal, Reprint 1995, Sultan Chand & sons.
7. Introduction to Modern Physics, F. K. Richtmyer, E. H. Kennard, John N. Cooper, Sixth Edition, Tata McGraw Hill Education Private Ltd
8. A Text book of Quantum Mechanics, P.M. Mathews & K. Venkatesan, 2nd Edn.,2010, Tata McGraw Hill,
9. Quantum Mechanics, Leonard I. Schiff, 3rdEdn. 2010, Tata McGraw Hill.
10. Quantum Mechanics Theory and Applications, A. K. Ghatak and S. Lokanathan, Third Edn.1995, Macmillan India Ltd.
11. Quantum Mechanics Theory and applications, AjoyGhatak, S. Lokanathan, 5th Ed,2017, Trinity.
12. Quantum Mechanics, Chatwal and Anand, Reprint 2010, Himalaya Publishing house.
13. Quantum Mechanics, Gupta, Kumar, Sharma, Thirtieth Edn., 2011, Jai Prakash Nath Publications.
14. Advanced Quantum Mechanics, SatyaPrakash, Reprint 2011, KedarNath Ram Nath Meerut.
15. Advanced Quantum Mechanics, B. S. Rajput, Ninth Edn., 2009, Pragati Prakashan.
16. Quantum Mechanics, B. N. Srivastava, Reprint 2011, Pragati Prakashan.
17. Quantum Mechanics, P. J. E. Peebles, 2003, Prentice Hall of India.
18. Quantum Mechanics, S. P. Singh,M. K. Bagade, Kamal Singh, S. Chand & company Ltd, New Delhi

B.Sc. Part-III Semester-V
PHYSICS Paper-XI
DSE-E3 Classical Mechanics and Classical Electrodynamics
Theory: 36 Hours (45 Lectures of 48 minutes)
Marks -50 (Credits: 02)

UNIT-I

1.Lagrangian Formulation (10 hour)

Constraints, Degrees of freedom, Generalized coordinates, Principle of virtual work, D'Alembert's principle, Lagrange's equation from D'Alembert's principle, Applications of Lagrange's equation to a particle in space, Atwood's machine and a bead sliding on uniformly rotating wire under force free condition.

2.Techniques of Calculus of Variation (8 hour)

Hamilton's principle, Deduction of Hamilton's principle from D'Alembert's principle, Deduction of Lagrange's equation from Hamilton's principle, Applications-shortest distance between two points in a plane, Brachistochrone problem.

UNIT- II

1.Special Theory of Relativity (12 hours)

Inertial and non-inertial reference frames, Galilean transformation equations, Michelson-Morley experiment, postulates of special theory of relativity, Lorentz transformation equations, Relativistic addition of velocities, Length contraction, Time dilation, Variation of mass with velocity, Mass-energy relation.

2. Charged Particles Dynamics (6 hours)

Poisson's and Laplace's equations and their physical significance, Laplace's equation in one dimension and its solutions, Motion of charged particle - in uniform electric field E , magnetic field B , Crossed uniform electric field E and magnetic field B .

Reference Books

1. Classical Mechanics, Goldstein Herbert, NarosaPubli./ Pearson Edu. 2018
2. Classical Mechanics, Gupta, Kumar and Sharma, Pragati Praka.2012
3. Introduction to Classical Mechanics, Nikhil Ranjan Roy, S Chand Publ. 2016
4. Introduction to Classical Mechanics, Takwale R.G., Puranik P. S., Tata McGraw 1979
5. Classical Mechanics, Panat P.V., NarosaPubli. 2016
6. Atomic physics, J B Rajam S Chand
7. Concepts of Modern Physics, Arthur Beiser, McGraw Hill
8. Introduction to Special Relativity, Robert Resnick, Wiley India
9. Classical Electrodynamics, Puri S.P., Tata McGraw/Alpha Science 2011
10. Classical Electrodynamics, Jackson J. D., Wiley India , 2007
11. Electromagnetics, Laud B.B., New Age Interna. 2011

B.Sc. Part III-Semester-V

PHYSICS Paper-XII

DSE-E4 Digital and Analog Circuits and Instrumentation

Theory: 36 Hours (45 Lectures of 48 minutes)

Marks -50 (Credits: 02)

Unit-I

1.Digital Electronics (08 hours)

Review of basic logic gates, Derived logic gates (NOR, NAND, XOR and XNOR gates), NAND and NOR gates as universal gates, De Morgan's theorems, R-S flip flop, J-K flip-flop, Half adder, Full adder, 4 bit parallel binary adder.

2.TransistorsAmplifier and Sinusoidal Oscillators (10 hours)

Transistor Amplifier: Single stage transistor CE amplifier, D.C. and A.C. equivalent circuits, load line analysis-d.c. load line, a.c. load line and Q point.

Oscillator:Feedback in amplifiers and its types,theory of feedback oscillator, Barkhausen's criterion for sustained oscillations,Oscillatory circuit (tank circuit),essentials of transistor oscillator, sinusoidal oscillators-phase shift oscillator, Colpitts oscillator, Hartley oscillator, Crystal oscillator using transistors.

Unit-II

1. Cathode Ray Oscilloscope (8 hours)

Introduction to CRO, Block diagram of CRO, Principle, Construction and working of CRT, Applications of CRO: measurement of A.C. and D. C. voltages, periodic time, frequency and phase difference, Lissajous figures.

2. Operational Amplifier and Timer (10 hours)

Operational Amplifier: Differential amplifier and its type, Op-Amp, Block diagram of an Op- Amp. Op-Ampparameters, Characteristics of an ideal and practical Op-Amp (IC 741), Applications of Op-Amps: Inverting amplifier and Non-inverting amplifier, Adder, Subtractor, Differentiator, Integrator.

Timer IC:Block diagram of IC555, IC 555 Pin configuration, Applications of IC 555 as astable and monostablemultivibrator.

ReferenceBooks

1. Integrated Electronics, J. Millman and C.C. Halkias, 1991, Tata Mc-Graw Hill.
2. Electronic devices and circuits, S. Salivahanan and N. Suresh Kumar, 2012, Tata Mc-Graw Hill.
3. Microelectronic Circuits, M.H. Rashid, 2ndEdn.,2011, Cengage Learning.
4. Modern Electronic Instrumentation & Measurement Tech., Helfrick&Cooper,1990, PHI Learning
5. Digital Principles & Applications, A.P. Malvino, D.P. Leach &Saha, 7thEd.,2011, Tata McGraw Hill
6. Microelectronic circuits, A.S. Sedra, K.C. Smith, A.N. Chandorkar, 2014, 6thEdn., Oxford University Press.
7. Fundamentals of Digital Circuits, A. Anand Kumar, 2ndEdition, 2009, PHI Learning Pvt. Ltd.
8. OP-AMP and Linear Digital Circuits, R.A. Gayakwad, 2000, PHI Learning Pvt. Ltd.
9. Basic Electronics: A text lab manual, P.B. Zbar, A.P. Malvino, M.A. Miller, 1994, Mc-Graw Hill.
10. Electronics: Fundamentals and Applications, J.D. Ryder, 2004, Prentice Hall.
11. Electronic Principle, Albert Malvino, 2008, Tata Mc-Graw Hill.
12. A text book of Electronics, SantanuChattopadhyay, New Central Book Agency, Kolkata
13. Basic Electronics, 2ndEdition , B. Basavaraj, H. N. Shivashankar, Vikas Publishing house pvt. Ltd. New Delhi.
14. Electronic principles, V. K. Mehta
15. Basic Electronics, Bhargava and Gupta

B.Sc. Part-III Semester-VI
PHYSICS Paper-XIII
DSE-F1 Nuclear and Particle Physics
Theory: 36 Hours (45 Lectures of 48 minutes)
Marks -50 (Credits: 02)

Unit-I

1. General Properties of Nuclei and Nuclear Model (10 hours)

Constituents of nucleus and their intrinsic properties, Quantitative facts about size, mass, chargedensity (matter energy), binding energy, average binding energy and its variation with mass number, Liquid drop model approach, Semi empirical mass formula, Magic numbers.

2. Particle Accelerators (8 hours)

Need of accelerators, Cyclotron- construction, working, theory and its limitations, Principle of phase stable orbit, Synchrocyclotron - construction and working, Synchrotrons- electron synchrotron and proton synchrotron, Betatron - principle, construction and working condition, expression of energy gain.

Unit-II

1. Nuclear Detectors (10 hours)

Ionization chamber, Geiger Muller counter- construction, working and theory, dead time and recovery time, quenching mechanism, Construction of photo-multiplier tube (PMT), Scintillation detector-principle, construction and working, Wilson cloud chamber, Semiconductor detector, Cerenkov radiations, Cerenkov detector.

2. Particle Physics (8 hours)

Particle interactions, Classification of elementary particles, Symmetries and conservation laws- energy, momentum, angular momentum and parity, Baryon number, Lepton number, Concept of quark model.

ReferenceBooks

1. Introductory nuclear Physics, Kenneth S. Krane (Wiley India Pvt. Ltd., 2008).
2. Concepts of nuclear physics, Bernard L. Cohen. (Tata McGraw Hill, 1998).
3. Introduction to the physics of nuclei & particles, R.A. Dunlap. (Thomson Asia, 2004)
4. Introduction to Elementary Particles, D. Griffith, John Wiley & Sons
5. Quarks and Leptons, F. Halzen and A.D. Martin, Wiley India, New Delhi
6. Basic ideas and concepts in Nuclear Physics - An Introductory Approach by K. Heyde (IOP-Institute of Physics Publishing, 2004).
7. Radiation detection and measurement, G.F. Knoll (John Wiley & Sons, 2000).
8. Theoretical Nuclear Physics, J.M. Blatt & V.F. Weisskopf (Dover Pub. Inc., 1991)
9. Nuclear Physics by John Lilley, The Manchester Physics Series – Wiley
10. Nuclear Physics by S. B. Patel, New age international (p) lit. Publishers New Delhi.
11. Modern Physics by R. Murugesan, S. Chand & company Ltd, Ram Nagar New Delhi
12. Nuclear Physics by D. C. Tayal, Himalaya Publishing house
13. Concept of modern physics by Arthur Beiser, Tata McGraw- Hill publishing company ltd. New Delhi
14. Atomic and nuclear structure by D. K. JHA, Discovery publishing house New Delhi
15. Nuclear energy by D. K. JHA Discovery publishing house New Delhi
16. Nuclear physics by S. N. Ghoshal, S. Chand & company Ltd, Ram Nagar New Delhi

B.Sc. Part-III Semester-VI
PHYSICS Paper-XIV
DSE-F2 Solid State Physics
Theory: 36 Hours (45 lectures of 48 min)
Marks-50 (Credits: 02)

Unit-I

1. Crystal Structure (10 hours)

Solids: amorphous, polycrystalline and crystalline materials; lattice, basis, unit cell- primitive, non-primitive unit cell, symmetry operations, symmetry elements of cube, Bravais lattice in two and three dimensions, Miller indices, Miller indices and inter-planer spacing, Simple crystal structures: SC, BCC, FCC and HCP (Co-ordination number, atomic radius, atoms per unit cell and packing fraction)

2. X-Ray Diffraction (08 hours)

Reciprocal lattice and its properties, Brillouin zone, Diffraction of X-rays by crystals, Ewald construction, Bragg's law in reciprocal lattice, Experimental methods in X-ray diffraction (Laue method, rotating crystal method, powder photograph method), Analysis of cubic crystal by powder method.

Unit-II

1. Magnetic Properties of Matter (10 hours)

Classical Langevin theory of diamagnetic and paramagnetic materials, Quantum mechanical treatment of paramagnetism, Curie's law, Weiss theory of ferromagnetism and ferromagnetic domains, Explanation of B-H curve, Hysteresis and energy loss.

2. Elementary Band Theory of Solids (8 hours)

Concept of density of states, Bloch theorem (statement only), Kroning-Penny model, Origin of energy gap, Velocity of electrons according to band theory, Effective mass of an electron, Distinction between metals, semiconductors and insulators, Hall Effect - Hall voltage and Hall Coefficient.

Reference Books

1. Introduction to Solid State Physics, Charles Kittel, 8th Ed., 2004, Wiley India Pvt. Ltd.
2. Elements of Solid State Physics, J.P. Srivastava, 2nd Ed., 2006, Prentice-Hall of India
3. Introduction to Solid, Leonid V. Azarov, 2004, Tata Mc-Graw Hill
4. Solid State Physics, Neil W. Ashcroft and N. David Mermin, 1976, Cengage Learning
5. Solid State Physics, Rita John, 2014, Mc-Graw Hill
6. Solid State Physics, Adrianus J. Dekker, Macmillan Publishers India Ltd.
7. Solid State Physics, M.A. Wahab, 3rd Ed., 2018, Narosa Publishing House Pvt. Ltd.
8. Solid State Physics, S.O. Pillai, 5th Ed., New Age International (P) Ltd., Publishers.
9. Fundamentals of Solid State Physics, Saxena-Gupta-Saxena, (Pragati Prakashan Meerut)
10. Solid State Physics, R. L. Singhal
11. Solid State Physics, C.M. Kachhava (Tata McGraw Hill Publication)
12. Elements of X-ray diffraction, B.D. Cullity and S. Stock
13. Solid state electronic devices, B.G. Streetman & S.K. Banerjee, 5th Ed. [PHI Learning Delhi.

B.Sc. Part-III Semester-VI

PHYSICS Paper-XV

DSE-F3 Atomic and Molecular Physics and Astrophysics

Theory: 36 Hours (45 Lectures of 48 minutes)

Marks -50 (Credits: 02)

UNIT-I

1. Atomic Spectra

(09 hours)

Observed hydrogen fine structure, Spectral notations and optical spectral series for doublet structure, Spectrum of sodium and its doublet fine structure, Selection and intensity rules for fine structure doublets, Normal order of fine structure doublets, Electron spin-orbit interaction, Normal and anomalous Zeeman effect and their explanation from vector atom model, Lande's g factor.

2. Molecular Spectra

(09 hours)

Molecular bond, Electron sharing, H_2^+ molecular ion, The hydrogen molecule, Rotational energy levels, Rotational spectra, Vibrational energy levels, Vibrational spectra, Vibration – rotation spectra, Electronic spectra of diatomic molecules.

UNIT-II

1 Raman Spectra

(4 hours)

Raman Effect, Characteristic properties of Raman lines, Classical and quantum theory of Raman Effect, Difference between Raman spectra and infrared spectra.

2. Structure of Universe:

(08 hours)

Big-Bang theory, Steady state theory, Oscillating theory, Hubble law, Cosmological tests, Milky Way galaxy, Origin of solar system - Condensation theory; arguments for and against the theory.

3. Stellar Evolution

(06 hours)

The H–R Diagram, Evolution of main sequence stars - Red giants and White dwarfs, Evolution of more massive stars- Supernova, Neutron star, Black hole, Surface of the Sun, Sunspots, Sunspot cycle.

Reference books

1. Atomic and Nuclear Physics – H. Semat and T. E. Albright.
2. Introduction to Atomic Spectra – H. E. White.
3. Concepts of Modern Physics – Arthur Beiser.
4. Perspectives of Modern Physics – Arthur Beiser.
5. Spectroscopy (Atomic and Molecular) – Gurdeep Chatwal, Sham Anand.
6. Astronomy – Fundamentals and Frontiers – Robert Jastrow and M. H. Thompson
7. Astronomy – Frank Bash.
8. Foundation of Astronomy, Michael A. Seeds, 10th edition, Thomson Learning, Inc., USA, 2008.

B.Sc. Part-III Semester-VI
PHYSICS Paper-XVI
DSE-F4 Energy Studies and Materials Science
Theory: 36 Hours (45 lectures)
Marks 50 (Credits: 02)

UNIT-I

1. Energy and Wind Energy (8 hrs)

Energy, Forms of energy, Man and environment, Energy chains, Classification of energy resources, Energy demands, Age of renewable and alternatives, Wind energy, Wind energy chains, Wind energy quantum, Planning of wind farm, Wind power density, Efficiency factor of wind turbine (P-H graph), Power of wind turbine for a given incoming wind velocity, Types of a wind turbine generator unit, Horizontal axis propeller type wind turbine generator unit.

2. Solar Energy (8 hrs)

Solar energy, Solar energy spectrum (UV, Visible and IR), Utilization of solar energy-thermal route, photovoltaic route, Essential subsystems in solar energy plant, Solar constant, Clarity index, Solar insolation, Solar energy from satellite station through microwave to earth station, Solar photovoltaic systems, Merits and limitations of solar PV systems, Prospects of solar PV systems, Power of a solar cell and solar PV panel.

3. Biomass Energy (2 hrs)

Origin of biomass, Biomass energy resources (biomass from cultivated crops, biomass from waste organic matter), Biomass conversion process (biochemical conversion-anaerobic digestion and fermentation)

UNIT-II

1. Superconductivity (6 hrs)

Idea of superconductivity, Critical temperature, Critical magnetic field, Meissner effect, Type-I and Type-II superconductors, London equation and penetration depth, Isotope effect, Application (magnetic levitation)

2. Nanotechnology (12 hrs)

Introduction to nanoscience and nanotechnology, Length scales relevant to nanoscience, Nanostructures: 1D, 2D and 3D nanostructures, Size effects in nanosystems, Quantum

confinement, Synthesis of nanostructured materials(Top down and bottom up approach), Photolithography, Ball milling,Nucleation and growth, Applications of nanotechnology (Spintronics, Molecular electronics, Nanobiotechnology)

ReferenceBooks

1. Energy Technology – Non-conventional, Renewable and Conventional – S. Rao and Dr. Parulekar.
2. Non-conventional Energy sources - G. D. Rai (4th edition), Khanna Publishers, Delhi.
3. Solar Energy - S.P. Sukhatme (second edition), Tata Mc.Graw Hill Ltd, New Delhi.
4. Solar Energy Utilization - G. D. Rai (5th edition), Khanna Publishers, Delhi.
5. Non-conventional Energy Sources – G. D. Rai (Khanna Publishers).
6. Elements of Material Science and Engineering - I.H.Vanvlach (4th Edition)
7. Material Science and Engineering - V. Raghva
8. Material science and metallurgy for Engg.-Kodigire V. D. Everest publication house, Pune
9. Material Science and Engg. - 5th Edition- V. Raghavan PHI Learning Pvt. Ltd. Delhi
- 10.Nanotechnology: Principles and Practices,Sulbha K Kulkarni (2ndEdition), Capital Publishing Co. New Delhi.
- 11.Science at the Nanoscale: An Introductory Textbook, Chin Wee Shong, Chornghaur Sow, Andrew T. S. Wee (Pan Stanford Publishing Pte. Ltd.)
12. Introduction to Nanoscience, S.M. Lindsay (Oxford University press)

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B.Sc.Part III Physics Laboratory Experiments

Total Marks: 200 Credits: 08

- **Group-I**

1. Resonance pendulum
2. S.T. of soap solution
3. Surface tension of mercury by Fergusson modified method
4. γ and η using Flat Spiral Spring
5. γ by Koenig's method
6. γ by Cornu's spiral
7. C program to arrange the given set of numbers in ascending/descending order
8. C program to find largest/smallest number from a given set of numbers
9. Scilab Expt. 1 (problem from Quantum Mechanics)
10. Scilab Expt. 2 (problem from Quantum Mechanics)

- **Group-II**

1. Cardinal points by turn table method
2. Cardinal points by Newton's method
3. Refractive index of glass by Brewster's law
4. Diffraction at a Single Slit
5. Diffraction at cylindrical obstacle
6. Lloyd's single mirror
7. Double refracting prism
8. Diameter of Lycopodium powder
9. Spherical aberration
10. Absorption spectrum of a liquid (KMnO_4 solution)

- **Group-III**

1. Self Inductance by Owen's Bridge
2. Measurement of B_H , B_V and θ using Earth Inductor /Hysteresis by magnetometer method
3. Mutual inductance using Ballistic galvanometer.
4. Resistance of B.G. by half deflection method
5. e/m of Electron By Thomson's Method/Calibration of wire by Carey Foster bridge
6. Calibration of wire by Griffith's method

7. Absolute capacity of condenser
8. I-V characteristics of Solar Cell
9. Band gap energy of semiconductor using p-n junction diode
10. Determination of Plank's constant by using LED

• **Group-IV**

1. To verify the truth tables of NAND, NOR, Ex-OR and Ex-NOR gates by using basic gates with IC-74 series.
2. To verify the De-Morgan's theorems by using IC-74 series.
3. To design a single stage CE amplifier of given gain using voltage divider bias.
4. To built and test Colpitts oscillator using BJT.
5. To built and test phase shift oscillator using BJT.
6. To determine A.C. and D.C. sensitivity of the C.R.O. and to measure unknown frequency.
7. To design and test an astable multivibrator using IC-555 Timer.
8. To design and test monostable multivibrator using IC-555 Timer.
9. To study Op-amp as an inverting amplifier.
10. To study Op-amp as Schmitt trigger.

Skill Testing Experiments

• **Group-V-A**

1. Study of divergence of LASER beam
2. Measurement of wavelength of LASER using plane diffraction grating
3. Schuster's method and optical leveling of spectrometer
4. Obtaining Biprism fringes without lateral shift
5. Measurement of distance between two coherent sources in Biprism experiment
6. Polar graph using photocell/photovoltaic cell
7. Study of quantum tunneling effect using tunnel diode
8. Testing of electronic components
9. C program – Edit, save and execute given C program
10. C program – Edit, save and execute given C program

- **Group – V-B**

1. Radius of Capillary bore using mercury thread
2. Determination of lattice constant using given XRD powder pattern
3. Estimation of errors
4. Measurement of phase shift of RC network using CRO
5. Study of Half and Full adder
6. Simplification of digital circuit using Boolean laws (paper-work).
7. Measurement of resistance of galvanometer (Kelvin's method)
8. Electrical wiring of bulb, switch and plug.
9. Tracing of given electronic circuit/ build the given circuit using breadboard
10. Assembling of given electronic circuit(soldering method)

- **Group VI: Assessment of Annual Work of a Student**

1. Certified Laboratory Journal.
2. Study Tour Report.
3. Seminar Report (2 Seminars) / Project work.

- **Reference Books for practical**

1. Advanced Practical Physics for students, B.L. Flint & H.T. Worsnop, 1971, Asia Publishing House.
2. Advanced level Physics Practical, Michael Nelson and Jon M. Ogborn, 4th Edition, reprinted 1985, Heinemann Educational Publishers
3. A Text Book of Practical Physics, Indu Prakash and Ramakrishna, 11th Edition, 2011, Kitab Mahal, New Delhi.
4. B.Sc. Practical Physics, C.L.Arora, S.Chand & Company Pvt.Ltd., New Delhi
5. B.Sc. Practical Physics, Harman Singh, Hemane, 2012 Edition.

- **Revised Scheme of Practical Examination for B. Sc. Part – III**

1. Practical examination will be conducted annually.
2. Practical examination will be conducted for three days per batch.
3. The examination will be conducted in two sessions per day and each session will be of three hours duration.

4. Every candidate should perform one experiment each from Groups I to IV and one experiment each from Group V-A and Group V-B (total 6 experiments).
5. Study tour anywhere in India is compulsory.
6. At least eighty percent practical should be completed by the student.
7. The marks distribution for practical is as below.

Practical groups	Marks
Group I	30
Group II	30
Group III	30
Group IV	30
Group VA-15, Group VB-15	30
Group VI	
I) Certified laboratory journal (certified Journal- 10 marks, neatness-5 marks, punctuality- 5 marks)	20
II) Study Tour Report	10
III) Seminar Report / Project Report	20
Total Marks	200

Nature of Question Paper

Theory: Time -2 hours, Marks-50

Question 1: Select the correct alternative (Compulsory 10 questions) 10 marks

(Four alternatives for each question)

Question 2: (Attempt any Two out of three) 20 marks

(Long answer type)

Question 3: (Attempt any four out of six) 20 marks

(Short answer type)

- **Note:** Equal weightage should be given to each unit.

SHIVAJI UNIVERSITY, KOLHAPUR.



Accredited By NAAC with 'A' Grade

Revised Syllabus For

B.Sc Part- III

Chemistry

Syllabus to be implemented from

June, 2020 onwards.

INTRODUCTION

This syllabus is prepared to give the sound knowledge and understanding of chemistry to undergraduate students at last year of the B.Sc. degree course. The goal of the syllabus is to make the study of chemistry as stimulating, interesting and relevant as possible. The syllabus is prepared by keeping in mind the aim to make students capable of studying chemistry in academic and industrial courses and to expose the students, to develop interest in them in various fields of chemistry. The new and updated syllabus is based on disciplinary approach with vigour and depth taking care the syllabus is not heavy at the same time it is comparable to the syllabi of other universities at the same level. The syllabus is prepared after discussions of number of faculty members of the subject and by considering the existing syllabi of B.Sc. Part-I, II & III, new syllabi of XIth & XIIth standards, syllabi of NET and SET exams. U.G.C. model curriculum, syllabi of different entrance examination and syllabi of other Universities.

The units of the syllabus are well defined and the scope is given in detail. The periods required for units are given. The lists of reference books are given in detail.

OBJECTIVES

1. To promote understanding of basic facts and concepts in Chemistry while retaining the excitement of Chemistry
2. To make students capable of studying Chemistry in academic and Industrial courses and to expose the students to different processes used in Industries and their applications.
3. To expose the students to various emerging new areas of Chemistry and apprise them with their prevalent in their future studies and their applications in various spheres of chemical sciences.
4. To develop problem solving skills in students.
5. To developed ability and to acquire the knowledge of terms, facts, concepts, processes, techniques and principles of subjects.
6. To develop ability to apply the knowledge of contents of principles of chemistry.
7. To inquire of new knowledge of chemistry and developments therein.
8. To expose and to develop interest in the fields of chemistry
9. To develop proper aptitude towards the subjects
10. To develop the power of appreciations, the achievements in Chemistry and role in nature and society.
11. To develop skills required in chemistry such as the proper handling of apparatus and chemicals

Shivaji University, Kolhapur
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To be implemented from June – 2020

Equivalence

Sr. No.	Title of old paper (Syllabus implemented from June-2015)	Title of new paper (To be implemented from June-2020)
1	Paper – IX & XIII Physical Chemistry	Paper IX DSE-E5 and XIII DSE-F5 Inorganic Chemistry
2	Paper – X & XIV: Inorganic Chemistry	Paper- X DSE-E6 and XIV DSE-F6 Organic Chemistry
3	Paper-XI & XV: Organic Chemistry	Paper XI DSE-E7 and XV- DSE-F7 Physical Chemistry
4	Paper-XII & XVI: Analytical & Industrial Chemistry	Paper XII-DSE-E8 and XVI DSE-F8: Analytical & Industrial Chemistry

A repeater candidate, if any, will be allowed to appear for practical examination as per old course up to March / April 2021 examination.

List of Laboratory Equipments

Apparatus & Equipments

1. Digital balance with 1 mg accuracy
2. Conductometer
3. Potentiometer
4. pH Meter
5. Polarimeter
6. Colorimeter
7. Thermostat
8. Electric Oven
9. Suction Pump
10. Crucible Heater
11. IR Lamp
12. Magnetic stirrer
13. Buckner funnel
14. Water bath / Thermostat.
15. Platinum electrode
16. Glass electrode
17. Silver, Zinc, Copper electrodes
18. Conductivity cell
19. Distilled water plant.
20. Refractometer
21. Freeze
22. Deep Freeze
23. H₂S Apparatus
24. Muffle Furnace
25. Magnetic Stirrer

Glassware & Porcelain ware:

1. Burette (25/50 ml)
2. Micro burette (10 ml)
3. Pipette (5 ml, 10 ml, 25 ml)
4. Graduated Pipette (1/2/5/10 ml)
5. Conical flask (100 ml, 250 ml)
6. Beakers (100 ml, 250 ml, 500 ml)
7. Volumetric flask (25 ml, 50 ml, 100 ml, 250 ml)
8. Gooch Crucible / Sintered glass Crucible
9. Silica Crucible
10. Watch glass
11. Glass tubing
12. Glass Funnel (3")
13. Gas jar
14. Glass rod
15. Test Tubes (12 x 100, 5 x 5 x 8)
16. Evaporating dish
17. TLC Unit
18. Measuring cylinder
19. Thiele's tubes
20. Fusion Tube
21. Capillary tube
22. Stopper bottle
23. Thermometer (1/10°, 360°)
24. Water condenser
25. Distillation flask (100 ml/ 250 ml)
26. Titration tiles.
27. Asbestos sheet.
28. Desiccators
29. Clay pipe triangle

Iron & Wooden ware:

1. Burners
2. Tripod stand
3. Iron stand
4. wire gauze
5. Burette stand
6. Test tube stand
7. Pair of tongs
8. Test tube holder
9. Spatula
10. Copper foil

Chemicals: All the chemicals required for experiments are mentioned in the syllabus.

Others:

1. Filter papers (Kalpi)
2. Whatman Filter paper No. 1, 40, 41 and 42.

Lab Safety Precautions / Measures in Chemistry Laboratory:

Part-I: Personal Precautions

1. All personnel must wear safety Goggles at all times.
2. Must wear the Lab. Aprons / Lab jacket and proper shoes.
3. Except in emergency, an over-hurried activity is forbidden.
4. Fume cupboard must be used whenever necessary.
5. Eating, Drinking and Smoking in the laboratories strictly forbidden.

Part-II: Use of safety and Emergency Equipments –

1. First aid kits.
2. Sand Bucket.
3. Fire extinguishers (dry chemical and carbon dioxide extinguisher).
4. Chemical storage cabinet with proper ventilation.
5. Material safety data sheets
6. Management of local exhaust system and fume hoods.
7. Sign in register if using instruments.

Nature of Theory Question Papers

N.B. The question paper should cover the entire syllabus. Marks allotted to questions should be in proportion to the lectures allotted to respective units.

Papers Semester V: IX-DSE-E5, X-DSE-E6, XI- DSE-E7, XII- DSE-E8,

Semester VI: XIII- DSE-F5, XIV-DSE-F6, XV-DSE-F7 and XVI- DSE-F8

Total Marks 40

Question No.	Details	Marks	Marks of Options
1.	Answer in one sentence (One mark for each question).	4	-
	Multiple choice questions (One mark for each question)	4	-
2.	Long answer type questions (2 out of 3)	20	10
3.	Short answer type questions (3out of 5)	12	08
	Total	40	18

SHIVAJI UNIVERSITY, KOLHAPUR
B.O.S. in Chemistry
B.Sc. Part – III
Semester CBCS Syllabus
To be implemented from June – 2020

General Structure

Theory Examination:

There will be four theory papers of 40 marks each for each semester. Their titles and distribution of marks are as follows.

Semester V : Papers IX-DSE-E5, X-DSE-E6, XI- DSE-E7, XII- DSE-E8,

Semester VI: Papers XIII- DSE-F5, XIV-DSE-F6, XV-DSE-F7 and XVI- DSE-F8

Paper – **IX** DSE-E5, & **XIII** DSE-F5: Inorganic Chemistry – 40 marks

Paper – **X** DSE-E6 & **XIV** DSE-F6: Organic Chemistry – 40 marks

Paper – **XI** DSE-E7 & **XV** DSE-F7: Physical Chemistry – 40 marks

Paper – **XII** DSE-E8 & **XVI** DSE-F8: Analytical and Industrial Chemistry – 40 marks

The duration of each theory paper for examination will be of 2 hours

Internal examination (Oral/Seminar/test/home assignment) will be conducted for 10 marks for each paper.

Practical Examination:

Practical examination will be of 200 marks. The distribution of marks will be as follows:

1. Physical Section : 60 marks
2. Inorganic Section : 65 marks
3. Organic Section : 60 marks
4. Project : 15 marks

Total: 200 marks

The duration of practical examination will be of three days – six and half hours per day.

CHEMISTRY
Semester Syllabus for B.Sc.-III

Theory

1. N. B. Figures shown in bracket indicate the total lectures required for the respective topics.
 2. The question paper should cover the entire syllabus. Marks allotted to questions should be in proportion to the lectures allotted to respective topics.
 3. All topics should be dealt with S.I. units.
 4. Study tour/industrial visit/visit to national institute or research laboratory is prescribed.
 5. Use of recent editions of reference books is essential.
 6. Use of scientific calculator is allowed.
 7. **Values required for spectral problems should be provided in the question paper.**
-

B.Sc. Part III (CBCS) SEMESTER-V
Paper No. DSE-E5, Chemistry Paper No. –IX
(Inorganic Chemistry)
(Theory Credits: 02, 30 hours, 37 lectures)

Expected Learning Outcomes:

Name of the topic	Expected Learning Outcome
1. Acids bases and Non-aqueous solvents	Useful for the study of role of acids and bases in Chemistry. The study of non –aqueous solvents is important to learn all chemical properties of solutes and from the research point of view.
2. Metal ligand bonding in transition metal complexes	Useful to understand geometry, stability and nature of bonding between metal ion and ligand in complexes.
3. Metals, semiconductors and Superconductors	The topic deals with the synthesis and the applications of the semiconductors and Superconductors in electrical and electronic devices.
4. Organometallic compounds	The structure, method of preparation and the applications of organo metallic compound in various fields are explained.
5. Catalysis	The classification, types, mechanism and applications of catalyst in industrial fields is explained.

Unit 1. Acids, Bases and Non aqueous Solvents

[8]

1.1 Introduction to theories of Acids and Bases-Arrhenius concept, Bronsted-Lowry concept, Lewis Concept, Lux-Flood Concept (definition and examples)

1.2 Hard and Soft Acids and Bases. (HSAB Concept)

1.2.1 Classification of acids and bases as hard, soft and borderline.

1.2.2 Pearson's HSAB concept.

1.2.3 Acid–Base strength and hardness-softness.

1.2.4 Applications and limitations of HSAB principle.

1.3 Chemistry of Non aqueous Solvents.

1.3.1 Introduction, definition and characteristics of solvents.

1.3.2 Classification of solvents.

1.3.3 Physical properties and Acid-Base reactions in Liquid Ammonia (NH₃) and Liquid Sulphur Dioxide (SO₂).

Unit 2. Metal Ligand bonding in Transition Metal Complexes

[10]

2.1 Crystal field theory (CFT)

2.1.1 Introduction: Shapes of d-orbitals, Basic assumptions of CFT.

2.1.2 Crystal field splitting of d-orbitals of metal ion in octahedral, tetrahedral, square planar complexes and John-Teller distortion.

2.1.3 Factors affecting the Crystal field splitting.

2.1.4 High spin and low spin octahedral complexes w.r.t. Co (II).

2.1.5 Crystal Field stabilization energy (CFSE), Calculation with respect to octahedral complexes only.

2.1.6 Limitations of CFT.

2.2 Molecular orbital theory (MOT).

2.2.1 Introduction.

2.2.2 MOT of octahedral complexes with sigma bonding such as $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$, $[\text{CoF}_6]^{3-}$, $[\text{Co}(\text{NH}_3)_6]^{3+}$.

2.2.3 Merits and demerits of MOT.

Unit 3. Metals, Semiconductors and Superconductors.

[9]

3.1 Introduction.

3.2 Properties of metallic solids.

3.3 Theories of bonding in metal.

i. Free electron theory.

ii. Molecular orbital theory (Band theory).

3.4 Classification of solids as conductor, insulators and semiconductors on the basis of band theory.

3.5 Semiconductors- Types - intrinsic and extrinsic and applications of semiconductors.

3.6 Superconductors: Ceramic superconductors - Preparation and structures of mixed oxide $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$.

3.7 Applications of superconductors.

Unit.4. Organometallic Chemistry.

[4]

- 4.1 Definition, Nomenclature of organometallic compounds.
- 4.2 Synthesis and structural study of alkyl and aryl compounds of Be and Al.
- 4.3 Mononuclear carbonyls -Nature of bonding in simple mononuclear carbonyls.: $[\text{Ni}(\text{CO})_4]$, $[\text{Fe}(\text{CO})_5]$, $[\text{Cr}(\text{CO})_6]$.

Unit 5. Catalysis

[5]

- 5.1 Introduction
- 5.2 Classification of catalytic reaction- Homogenous and Heterogeneous
- 5.3 Types of Catalysis.
- 5.4 Characteristics of catalytic reactions.
- 5.5 Mechanism of catalysis.
 - i. Intermediate compound formation theory.
 - ii. Adsorption theory.
- 5.6 Industrial applications of catalysis.

Reference Books:

1. Concise Inorganic Chemistry (ELBS, 5th Edition) – J. D. Lee.
2. Inorganic Chemistry (ELBS, 3rd Edition) D. F. Shriver, P. W. Atkins, C. H. Langford, Oxford University Press, 2nd Edition.
3. Basic Inorganic Chemistry : Cotton and Wilkinson.
4. Advanced Inorganic Chemistry (4th Edn.) Cotton and Wilkinson.
5. Concepts and Models of Inorganic Chemistry : Douglas and Mc. Daniel. 3rd Edition. John Wiley publication.
6. Structural principles in inorganic compounds. W. E. Addison.
7. Theoretical principles of Inorganic Chemistry – G. S. Manku.
8. Theoretical Inorganic Chemistry by Day and Selbina.
9. Co-ordination compounds. SFA Kettle.
10. Essentials of Nuclear Chemistry by H. J. Arnikar.
11. Nuclear Chemistry by M. N. Sastri.
12. Organometallic Chemistry by R. C. Mahotra, A. Sing, Wiley Eastern Ltd. New Delhi.
13. Inorganic Chemistry by A. G. Sharpe, Addison – Wesley Longman – Inc.

14. Principles of Inorganic Chemistry by Puri, Sharma and Kalia, Vallabh Publication. Pitampur Delhi.
15. Text book of Inorganic Chemistry by K. N. Upadhyaya Vikas Publishing House – New Delhi.
16. Inorganic Chemistry 3rd Edn G. L. Miessler and D.A. Tarr, pearson publication.
17. Co-ordination compounds by Baselo and Pearson.
18. UGC Inorganic chemistry by H.C. Khera, Pragati prakashan
19. UGC Advanced Inorganic Chemistry by Agarwal and Keemtilal, Pragati Prakashan

B.Sc. Part III (CBCS) SEMESTER-V
Paper No. DSE-E6 Chemistry Paper No. X
(Organic Chemistry)
(Theory Credits: 02, 30 hours, 38 lectures)

Expected learning Outcomes:

Name of the topic	Expected Learning Outcome
1. Introduction to Spectroscopy	Understanding of energy associated with electromagnetic radiation and its use in analytical technique.
2.UV-Vis Spectroscopy	Knowledge of chromophore, auxochrome and calculation of λ_{max} .
3. IR Spectroscopy	Knowledge of vibrational transitions, regions of IR spectrum, functional group recognition.
4.NMR Spectroscopy	Understanding of magnetic-non magnetic nuclei, shielding-deshielding, chemical shift, splitting pattern
5. Mass spectroscopy.	Knowledge of molecular ion, fragmentation pattern and different types of ions produced.
6. Combined Problems based on UV-Vis, IR, NMR and Mass Spectral data	Student will predict the structure of organic compound with the help of provided spectral data.

Unit 1. Introduction to Spectroscopy

[03]

- 1.1 Meaning of spectroscopy.
- 1.2 Nature of electromagnetic radiation: wavelength, frequency, energy, amplitude, wave number and their relationship.
- 1.3 Different units of measurement of wavelength and frequency.
- 1.4 Different regions of electromagnetic radiations.
- 1.5 Interaction of radiation with matter: absorption, emission, fluorescence and scattering.
- 1.6 Types of spectroscopy and advantages of spectroscopic methods.
- 1.7 Energy types and energy levels of atoms and molecules.

Unit 2. UV-Vis Spectroscopy

[05]

- 2.1 Introduction.
- 2.2 Beer-Lambert's law, absorption of UV radiation by organic molecules leading to different excitations.
- 2.3 Terms used in UV Spectroscopy: Chromophore, Auxochrome, Bathochromic shift, hypsochromic shift, hyperchromic and hypochromic effect.
- 2.4 Modes of electromagnetic transitions.
- 2.5 Effect of conjugation on position of UV band.
- 2.6 Calculation of λ_{max} by Woodward and Fischer rules for dienes and enones.
- 2.7 Colour and visible spectrum.
- 2.8 Applications of UV Spectroscopy.

Unit 3. IR Spectroscopy

[06]

- 3.1 Introduction.
- 3.2 Principles of IR Spectroscopy.
- 3.3 Instrumentation, schematic diagram.
- 3.4 Fundamental modes of vibrations, types and calculation.
- 3.5 Conditions for absorption of IR radiations.
- 3.6 Regions of IR spectrum, fundamental group region, finger print region.
- 3.7 Hook's Law for Calculation of vibrational frequency.
- 3.8 Factors affecting IR absorption frequency.

- 3.9 Characteristic of IR absorption of following functional groups a) alkanes, alkenes, alkynes b) alcohol and phenols c) ethers d) carbonyl compounds e) amines f) nitro compounds and g) aromatic compounds.

Unit 4. NMR Spectroscopy

[09]

- 4.1 Introduction.
- 4.2 Principles of PMR Spectroscopy.
- 4.3 NMR- Instrumentation, Schematic diagram.
- 4.4 Magnetic and nonmagnetic nuclei.
- 4.5 Chemical shift: definition, measurement, calculation, Factors affecting Chemical shift.
- 4.6 Shielding & deshielding.
- 4.7 Peak Integration.
- 4.8 Merits of TMS as PMR reference compound.
- 4.9 Coupling Constant.
- 4.10 Types of Coupling Constant.
- 4.11 Spin-spin splitting (n+1 rule).
- 4.12 Applications.

Unit 5. Mass Spectroscopy.

[08]

- 5.1 Introduction.
- 5.2 Principles of mass spectroscopy.
- 5.3 Mass spectrometer - schematic diagram.
- 5.4 Types of ions produced during fragmentation.
- 5.5 Nitrogen rule
- 5.6 Fragmentation patterns of: alkanes, alkenes, aromatic hydrocarbons, alcohols, phenols, amines and carbonyl compounds.
- 5.7 McLafferty rearrangement.
- 5.8 Applications.

Unit 6. Combined Problems based on UV, IR, NMR and Mass Spectral data.

[07]

Reference Books: (Use recent editions)

1. Absorption Spectroscopy of Organic Molecules by V.M.Parikh.
2. Spectroscopy of Organic compounds by P. S. Kalsi.
3. Elementary Organic Absorption Spectroscopy by Y. R. Sharma.
4. Instrumental Methods of Analysis (7th edition) by Willard, Merritt, Dean, Settle.
5. Spectroscopy by G. R. Chatwal and S. K. Anand
6. Spectroscopy by Pavia, Lampman, Kriz, Vyvyan
7. Organic Spectroscopy (2nd edition) by Jag Mohan
8. Organic Spectroscopy (3rd edition) by William Kemp
9. Instrumental Methods of Chemical Analysis by H. Kaur

B.Sc.-III (CBCS) SEMESTER V
Paper No. DSE- E7 Chemistry Paper No. XI
(Physical Chemistry)
(Theory Credits: 02, 30 hours, 38 lectures)

Expected learning Outcomes:

Name of the Topics	Expected Learning Outcome
1. Elementary quantum mechanics	Learning and understanding quantum Chemistry, Heisenberg's uncertainty principle, concept of energy operators (Hamiltonian), learning of Schrodinger wave equation. Physical interpretation of the ψ and ψ^2 . Particle in a one dimensional box
2. Spectroscopy	Knowledge about spectroscopy, Electromagnetic spectrum, Energy level diagram, Study of rotational spectra of diatomic molecules: Rigid rotor model, Microwave oven, vibrational spectra of diatomic molecules, simple Harmonic oscillator model, Raman spectra: Concept of polarizability, pure rotational and pure Vibrational Raman spectra of diatomic molecules, related knowledge will be gained by the students.
3. Photochemistry	Learning and understanding photochemical laws, reactions and various photochemical phenomena.
4. Solution	Learning the various types of solutions, relations vapour pressure, temperature relations.
5. Electromotive force	Learning and understanding the knowledge of emf measurements, types of electrodes, different types of cells, various applications of emf measurements.

Unit 1. Elementary quantum mechanics

[08]

- 1.1 Introduction.
- 1.2 Drawbacks of classical mechanics, Black body radiation, Photoelectric effect, Compton effect, Dual nature of matter and energy: De Broglie hypothesis.
- 1.3 The Heisenberg's uncertainty principle.
- 1.4 Concept of energy operators (Hamiltonian).
- 1.5 Derivation of Schrodinger wave equation, well behaved function.
- 1.6 Physical interpretation of the ψ and ψ^2 .
- 1.7 Particle in a one dimensional box.
- 1.8 Numerical problems.

Unit 2. Spectroscopy

[08]

- 2.1 Introduction.
- 2.2 Electromagnetic radiation.
- 2.3 Interaction of radiation with matter, Electromagnetic spectrum, Energy level diagram.
- 2.4 Rotational spectra of diatomic molecules: Rigid rotor model, moment of inertia, energy levels of rigid rotor, selection rules, Intensity of spectral lines, determination of bond length, isotope effect, Microwave oven
- 2.5 Vibrational spectra of diatomic molecules: Simple Harmonic oscillator model, Vibrational energies of diatomic molecules, Determination of force constant, overtones.
- 2.6 Raman spectra: Concept of polarizability, pure rotational and pure Vibrational Raman spectra of diatomic molecules, selection rules.
- 2.7 Comparative study of IR and Raman spectra, rule of mutual exclusion- CO_2 molecule.
- 2.8 Numerical problems.

Unit 3. Photochemistry

[06]

- 3.1 Introduction, Difference between thermal and photochemical processes.
- 3.2 Laws of photochemistry: i) Grotthus - Draper law ii) Lambert law iii) Lambert – Beer's law (with derivation) iv) Stark-Einstein law.

- 3.3 Quantum yield, Reasons for high and low quantum yield.
- 3.4 Factors affecting Quantum yield.
- 3.5 Photosensitized reactions – Dissociation of H_2 , Photosynthesis.
- 3.6 Photodimerisation of anthracene, decomposition of HI and HBr.
- 3.7 Jablonski diagram depicting various processes occurring in the excited state:
Qualitative description of fluorescence and phosphorescence.
- 3.8 Chemiluminescence, Electroluminescence and Bioluminescence.
- 3.9 Numerical problems.

Unit 4. Solutions

[06]

- 4.1 Introduction.
- 4.2 Ideal solutions, Raoult's law, Vapour pressure of ideal and non ideal solutions of miscible liquids.
- 4.3 Composition of liquid and vapour, vapour pressure and boiling point diagrams of miscible liquids. Distillation of miscible liquid pairs.
Type I : Systems with intermediate total vapour pressure (i.e. System in which b.p. increases regularly – Zeotropic).
Type II : Systems with a maximum in the total vapour pressure (i.e. System with a b.p. minimum – Azeotropic).
Type III : Systems with a minimum in the total vapour pressure (i.e. System with a b.p. Maximum – Azeotropic).
- 4.4 Solubility of partially miscible liquids.
 - i. Maximum solution temperature type: Phenol – water system.
 - ii. Minimum solution temperature type: Triethyl amine – water system.
 - iii. Maximum and minimum solution temperature type: Nicotine – water system.
 Distillation of partially miscible liquid pairs.
- 4.5 Vapour pressure and distillation of immiscible liquids, steam distillation.

Unit 5. Electromotive force

[10]

(Convention: Reduction potentials to be used)

- 5.1 Introduction
- 5.2 Thermodynamics of electrode potentials, Nernst equation for electrode and cell potentials in terms of activities.
- 5.3 E.M.F. series.
- 5.4 Types of electrodes: Description in terms of construction, representation, half cell reaction and emf equation for
 - i) Metal – metal ion electrode.
 - ii) Amalgam electrode.
 - iii) Metal – insoluble salt electrode.
 - iv) Gas – electrode.
 - v) Oxidation – Reduction electrode.
- 5.5 Reversible and Irreversible cells.
 - i. Chemical cells without transference.
 - ii. Concentration cells with and without transference.
 - iii. Liquid – Liquid junction potential: Origin, elimination and determination.
- 5.6 Equilibrium constant from cell emf, Determination of the thermodynamic parameters such as ΔG , ΔH and ΔS .
- 5.7 Applications of emf measurements :
 - i. Determination of pH of solution using Hydrogen electrode.
 - ii. Solubility and solubility product of sparingly soluble salts (based on concentration cells).
- 5.8 Numerical problems.

Reference Books:

1. Physical Chemistry by G. M. Barrow, International student Edition, Mc Graw Hill.
2. University General Chemistry by C.N.R. Rao, Macmillan.
3. Physical Chemistry by, R. A. Alberty, Wiley Eastern Ltd.
4. The Elements of Physical Chemistry by P. W. Atkins, Oxford.
5. Principles of Physical Chemistry by S. H. Maron, C. H. Prutton, 4th Edition.

6. Nuclear and Radiochemistry by Friedlander, Kennedy and Miller, John Wiley and Sons.
Wiley International edition.
7. Essentials of Nuclear Chemistry by H. J. Arnikar, 4th edition. Wiley Eastern.
8. Principles of Physical Chemistry by Puri, Sharma, Pathania, Shobhanlal Naginchand and Company, Jalandar.
9. Instrumental methods of chemical analysis by Chatwal and Anand, 5th Edition,
Himalaya Publication.
10. Fundamentals of molecular spectroscopy by C. N. Banwell – Tata Mc Graw-Hill.
11. Quantum Chemistry including molecular spectroscopy by B. K. Sen, Tata Mc
Graw -Hill.
12. Text Book of Physical Chemistry by S. Glasstone, Macmillan India Ltd.
13. Elements of Physical Chemistry by D. Lewis and S. Glasstone (Macmillan).
14. Principles of Physical Chemistry by Maron and Lando (Amerind).
15. Electrochemistry by S. Glasstone.
16. Physical Chemistry by W. J. Moore.
17. Basic Chemical Thermodynamics by V. V. Rao (Macmillan).
18. Essential of Physical Chemistry, Bahl and Tuli (S. Chand).
19. Text Book of Physical Chemistry, Soni and Dharmarha.
20. Advanced Physical Chemistry Gurdeep Raj GOEL Publishing House, 36th Edition

B.Sc. Part III (CBCS) SEMESTER-V
Paper No. DSE-E8 Chemistry paper No. XII
(Analytical Chemistry)
(Theory Credits: 02, 30 hours, 38 lectures)

Expected learning Outcomes:

Name of the topic	Expected Learning Outcome
1.Theory of Gravimetric Analysis	Learning and understanding the techniques of gravimetric analysis.
2.Flame Photometry	Knowledge of instrumental analysis of alkali and alkaline earth elements.
3.Colorimetry and Spectrophotometry	Understanding, working and applications of optical methods as an analytical tool.
4.Potentiometric titrations	Understanding theory and applications of potentiometric titrations.
5.Chromatographic techniques and Quality control	Understanding the basics of ion exchange and column adsorption chromatography, Quality control practices in analytical industries / laboratories.

Unit 1. Theory of Gravimetric Analysis

[08]

- 1.1 Introduction.
- 1.2 Gravimetric analysis by precipitation: nucleation, crystal growth, digestion/ageing, filtration, drying, ignition, weighing.
- 1.3 Optimum conditions for good precipitation.
- 1.4 Physical nature of precipitate.
- 1.5 Purity of precipitate: co-precipitation, post-precipitation.
- 1.6 Organic precipitants and their applications.

Unit 2. Flame Photometry

[06]

- 2.1 Introduction.
- 2.2 General principles of flame photometry.
- 2.3 Instrumentation: Block diagram, Burners (Premix and Lundergraph burners), mirror, slits, filters, detector (Photomultiplier tube).
- 2.4 Effect of solvent in flame photometry.

- 2.5 Experimental procedure of analysis (Standard addition and internal standard).
- 2.6 Interferences and Factors that influence the intensity of emitted radiation in a flame photometer.
- 2.7 Applications of flame photometry in real sample analysis.
- 2.8 Limitations of flame photometry.

Unit 3. Colorimetry and Spectrophotometry

[06]

- 3.1 Theory of colorimetry and spectrophotometry.
- 3.2 Lambert Beer's law, deviation from Beer's law.
- 3.3 Terms used in colorimetry and spectrophotometry.
- 3.4 Classification of methods of 'colour' measurement or comparison.
- 3.5 Photoelectric colorimeter method–Single beam photo-electric colorimeter.
- 3.6 Spectrophotometer method–Single beam direct reading spectrophotometer.
- 3.7 Determination of unknown concentration by using concentration-absorbance plot.
- 3.8 Applications of colorimetry and spectrophotometry.

Unit 4. Potentiometric titrations

[07]

- 4.1 Introduction.
- 4.2 Determination of pH.
- 4.3 Study of Quinhydrone and Glass electrodes and their use in determination of pH.
- 4.4 Potentiometric titrations: Classical and analytical methods for locating end points.
- 4.5 Acids- Bases titration with suitable example.
- 4.6 Redox titration with suitable example.
- 4.7 Precipitation titration with suitable example.
- 4.8 Basic circuit of direct reading potentiometer.
- 4.9 Advantages of potentiometric titrations.

Unit 5. Chromatographic techniques and Quality control

[10]

- 5.1 Introduction, classification.

- 5.2 **Column chromatography:** Introduction, types, Principle of adsorption column chromatography, solvent system, stationary phases, Methodology-Column packing, applications of sample, development, detection methods, recovery of components, Applications.
- 5.3 **Ion exchange chromatography:** Introduction, Principle, Types and properties of ion exchangers, Methodology-Column packing, application of sample, elution, detection/analysis, Applications.
- 5.4 **Concepts in Quality control**
- Introduction and Concept of quality.
 - Quality control.
 - Quality assurance.
 - ISO series.
 - Good laboratory practices.

References

1. Text Book of Quantitative inorganic analysis – A.I.Vogel.
2. Instrumental methods of chemical analysis –Willard, Merit & Dean.
3. Instrumentals methods of chemical analysis – Chatwal & Anand.
4. Vogel’s textbook of qualitative inorganic analysis – Bassett, Denny etc.
5. Textbook of qualitative inorganic analysis – Kolthoff and Sandel.
6. Fundamentals of analytical chemistry – Skoog and West.
7. Basic concepts of analytical chemistry – S.M. Khopkar.
8. Text book of qualitative chemical analysis – Vogel.
9. Handbook of quality assurance for the analytical chemistry laboratory – James P.Dux, Van Nostrand Reinhold, New York 1986.
10. Instrumental methods of chemical analysis – H.Kaur.
11. A text book of Quantitative chemical analysis Vogel’s by J.Mendham, R. C. Denney.
12. Quantitative Chemical Analysis – Daniel C. Harris.
13. Applying ISO 9000 Quality management system, International trade centre publishing genera, Indian edition printed by D. L. Shaha Trust.

B.Sc. Part III (CBCS) SEMESTER -VI
Paper No. DSE-F5, Chemistry Paper No. –XIII
(Inorganic Chemistry)
(Theory Credits: 02, 30 hours, 38 lectures)

Expected Learning Outcome

Name of the topic	Expected Learning Outcome
1.Coordination Chemistry	The topic focused on the mechanism of the reactions involved in inorganic complexes of transition metals. The students can understand the thermodynamic and kinetic aspects of metal complexes.
2.Nuclear Chemistry	The generation of nuclear power with the help of nuclear reactions is highlighted. Role of radio isotopes in medicinal, industrial and Archaeology fields is explained.
3.Chemistry of f-block Elements	The characteristics, properties and separation of lanthanides and Actinides are discussed. Synthesis and IUPAC Nomenclature of trans uranic elements (TU) explained.
4.Iron and Steel	The techniques involve in ore dressing and extraction of cast iron from its ore are discussed.
5.Bio –inorganic Chemistry	Role of various metals and non metals in our health are discussed.

Unit 1. Coordination Chemistry

[12]

A. Inorganic Reaction mechanism

- 1.1 Introduction.
- 1.2 Classification of Mechanism: Association, dissociation, interchange and the rate determining steps.
- 1.3 S_N^1 and S_N^2 reactions for inert and labile complexes.
- 1.4 Mechanism of substitution in cobalt (III) octahedral complexes.
- 1.5 Trans effect and its theories.
- 1.6 Applications of trans effect in synthesis of Pt (II) complexes.

B. Thermodynamic and Kinetic aspects of metal complexes.

- 1.7 Introduction.
- 1.8 Thermodynamic stability.

- 1.9 Kinetic Stability.
- 1.10 Relation between thermodynamic and kinetic stability.
- 1.11 Stepwise stability constant.
- 1.12 Factor affecting the stability of complexes.
- 1.13 Determination of Stability constant by Job variation, Mole ratio and Slope ratio method.

Unit 2. Nuclear Chemistry

[05]

- 2.1 Nuclear reactions and energetic of nuclear reactions.
- 2.2 Types of nuclear reactions
 - i. Artificial transmutation.
 - ii. Artificial radioactivity.
 - iii. Nuclear fission and its application in heavy water nuclear reactor.
 - iv. Nuclear fusion.
- 2.3 Use of Thorium, Uranium and Plutonium in atomic energy
- 2.4 Applications of radio-isotopes as tracers.
 - i. Chemical investigation – Esterification.
 - ii. Structural determination – Phosphorus pentachloride.
 - iii. Analytical Chemistry – Isotopic dilution method for determination of volume of blood.
 - iv. Age determination – Dating by C^{14} .

Unit 3. Chemistry of f- Block Elements

[09]

A | Lanthanides

- 3.1 Introduction.
- 3.2 Occurrence.
- 3.3 Electronic Configuration.
- 3.4 Oxidation State.
- 3.5 Lanthanide contraction.
- 3.6 Separation of Lanthanides by Ion exchange method.

B] Actinides

3.7 Position in periodic table.

3.8 Electronic configuration.

3.9 General methods of preparation of transuranic elements.

i. Neutron capture – followed by β decay.

ii. Accelerated projectile bombardment.

iii. Heavy ion bombardment.

3.10 IUPAC nomenclature of the super heavy elements with atomic number (Z) greater than 100.

Unit 4. Iron and Steel.

[07]

4.1 Occurrence and ores of iron.

4.2 Definition of the Terms- Ore, Mineral, Slag, Flux, Gangue, Matrix, Calcinations, Reduction, Roasting, Smelting and Leaching.

4.3 Extraction of iron by Blast furnace.

4.4 Steel: Definition and types.

4.5 Conversion of cast iron into steel by

i. Bessemer process.

ii. L.D. process.

4.6 Heat treatment on steel.

Unit 5. Bio-inorganic Chemistry.

[05]

5.1 Introduction.

5.2 Essential and trace elements in biological process.

5.3 Metalloporphyrins with special reference to hemoglobin and myoglobin.

5.4 Biological role of alkali and alkaline earth metal ions with special reference to Na^+ , K^+ and Ca^{2+}

Reference Books: (Use recent editions)

1. Concise Inorganic Chemistry (ELBS, 5th Edition) – J. D. Lee.

2. Inorganic Chemistry (ELBS, 3rd Edition) D. F. Shriver, P. W. Atkins, C. H. Langford, Oxford University Press, 2nd Edition.
3. Basic Inorganic Chemistry : Cotton and Wilkinson.
4. Advanced Inorganic Chemistry (4th Edn.) Cotton and Wilkinson.
5. Concepts and Models of Inorganic Chemistry : Douglas and Mc. Daniel. 3rd Edition. John Wiley publication.
6. Structural principles in inorganic compounds. W. E. Addison.
7. Theoretical principles of Inorganic Chemistry – G. S. Manku.
8. Theoretical Inorganic Chemistry by Day and Selbine.
9. Co-ordination compounds. SFA Kettle.
10. Essentials of Nuclear Chemistry by H. J. Arnikar.
11. Nuclear Chemistry by M. N. Sastri
12. Organometallic Chemistry by R. C. Mahrotra A. Sing, Wiley Eastern Ltd. New Delhi.
13. Inorganic Chemistry by A. G. Sharpe, Addison – Wesley Longman – Inc.
14. Principles of Inorganic Chemistry by Puri, Sharma and Kalia, Vallabh Publication. Pitampur Delhi.
15. Text book of Inorganic Chemistry by K. N. Upadhyaya Vikas Publishing House – New Delhi.
16. Inorganic Chemistry 3rd edn G. L. Miessler and D.A. Tarr, Pearson publication
17. Co-ordination compounds by Baselo and Pearson.
18. UGC Inorganic chemistry by H.C. Khera, Pragati prakashan
19. UGC Advance Inorganic Chemistry by Agarwal and Keemtilal, Pragati Prakashan

B.Sc. Part III (CBCS) SEMESTER-VI
Paper No. DSE-F6 Chemistry Paper No. XIV
(Organic Chemistry)
(Theory Credits: 02, 30 hours, 38 Lectures)

Expected learning Outcomes:

Name of the topic	Expected Learning Outcome
1. Reagents and Reactions in Organic Synthesis	Knowledge of reagents used in organic transformations and various reactions used in organic synthesis.
2. Retrosynthesis	Knowing basic terms used in retrosynthetic analysis, retrosynthesis of some organic compounds.
3. Electrophilic addition to $>C=C<$ and $-C\equiv C-$ bond	Student will learn addition reaction across $>C=C<$ bond w.r.t. hydrohalogenation, hydration hydroxylation, ozonolysis and addition of halogen, halogen acid, hydrogen, water, etc. across $-C\equiv C-$ bond.
4. Natural Products	Knowledge of terpenoids and alkaloids w.r.t. occurrence, isolation, characteristics and classification. Analytical and synthetic evidences of Citral and Nicotine.
5. Pharmaceuticals	Understanding classification of drugs, Qualities of ideal drug. Synthesis and uses of some representative drugs and Drug action of sulpha drugs.

Unit 1. Reagents and Reactions in Organic Synthesis

[10]

A) Reagents

Preparation and Applications of following reagents.

1. Lithium aluminium hydride $LiAlH_4$.
2. Raney Nickel.
3. Osmium tetroxide.

4. Selenium dioxide (SeO_2).
5. Dicyclohexyl Carbodiimide (DCC).
6. Diazomethane.

B] Reactions

Statement, General Reaction, Mechanism and Synthetic applications

1. Diels -Alder reaction.
2. Meerwein –Pondorff-Verley reduction.
3. Hofmann rearrangement.
4. Wittig reaction.
5. Wagner- Meerwein rearrangement.
6. Baeyer Villiger oxidation.
7. Problem based on above reactions.

Unit 2. Retrosynthesis

[06]

- 2.1 Introduction.
- 2.2 Recapitulation of basics of reaction mechanism and reagents.
- 2.3 Terms used- Target molecule (TM), Disconnection, Synthons, Synthetic equivalence, Functional group interconversion (FGI), one group disconnection (w. r. t. suitable examples).
- 2.4 Retrosynthetic analysis and synthesis of target molecules: Cinnamaldehyde, Cyclohexene, para methoxy acetophenone, Methyl-3-phenyl propionate, α,α -dimethyl benzyl alcohol, Paracetamol.

Unit 3. Electrophilic addition to $>\text{C}=\text{C}<$ and $-\text{C}\equiv\text{C}-$ bonds

[08]

A. Addition to Carbon-Carbon double ($>\text{C}=\text{C}<$) bond:

- 3.1 Introduction.
- 3.2 Examples of addition reactions.
- 3.3 Mechanism of electrophilic addition to $>\text{C}=\text{C}<$ bond, orientation & reactivity,
 - i. Hydrohalogenation.
 - ii. Anti-Markovnikoff's addition (peroxide effect).
 - iii. Rearrangements (support for formation of carbocation).

- iv. Addition of halogens.
- v. Addition of water.
- vi. Addition of hypohalous acids (HO-X).
- vii. Hydroxylation (formation of 1,2-diols).
- viii. Hydroboration-oxidation (formation of alcohol).
- ix. Hydrogenation (formation of alkane).
- x. Ozonolysis (formation of aldehydes & ketones).

B. Addition to Carbon-Carbon triple ($\text{C}\equiv\text{C}$) bond:

3.4 Introduction.

3.5 Examples of addition reactions.

3.6 Mechanism of electrophilic addition to $\text{C}\equiv\text{C}$ -bond.

- i. Addition of halogens.
- ii. Addition of halogen acids.
- iii. Addition of hydrogen.
- iv. Addition of water.
- v. Formation of metal acetylides.

Reference books:

1. Organic Reactions and Their Mechanisms P. S. Kalsi 3rd Revised edition.
2. Advanced organic Chemistry by B.S. Bahl & Arun Bhal (Reprint in 1997)
3. Organic Chemistry by Morrison and Boyd 6th edition.

Unit 4. Natural Products

[08]

A] Terpenoids:

- 4.1 Introduction, Occurrence, Isolation, General Characteristic, Classification.
- 4.2 General Methods for structure determinations.
- 4.3 Isoprene rule.
- 4.4 Analytical evidences and synthesis of Citral.

B] Alkaloids:

- 4.5 Introduction, Occurrence, Isolation, Classification, Properties.
- 4.6 General Methods for structure determination.

4.7 Analytical evidences and synthesis of Nicotine.

Unit 5. Pharmaceuticals

[06]

- 5.1 Introductio.
- 5.2 Classification.
- 5.3 Qualities of ideal drug.
- 5.4 Synthesis and uses of ethambutal, phenobarbitone, isoniazide, benzocaine, Chloramphenicol, paludrine.
- 5.5 Drug action of sulpha drugs.

Reference books:1

1. Advanced Organic Chemistry : Reactions, Mechanisms and structure by – Jerry March.
2. Reagents for Organic Synthesis by Louis F. Fieser , Mary Fieser -1967.
3. A Text book of Practical Organic Chemistry including Qualitative Organic Analysis by A. I.Vogel.
4. Mechanism and Structure in Organic Chemistry. April,1963 By Edwin S.Gould.
5. A text book of Organic Chemistry by Arun Bahl, B.S.Bhal Eighteenth Revised edition 2006.
6. A guidebook to mechanism in Organic Chemistry sixth Edition by Peter Syke.
7. Organic Synthesis: The Disconnection Approach by Stuart Warren.
8. Organic Synthesis Through Disconnection Approach by P. S. Kalsi
9. Fundamentals of Organic Synthesis the Retrosynthetic Analysis by Ratan Kumar Kar
10. Organic Reactions and Their Mechanisms P. S. Kalsi 3rd Revised edition.
11. Advanced organic Chemistry by B.S. Bahl & Arun Bhal (Reprint in 1997)
12. Organic Chemistry by Morrison and Boyd 6th edition.
13. Organic Chemistry Vol II Stereochemistry and the Chemistry of Natural Products (5th ed) by I. L.Finar.
14. Organic Chemistry Natural Products Vol I, by O. P.Agrawal
15. Industrial Chemistry-B.K. Sharma, Goyal publishing house,Mirut
16. Shreeves chemical process industries 5th Edition, G.T. Oustin, McGrawHill
17. Riegel`s hand book of Industrial chemistry, 9th Edition, Jems A.Kent
18. Industrial chemistry –R.K. Das, 2nd Edition,1976.

19. Synthetic drugs by M.S.Yadav,Campus book international.

B.Sc. III (CBCS) SEMESTER-VI
Paper No. DSE-F 7 Chemistry Paper No. XV
(Physical Chemistry)
(Theory Credits: 02, 30 hours, 37 Lectures)

Expected Program Outcomes:

Name of the Topics	Expected Learning Outcome
1. Phase equilibria	Learning and understanding of phase rule, learning of One component, Two component and Three component systems phase diagrams with suitable examples.
2. Thermodynamics	Knowledge about basic concept of Thermodynamics, free energy, Gibbs-Helmholtz equation and its applications, problem related with it.
3. Solid state chemistry	Learning and understanding Space lattice, lattice sites, Lattice planes, Unit cell. Laws of crystallography, Weiss indices and Miller indices, Cubic lattices and types of cubic lattice, planes or faces of a simple cubic system, Diffraction of X-rays, Derivation of Bragg's equation. Determination of crystal structure by Bragg's method. crystal structure of NaCl and KCl on the basis of Bragg's equation.
4. Chemical kinetics	Learning of kinetics, Simultaneous reactions such as i)opposing reaction ii)side reaction iii)consecutive reactions: iv) chain reaction v) explosive reaction
5. Distribution law	Learning and understanding the knowledge of distribution law, its modifications, applications of distribution laws, process of extraction, determination of solubility, distribution indicators, molecular weights.

Unit 1. Phase Equilibria

[07]

1.1 Introduction.

1.2 Gibbs phase rule : Phase rule equation and explanation of terms involved in the equation.

1.3 Phase diagram, true and metastable equilibria.

1.4 One component systems:

- i. Water system.
- ii. Sulphur system with explanation for polymorphism.

1.5 Two component systems:

- i. Eutectic system: (Ag – Pb system); Desilverisation of lead.
- ii. Freezing mixture: (KI – H₂O system).
- iii. Formation of compound with congruent melting point (FeCl₃ – H₂O).

1.6 Three component solid-liquid system:

- i. Development of triangular phase diagram: (Acetic acid – Chloroform – water system).

Unit 2. Thermodynamics

[09]

2.1 Introduction.

2.2 Free energy: Gibbs function (G) and Helmholtz function (A), Criteria for thermodynamic equilibrium and spontaneity.

2.3 Relation between ΔG and ΔH : Gibbs-Helmholtz equation.

2.4 Phase equilibria : Clapeyron – Clausius equation and its applications.

2.5 Thermodynamic derivation of law of mass action, Van't – Hoff isotherm and isochore.

2.6 Fugacity and activity concepts.

2.7 Partial molar quantities, Partial molar volume, Concept of chemical potential, Gibbs-Duhem equation.

2.8 Numerical problems.

Unit 3. The Solid State

[09]

3.1 Introduction: Space lattice, lattice sites, lattice planes, unit cell.

3.2 Laws of crystallography:

- i. Law of constancy of interfacial angles
- ii. Law of rational indices
- iii. Law of crystal symmetry.

3.3 Weiss indices and Miller indices.

- 3.4 Cubic lattice and types of cubic lattice, planes or faces of a simple cubic system, spacing of lattice planes.
- 3.5 Diffraction of X-rays, Derivation of Bragg's equation.
- 3.6 Determination of crystal structure by Bragg's method.
- 3.7 Determination of crystal structure of NaCl and KCl on the basis of Bragg's equation.
- 3.8 Numerical problems.

Unit 4. Chemical Kinetics

[06]

- 4.1 Introduction.
- 4.2 Simultaneous reactions such as
 - i. Opposing reaction: (Derivation of rate equation for first order opposed by first order expected).
 - ii. Side reaction.
 - iii. Consecutive reactions.
 - iv. Chain reaction.
 - v. Explosive reaction (Derivation of rate equation and Numerical problems are not expected).

Unit 5. Distribution law

[06]

- 5.1 Introduction, solute, solvent and solution, miscible and immiscible liquids.
- 5.2 Nernst distribution law and its limitations.
- 5.3 Modification of distribution law with respect to change in molecular state of solute (association and dissociation of solute in one of the solvent).
- 5.4 Applications of the distribution law
 - i. Process of extraction (derivation expected).
 - ii. Determination of solubility of solute in particular solvent.
 - iii. distribution indicators.
 - iv. determination of molecular weight of solute in different solvents.
- 5.5 Numerical problems.

Reference Books:

1. Physical Chemistry by G. M. Barrow, International student Edition, Mc Graw Hill.
2. University General Chemistry by C.N.R. Rao, Macmillan.
3. Physical Chemistry by, R. A. Alberty, Wiley Eastern Ltd.
4. The Elements of Physical Chemistry by P. W. Atkins, Oxford.
5. Principles of Physical Chemistry by S. H. Maron, C. H. Prutton, 4th Edition.
6. Nuclear and Radiochemistry by Friedlander, Kennedy and Miller, John Wiley and Sons. Wiley International edition.
7. Essentials of Nuclear Chemistry by H. J. Arnikar, 4th edition. Wiley Eastern.
8. Principles of Physical Chemistry by Puri, Sharma, Pathania, Shobhanlal Naginchand and Company, Jalandar.
9. Instrumental methods of chemical analysis by Chatwal and Anand, 5th Edition, Himalaya Publication.
10. Fundamentals of molecular spectroscopy by C. N. Banwell – Tata Mc Graw-Hill.
11. Quantum Chemistry including molecular spectroscopy by B. K. Sen, Tata Mc Graw -Hill.
12. Text Book of Physical Chemistry by S. Glasstone, Macmillan India Ltd.
13. Elements of Physical Chemistry by D. Lewis and S. Glasstone (Macmillan).
14. Principles of Physical Chemistry by Maron and Lando (Amerind).
15. Electrochemistry by S. Glasstone.
16. Physical Chemistry by W. J. Moore.
17. Basic Chemical Thermodynamics by V. V. Rao (Macmillan).
18. Essential of Physical Chemistry, Bahl and Tuli (S. Chand).
19. Text Book of Physical Chemistry, Soni and Dharmarha.
20. Advanced Physical Chemistry Gurdeep Raj GOEL Publishing House, 36th Edition

B. Sc. Part III (CBCS) SEMESTER-VI
Paper No. DSE-F8 Chemistry Paper No. XVI
(Industrial Chemistry)
(Theory Credits: 02, 30 hours, 38 lectures)

Expected learning Outcomes:

Name of the topic	Expected Learning Outcome
1.Sugar Industry	Learning and understanding the whole process of manufacture of sugar and byproducts of sugar industry.
2.Manufacture of industrial heavy chemicals	Learning and understanding of physico-chemical principles of production of ammonia, sulfuric acid, nitric acid and sodium carbonate along with its manufacturing plant.
3.Synthetic polymers	Understanding and learning the classification, synthesis and applications of various polymers.
4.Petroleum industry and eco-friendly fuels	Understanding the petroleum Industry, fuels and need of use of ecofriendly fuels.
5.Nanotechnology	Understanding and learning of nanotechnology including classification, optical properties, synthesis routes, characterization techniques and applications of nano-materials.

Unit 1. Sugar Industry

[07]

- 1.1 Introduction.
- 1.2 Manufacture of cane sugar in India: Extraction of juice, Clarification, Concentration, crystallization, centrifugation and other details of industrial process.
- 1.3 Byproducts of sugar industry.
- 1.4 Manufacture of Ethyl Alcohol from Molasses: by Fermentation.

Unit 2. Manufacture of Industrial Heavy Chemicals

[08]

- 2.1 Introduction
- 2.2 Manufacture of Ammonia (NH₃)
 - i. Physico-chemical principles.

ii. Manufacture by Haber's process.

2.3 Manufacture of Sulphuric acid (H_2SO_4)

i. Physico-chemical principles.

ii. Manufacture by Contact process.

2.4 Manufacture of Nitric acid (HNO_3)

i. Physico-chemical principles.

ii. Manufacture by Ostwald's process (Ammonia oxidation process).

2.5 Manufacture of Sodium carbonate (Na_2CO_3) (Washing soda).

i. Physico-chemical principles.

ii. Manufacture by Solvay process.

Unit 3. Synthetic Polymers

[08]

3.1 Introduction.

3.2 Classification.

i. Based on origin.

ii. Based on composition-organic, inorganic polymers.

iii. Based on method of preparation.

iv. Based on general physical properties.

v. Based on structure.

3.3 Addition Polymerization: Free radical addition and ionic addition polymerization.

3.4 Ziegler-Natta polymerization.

3.5 Methods of preparation and applications of some organic polymers: Polyethylene, polystyrene, polyvinyl chloride, Phenol-formaldehyde resin.

3.6 Conducting organic polymers: Synthesis and properties of Polyaniline, polypyrrole.

3.7 Applications of conducting organic polymers.

Unit 4. Petroleum industry and eco-friendly fuels

[07]

A] Petroleum industry

Introduction, occurrence, composition of petroleum, resources, processing of petroleum, calorific value of fuel, cracking, octane rating (octane number), cetane

number, flash point, petroleum refineries, applications of petrochemicals, synthetic petroleum, lubricating oils & additives.

B| Fuels

Fuels and eco-friendly fuels: liquid, gaseous fuel (LPG, CNG), fossil fuels, diesel, bio diesel, gasoline, aviation fuels. Use of solar energy for power generation.

Unit 5. Nanotechnology

[08]

- 5.1 Introduction of nanotechnology, history, Classification of nanoparticles based on size.
- 5.2 Optical properties of Nanomaterial's
 - i. Semiconducting NPs.
 - ii. Metallic NPs.
- 5.3 Synthetic Routes of nanomaterials: Top-down and bottom-up approaches.
- 5.4 Synthesis methods: Sol-gel, precipitation, chemical reduction, chemical vapor deposition, hydrothermal, electrodeposition.
- 5.5 Characterization of nanomaterials: X-Ray diffractometer, Scanning Electron Microscope, Transmission electron microscope.
- 5.6 Applications of nanotechnology.

References:

- 1. Industrial Chemistry-B.K. Sharma
- 2. Chemical process industries – Shrieve & Brink
- 3. Industrial chemistry – Kent
- 4. Industrial chemistry – Rogers
- 5. Industrial chemistry – R. K. Das
- 6. Mechanical chemistry – Burger
- 7. Nanotechnology: Principles and Practices – Sulbha Kulkarni
- 8. The Petroleum chemicals industry by R. F. Goldstine, e &Fn London
- 9. Fundamentals of petroleum chemical technology by P Below.
- 10. Petro Chemicals Volume 1 and 2 ; A Chauvel and Lefevrev ; Gulf Publishing company

Laboratory Course (Practicals)

N. B. (i) Use of Digital/Analytical/Chainometric/Single pan balance is allowed.

(ii) Use of Scientific calculator is allowed.

(iii) Use of Chart/Text book/Hand book of practical is allowed.

(iv) There will be a project having weightage of 15 marks.

Project should be in the following areas but focused on applications of Chemistry.

a) Society oriented

b) Daily use

c) Industry based

d) Analysis based

The project will be assessed by all the three examiners with equal weightage at the time of practical examinations.

The project may be completed individually or by a group of students not exceeding number three.

One copy of the project should be submitted at the time of examination. After assessment this copy will remain in the department.

INORGANIC CHEMISTRY

I) Gravimetric Estimations (G).

N. B. Any **two** experiments from G1 to G3 and any **two** experiment from G4 & G6.

G1. Gravimetric estimation of iron as ferric oxide (Fe_2O_3) from the given solution containing ferrous ammonium sulphate, copper sulphate and free sulphuric acid.

G2. Gravimetric estimation of zinc as zinc pyrophosphate from the given solution

containing zinc sulphate, ferrous ammonium sulphate and free sulphuric acid.

G3. Gravimetric estimation of barium as barium sulphate(BaSO_4) from the given solution containing barium chloride, ferric chloride and free hydrochloric acid.

G4. Gravimetric estimation of barium as barium chromate(BaCrO_4) from the given solution containing barium chloride, ferric chloride and free hydrochloric acid.

G5. Gravimetric estimation of nickel as bis (dimethylglyoximate) nickel (II) from the given solution containing nickel sulphate, ferrous ammonium sulphate and free Sulphuric acid.

G6. Gravimetric estimation of aluminium as aluminium oxinate potassium tris (8-hydroxy quinolato) aluminium (III) from the given solution containing potash alum ,copper sulphate and free sulphuric acid.

[For the gravimetric experiments, stock solution should be given in the range of 10 to 15 cm^3 and asked to dilute to 100 cm^3 (or the stock solution should be given in the range of 20 to 30 cm^3 and asked to dilute to 250 cm^3). Use 50 cm^3 of this diluted solution for estimation.]

II. Inorganic Preparations (P).

N. B. At least **six** preparations from the following with **percentage yield**:

P1. Preparation of potassium trioxalato aluminate (III).

P2. Preparation of Tetra ammine copper (II) chloride.

P3. Preparation of tris(thiourea) copper (I) sulphate.

P4. Preparation of potassium trioxalato ferrate (III).

P5. Preparation of chloropenta-ammine cobalt (III) chloride.

P6. Preparation of ammonium diamminetetraethiocyanato chromate (III) (Reineck's salt).

P7. Preparation of Potassium hexa nitro cobaltate (III).

P8. Preparation of ammonium trioxalato chromate (III).

P9. Preparation of hexathiourea plumbus (II) nitrate.

A) Percentage Purity

N. B. : Any **two** from the following.

V1. Determination of percentage purity of ferrous ammonium sulphate.

V2. Determination of percentage purity of tetrammine copper (II) sulphate.

V3. Determination of percentage purity of potassium (trioxalato-aluminate) (III).

B) Analysis of Commercial Sample.

N. B. Any **Three** from the following:

V5. Determination of percentage of Calcium in the given sample of milk powder or lime.

V6. Determination of amount of aluminum in the given solution of potash alum.

V7. Determination of titrable acidity in the given sample of milk or lassi.

V8. Determination of percentage purity of boric acid using supplied sodium hydroxide.

(Standard succinic or oxalic acid solution to be prepared to standardise the given sodium hydroxide solution.)

V9. To determine the amount of HCl in given of commercial samples.

C) Ion exchange method.

N. B. Any **two** from the following.

V10. Determination of amount of sodium present in the given solution of common salt using cation exchange resin (By Acid Base titration).

V11. Determination of amount of magnesium in the given solution containing (Mg^{2+} and Zn^{2+}) using anion exchange resin and standard solution of EDTA.

V12. Determination of amount of zinc in the given solution containing (Mg^{2+} and Zn^{2+})
using anion exchange resin and standard solution of EDTA.

Reference Books:

1. A text book of quantitative Inorganic Analysis - A. I. Vogel.
2. Text book of Quantitative Inorganic Analysis - Kolthoff and Sandell.
3. Experimental Inorganic Chemistry - Palmer W. G.
4. Advanced Practical Inorganic Chemistry - Adams and Raynor.
5. Manual in Dairy Chemistry - I.C.A.R. Sub-Committee on Dairy Education.
6. Chemical methods for environmental analysis - R. Ramesh and M. Anbu.

ORGANIC CHEMISTRY

I) Qualitative analysis

Separation of binary mixture and Identification of **one** component. (At least 08 mixtures)

Nature	1) Solid – Solid	: 4 mixtures
	2) Solid – Liquid	: 2 mixtures
	3) Liquid – Liquid	: 2 mixtures

1) Solid – Solid Mixtures:

One mixture from each the following types should be given:

i) Acid+Phenol	ii) Acid + Base
iii) Acid+Neutral	iv) Phenol +Base
v) Phenol+Neutral	vi) Base +Neutral

2) Solid – Liquid Mixtures

Mixture of type Neutral + Neutral or Acid + Neutral should be given.

3) Liquid – Liquid Mixtures

Mixture of type Neutral + Neutral or Base + Neutral should be

Given. Following compounds should be used for preparation of mixtures

- i) Acids: Benzoic acid, Phthalic acid, Salicylic acid, Cinnamic acid, Aspirin, Oxalic acid.
- ii) Phenols: α -naphthol, β -naphthol.
- iii) Bases: o-nitroaniline, m-nitroaniline, p-nitroaniline, aniline, o-toluidine and N, N-dimethylaniline.
- iv) Neutrals: Anthracene, acetanilide, m-dinitrobenzene, chloroform, carbon tetrachloride, acetone, nitrobenzene, ethyl acetate, ethyl benzoate, bromobenzene, urea and thiourea.

NB :

1. For Solid-Liquid and Liquid-Liquid mixtures avoid detection of type of mixture. Instead the weightage is given to detection of nature and separation of mixture.
2. Separation and qualitative analysis of the binary Mixtures should be carried out on microscale using microscale kits.

II) Quantitative analysis: Organic Estimations:(Any four)

1. Estimation of sucrose
2. Saponification value of oil.
3. To determine the amount of acid and amide present in the given mixture of acid and amide.
4. Determination of Molecular weight of monobasic/dibasic acid by volumetric method.
5. Estimation of unsaturation –to estimate the percentage purity of given olefinic compound by bromination method.

Note: Double burette method should be used for titration.

III) Organic Preparations: (Any four)

1. Multicomponent reaction - Preparation of Dihydropyrimidone.
2. Radical coupling reaction - Preparation of 1,1,2 bis-2naphthol.
3. Base catalyzed Aldol condensation- Preparation of Dibenzal propanone.
4. Diels Alder reaction- Reaction between Furan and Maleic acid
5. Benzil- Benzilic acid rearrangement reaction
6. Oxidation reaction – Preparation of Methyl phenyl sulfone.

IV) Preparation of Derivatives:

1. Picrate derivative (naphthalene and α -naphthol).
2. Iodoform (Acetone).
3. Osazone of Carbohydrates (Glucose).
4. Oxalate derivative (of Urea).
5. Nitrate derivative of Urea
6. 2,4-Dinitro phenyl hydrazone (carbonyl compounds)
7. Oxime derivatives (carbonyl compounds)

Or

Determination of structure of organic compound from given NMR spectra.

Ethanol, Ethyl acetate, Benzyl alcohol, Propanoic acid, Butanaldehyde, Ethyl benzoate, Isopropyl benzene, Propyl ether, n-pentane, Propene, Diethyl amine, 2-chloro butane.

NB: All preparations should be carried out by considering green Chemistry approach

1. Preparation of derivative should be carried out on small scale. The starting compound should not be given more than one gram.
2. Calculation of percentage practical yield in preparation is must.
3. Recrystallization of crude product and its melting point.
4. The product should be confirmed by TLC.
5. Assign reactions with mechanism.

Reference books:

1. Practical Organic Chemistry by – A.I.Vogel.
2. Practical Organic Chemistry by – O. P. Agarwal

PHYSICAL CHEMISTRY

I. Non instrumental Experiments:

A. Any one of the following

i) Partition Law.

To determine the partition coefficient of CH_3COOH between H_2O and CCl_4 .

ii) Viscosity.

To determine the viscosity average molecular weight of a polymer.

iii) Adsorption.

To investigate the adsorption of oxalic acid by activated charcoal and test the validity of Freundlich & Langmuir isotherms.

iv) Solubility.

To study the effect of addition of electrolyte (NaCl or KCl) on the solubility of Benzoic acid at room temperature.

B. Chemical kinetics. (Any four)

1. The study of energy of activation of first order reaction i.e. hydrolysis of methyl acetate in presence of 0.5 N HCl / $0.5 \text{ N H}_2\text{SO}_4$.
2. The study of energy of activation of second order reaction i.e. reaction between $\text{K}_2\text{S}_2\text{O}_8$ and KI (Equal concentrations).
3. The study of energy of activation of second order reaction i.e. reaction between $\text{K}_2\text{S}_2\text{O}_8$ and KI (Unequal concentrations).
4. To study the hydrolysis of methyl acetate by using its two concentrations in presence of 0.5 N HCl and hence find velocity constant of the reaction.
5. To study the effect of addition of electrolyte (KCl) on the reaction between $\text{K}_2\text{S}_2\text{O}_8$ and KI (Equal concentrations).

C. Partial molar volume.

1. To determine the partial molar volume of ethyl alcohol in a mixture of ethyl alcohol and water (Any seven mixtures be given).

II. Instrumental experiments

A. Potentiometry (Any four)

1. Titration of strong acid with strong alkali.

N.B. i) 8 to 10 ml of 1N acid solution to be given by examiner in 100 ml volumetric flask & student should dilute it to 100 ml and 10ml of this solution is taken for titration.

ii) Experiment is carried out by taking pilot run from 1 to 10 ml and then final run taking 0.2 ml reading in the range of end point.

2. Preparation of buffer solution and determination of their pH (Any five buffer solutions), Theoretical calculation of pH values by using Henderson's equation.
3. Determination of standard electrode potential of Zn/Zn^{++} , Cu/Cu^{++} , Ag/Ag^+ (Any two).
4. Estimate the amount of Cl^- , Br^- and I^- in given unknown halide mixture by titrating it against standard AgNO_3 solution.
5. Titration of ferrous ammonium sulphate using $\text{K}_2\text{Cr}_2\text{O}_7$ solution and to calculate redox potential of Fe^{++} , Fe^{+++} system.

B. Conductometry (Any three).

N.B. i) 8 to 10 ml of 1N acid solution to be given by examiner in 100 ml volumetric flask & student should dilute it to 100 ml and 10ml of this solution is taken for titration.

1. Titration of a mixture of weak acid and strong acid with strong alkali
2. To study the effect of substituent on dissociation constant of weak acid with respect to acetic acid and monochloroacetic acid (cell constant to be given).

N.B. Calculate K by using formula $K = \frac{\alpha^2 \cdot C}{1 - \alpha}$

3. To determine the velocity constant of hydrolysis of ethyl acetate by NaOH solution by conduct metric method.
4. To determine the normality of citric acid in lemon by titrating it against standard 0.2 N NaOH solution by conduct metric method.
5. To determine λ_∞ of strong electrolyte (NaCl or KCl) and to verify Onsager equation.

C. Refractometry. (Any One)

1. To determine the percentage composition of unknown mixture by (i) graphical method and (ii) by composition law (Densities of pure liquids A & B be given).
2. To determine the molar refractivity of methyl acetate, ethyl acetate, n-hexane and

carbon tetrachloride and calculate the refraction equivalents of C, H and Cl atoms.

D. Colorimetry (Any Two).

1. To verify Lambert – Beer's law using CuSO_4 solution.
2. To estimate of Fe^{+++} ions by thiocyanate method.
3. To estimate Fe^{+++} ions using salicylic acid by colorimetric titration.
4. To determine the order of reaction for the oxidation of alcohol by potassium dichromate and potassium permanganate in acidic medium colorimetrically.

E. pH – metry (Any One).

1. To determine the dissociation constant of monobasic acid (Acetic acid).
2. To determine the dissociation constant of dibasic acid (Malonic acid).
3. To determine hydrolysis constant of aniline hydrochloride.

Reference Books:

1. Findlay's Practical Physical Chemistry (Longman)
2. Advanced Practical Physical Chemistry by J. B. Yadav, Goel publishing house.
3. Practical Physical Chemistry by B. D. Khosla, V. C. Garg (R. Chand and Co.)
4. Systematic experimental Physical Chemistry by Rajbhoj, Chandekar (Anjali Publicaiton) Aurangabad.
5. Practical Physical Chemistry: Nandkumari, Kothari and Lavande.
6. Practical Physical Chemistry by Gurtu (S. Chand).
7. Text Book of Qualitative Inorganic Analysis by A. I. Vogel (ELBS Longman).

Nature of Practical Examination

- 1) The practical examination will be of **200** marks.
- 2) The duration of practical examination will be of **three days - six and half hour per day**.
- 3) Questions related to the practical exercise/project report/industrial visit carried out by the student should be asked in viva.
- 4) Use of scientific calculator is allowed.

- 5) S.I. units should be used wherever possible.
- 6) Use of Chart / Hand book / Text book of practical is allowed.
- 7) A student is expected to submit a journal certified by the Head of the Department.
- 8) A student not be permitted to appear at the practical examination unless he/she produces a certified journal. If the journal is lost, the student should produce a certificate from the Head of the Department stating that he/she has satisfactory completed the practical work but his / her journal is lost.
- 9) Use of Digital / Analytical / Chainometric / Single pan balance is allowed.
- 10) A student should submit one copy of project at the time of examination.**
- Each examiner should asses the project work for Five marks and sign the same. If any student will not submit project work, he/she will be given Zero mark for the project.**

11) The distribution of marks for practical examination will be as follows:

A) Physical Chemistry 60 marks

- i) Non-instrumental experiment 25 marks
- ii) Instrumental experiment 25 marks
- iii) Viva 05 marks
- iv) Journal 05 marks

B) Inorganic Chemistry 65 marks

- i) Gravimetric analysis 25 marks
- ii) Preparation 15 marks
- iii) Volumetric estimation 15 marks
- iv) Viva 05 marks
- v) Journal 05 marks

C) Organic Chemistry 60 marks

- i) Mixture separation and identification of compounds 25 marks
- ii) Estimation/Preparation 20 marks
- iii) Derivative 05 marks
- iv) Viva 05 marks
- v) Journal 05 marks

D) Project 15 marks

Total:- 200 marks

B.Sc. Programme structure (CBCS Pattern)

B.Sc. I, B. Sc. II, B. Sc. III Inorganic, Organic, Physical Analytical Chemistry

/ Industrial Chemistry)

B. Sc. I

Semester	Subject	Course Code	Paper No
I	Inorganic Chemistry	DSC-3A	I
	Organic Chemistry	DSC- 4A	II
II	Physical Chemistry	DSC- 3B	III
	Analytical Chemistry	DSC – 4B	IV

B. Sc. II

Semester	Subject	Course Code	Paper No
III	Physical Chemistry	DSC-C3	V
	Industrial Chemistry	DSC- C4	VI
IV	Inorganic Chemistry	DSC- D3	VII
	Organic Chemistry	DSC – D4	VIII

B. Sc III

Semester	Subject	Course Code	Paper No
V	Inorganic Chemistry	DSC-E5	IX
	Organic Chemistry	DSC- E6	X
	Physical Chemistry	DSC- E7	XI
	Analytical Chemistry	DSC – E8	XII
VI	Inorganic Chemistry	DSC-F5	XIII
	Organic Chemistry	DSC- F6	XIV
	Physical Chemistry	DSC- F7	XV
	Industrial Chemistry	DSC – F8	XVI

SHIVAJI UNIVERSITY, KOLHAPUR



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CHOICE BASED CREDIT SYSTEM

Syllabus For

B.Sc. Part -III Mathematics

SEMESTER V AND VI

(Syllabus to be implemented from June, 2020 onwards.)

B.Sc.Part-III [Semester V] (Credit - 8]

Course code	Title o the course	Instructio ns Lectures /Week	Duration of term end exam	Marks of Term end exam	Marks (Internal) Of Continuous Assessment	Credit
DSE E9	Mathematical Analysis	3	2 hours	40	10	2
DSE E10	Abstract Algebra	3	2 hours	40	10	2
DSE E11	Optimization Techniques	3	2 hours	40	10	2
DSE E12	Integral Transforms	3	2 hours	40	10	2

B.Sc.Part-III [Semester VI] (Credit - 8]

Course code	Title o the course	Instructions Lectures/Week	Duration of term end exam	Marks Term end exam	Marks (Internal) Of Continuous Assessment	Credit
DSE F9	Metric Spaces	3	2 hours	40	10	2
DSE F10	Linear Algebra	3	2 hours	40	10	2
DSE F11	Complex Analysis	3	2 hours	40	10	2
DSE F12	Discrete Mathematics	3	2 hours	40	10	2

Core Course Practical in Mathematics [CCPM IV to VII]

The practical examination will be conducted at the end of second term that is annual pattern

Total Credit 16

Course code	Title o the course	Instructions Lectures/Week	Duration of term end exam	Marks [End of academic year]	Credit
CCPM IV	Operations Research	5	6 hours	50	4
CCPM V	Laplace and Fourier Transforms	5	6 hours	50	4
CCPM VI	Mathematical Computation Using Python	5	6 hours	50	4
CCPM VII	Project, sturdy tour, viva.	5	6 hours	50	4

EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS (FOR REVISED SYLLABUS

Sem - V

Old Paper number	Equivalence	New Course code	Title of the course
IX	Real Analysis	DSE E9	Mathematical Analysis
X	Abstract Algebra	DSE E10	Abstract Algebra
XII	Numerical Methods - I	DSE E11	Optimization Techniques
XI	Partial Differential Equations	DSE E12	Integral Transforms

Sem - VI

Old Paper number	Equivalence	New Course code	Title of the course
XIII	Metric spaces	DSE F9	Metric Spaces
XIV	Linear Algebra	DSE F10	Linear Algebra
XV	Complex Analysis	DSE F11	Complex Analysis
XVI	Numerical Methods	DSE F12	Discrete Mathematics

CCPM

Old course code	Equivalence	New Course code	Title of the course
CML – IV	Operations Research Techniques	CCPM IV	Operations Research
CML – V	Numerical Methods	CCPM V	Laplace and Fourier Transforms
CML – VI	Numerical Recipes in C++, SciLab	CCPM VI	Mathematical Computation Using Python
CML – VII	Project, study tour, viva.	CCPM VII	Project, study tour, Seminar, viva.

B.Sc. (Mathematics) (Part-III) (Semester–V)
(Choice Based Credit System)
(Introduced from June 2020)

Course Code: DSE – E9

Theory: 32 Hrs. (40 Lectures of 48 minutes)

Title of Course: Mathematical Analysis

Marks – 40 (Credits: 02)

Course Objectives: The objectives of course is to understand and learn about

1. The integration of bounded function on a closed and bounded interval
2. Some of the families and properties of Riemann integrable functions
3. The applications of the fundamental theorems of integration
4. Extension of Riemann integral to the improper integrals when either the interval of integration is infinite or the integrand has infinite limits at a finite number of points on the interval of integration
5. The expansion of functions in Fourier series and half range Fourier series

Unit -1 : Riemann Integration

(16 hours)

Definition of Riemann integration, Inequalities for lower and upper Darboux sums, Necessary and sufficient conditions for Riemann integrability, Definition of Riemann integration by Riemann sum and equivalence of the two definitions, Riemann integrability of monotonic functions and continuous functions, Algebra and properties of Riemann integrable functions, First and second fundamental theorems of integral calculus, and the integration by parts.

Unit -2 : Improper Integrals and Fourier Series

(16 hours)

Improper Integrals: Definition of improper integral of first kind, Comparison test, μ – test for Convergence, Absolute and conditional convergence, Integral test for convergence of series, Definition of improper integral of second kind and some tests for their convergence, Cauchy principle value.

Fourier Series: Definition of Fourier series and examples on the expansion of functions in Fourier series, Fourier series corresponding to even and odd functions, half range Fourier series, half range sine and cosine series

Recommended Books:

1. **Kenneth.A.Ross**, Elementary Analysis: The Theory of Calculus, Second Edition, Undergraduate Texts in Mathematics, Springer, 2013.
(Chapter 6, Art. 32.1 to 32.11, 33.1 to 33.6 and 34.1 to 34.4)
2. **D Somasundaram and B Choudhary**, First Course in Mathematical Analysis, Narosa Publishing House New Delhi, Eighth Reprint 2013 (Chapter 8, Art. 8.5 and Chapter 10, Art. 10.1)

Reference Books:

1. **R.R.Goldberg**, Methods of Real Analysis, Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi.
2. **R.G.Bartle and D.R.Sherbert**, Introduction to Real Analysis, Wiley India Pvt. Ltd., Fourth Edition 2016.
3. **Shanti Narayan and Dr.M.D.Raisinghania**, Elements of Real Analysis, S.Chand & Company Ltd. New Delhi, Fifteenth Revised Edition 2014
4. **Shanti Narayan and P.K.Mittal**, A Course of Mathematical Analysis, S.Chand & Company Ltd. New Delhi, Reprint 2016.
5. **Kishan Hari**, Real Analysis, Pragati Prakashan, Meerut, Fourth Edition 2012.

B.Sc. (Mathematics) (Part-III) (Semester-V)
(Choice Based Credit System)
(Introduced from June 2020)

Course Code: DSE – E10

Theory: 32 Hrs. (40 Lectures of 48 minutes)

Title of Course: Abstract Algebra

Marks – 40 (Credits: 02)

Course Objectives: After successful completion of this course the students will be able to

1. Basic concepts of group and rings with examples
2. Identify whether the given set with the compositions form Ring, Integral domain or field.
3. Understand the difference between the concepts Group and Ring.
4. Apply fundamental theorem, Isomorphism theorems of groups to prove these theorems for Ring.
5. Understand the concepts of polynomial rings, unique factorization domain.

Unit -1: Groups and Rings

16 hours

Groups: Definition and examples of groups, group S_3 and Dihedral group D_4 , Commutator subgroups and its properties, Conjugacy in group and class equation.

Rings: Definition and example of Rings, Ring with unity. Zero divisor, Integral Domain, Division Ring, Field, Boolean ring, Subring, Characteristic of a ring: Nilpotent and Idempotent elements. Ideals, Sum of two ideals, Examples. Simple Ring.

Unit-2: Homomorphism and Imbedding of Ring , Polynomial Ring and Unique Factorization Domain.

16 hours

Quotient Rings, Homomorphism, Kernel of Homomorphism , Isomorphism theorems, imbedding of Ring. Maximal Ideals. Polynomial Rings, degree of Polynomial, addition and multiplication of Polynomials and their properties, UFD, Gauss' Lemma.

Recommended Books:

- 1) Vijay K. Khanna, S.K. Bhambri, A Course In Abstract Algebra, Vikas publishing House Pvt.Ltd., New –Delhi-110014, Fifth Edition 2016.
(Chap. 3 Art. The Dihedral Group, commutator, Chap. 4 Art. Conjugate elements, Chap.7 Art. Subrings, characteristic of a ring, Ideals, Sum of Ideals, Chap. 8 Art. Quotient rings, Homomorphisms, Embedding of Rings, More on Ideals, Maximal Ideals, Chap 9 Polynomial Rings, Unique Factorization Domain.)

Reference Books:

1. Jonh B. Fraleigh, A First Course in Abstract Algebra Pearson Education, Seventh Edition(2014).
2. Herstein I. N, Topics in Algebra, Vikas publishing House, 1979.
3. Malik D. S. Moderson J. N. and Sen M. K., Fundamentals of Abstract Algebra, McGraw Hill, 1997.
4. Surjeet Sing and Quazi Zameeruddin, Modern Algebra, Vikas Publishing House, 1991.
5. N. Jacobson, Basic Algebra Vol. I&II, Freeman and Company, New York 1980.

B.Sc. (Mathematics) (Part-III) (Semester-V)
(Choice Based Credit System)
(Introduced from June 2020)

Course Code: DSE – E11

Title of Course: Optimization Techniques

Theory: 32 Hrs. (40 Lectures of 48 minutes)

Marks – 40 (Credits: 02)

Course Objectives: The aim of this course is to

1. provide student basic knowledge of a range of operation research models and techniques, which can be applied to a variety of industrial and real life applications.
2. Formulate and apply suitable methods to solve problems.
3. Identify and select procedures for various sequencing, assignment, transportation problems.
4. Identify and select suitable methods for various games .
5. To apply linear programming and find algebraic solution to games.

Unit-1 Network optimization models :

[16 hours]

Introduction ,Formulation of Linear Programming Problems., Graphical methods for Linear Programming problems. General formulation of Linear Programming problems, Slack and surplus variables, Canonical form, Standard form of Linear Programming problems. Transportation problem: Introduction, Mathematical formulation ,Matrix form of Transportation problem. Feasible solution, Basic feasible solution and optimal solution, Balanced and unbalanced transportation problems. Methods of Initial basic feasible solutions: North west corner rule [Stepping stone method], Lowest cost entry method [Matrix minima method], Vogel's Approximation method [Unit Cost Penalty method] ,The optimality test.[MODI method], Assignment Models :Introduction ,Mathematical formulation of assignment problem, Hungarian method for assignment problem. Unbalanced assignment problem. Travelling salesman problem.

Unit-2 Quantitative techniques:

[16 hours]

Game theory: Basic definitions , Minimax [Maximin] Criterion and optimal strategy, Saddle point , optimal strategy and value of game. Solution of games with saddle point. Fundamental theorem of game theory [Minimax theorem] , Two by two (2 X 2) games without saddle point. Algebraic method of Two by two (2 X 2) games. Arithmetic method of Two by two (2 X 2) games. Graphical method for 2 x n games and m x 2 games. Principle of dominance, Job sequencing : Introduction. Terminology and notations. Principal assumptions. Solution of sequencing problems. Processing n jobs through 2 machines. Processing n jobs through 3 machines. Processing 2 jobs through m machines. Processing n jobs through m machines.

Recommended Book:

1. Sharma S.D., Operations Research - Theory Methods and Applications"Kedarnath, Ramnath Meerut, Delhi Reprint 2015.

Reference Books:

1. Mohan, C. and Deep, Kusum, Optimization Techniques, New Age, 2009.
2. Mittal, K. V. and Mohan, C., Optimization Methods in Operations, Research and Systems Analysis, New Age, 2003.
3. Taha, H.A. :Operations Research – An Introduction, Prentice Hall, (7th Edition), 2002.
4. Ravindran, A. , Phillips, D. T and Solberg, J. J., Operations Research: Principles and Practice, John Wiley and Sons, 2nd Edition, 2009.
5. J.K. Sharma : Operation Research: Theory and Applications, Laxmi Publications, 2017.
6. Kanti Swarup, P.K. Gupta and Manmohan, Operation Research, S.Chand & Co.
7. G. Hadley: Linear programming , Oxford and IBH Publishing Co.

B.Sc. (Mathematics) (Part-III) (Semester-V)
(Choice Based Credit System)
(Introduced from June 2020)

Course Code: DSE – E12

Theory: 32 Hrs. (40 Lectures of 48 minutes)

Title of Course: Integral Transforms

Marks – 40 (Credits: 02)

Course Objective : Students be able to

1. understand concept of Laplace Transform.
2. apply properties of Laplace Transform to solve differential equations.
3. understand relation between Laplace and Fourier Transform.
4. understand infinite and finite Fourier Transform.
5. apply Fourier transform to solve real life problems.

Unit: 1 Laplace and Inverse Laplace Transform.

16 Hours

Laplace Transform : Definitions; Piecewise continuity, Function of exponential order, Function of class A, Existence theorem of Laplace transform. Laplace transform of standard functions. First shifting theorem and Second shifting theorem and examples, Change of scale property and examples, Laplace transform of derivatives and examples, Laplace transform of integrals and examples. Multiplication by power of t and examples. Division by t and examples. Laplace transform of periodic functions and examples. Laplace transform of Heaviside's unit step function. Inverse Laplace Transform: Definition Standard results of inverse Laplace transform, Examples, First shifting theorem and Second shifting theorem and examples. Change of scale property and Inverse Laplace of derivatives, examples. The Convolution theorem and Multiplication by S , examples. Division by S , inverse Laplace by partial fractions, examples, Solving linear differential equations with constant coefficients by Laplace transform.

Unit 2 Fourier Transform

16 Hours

The infinite Fourier transform and inverse: Definition examples Infinite Fourier sine and cosine transform and examples. Definition: Infinite inverse Fourier sine and cosine transform and examples. Relationship between Fourier transform and Laplace transform. Change of Scale Property and examples. Modulation theorem. The Derivative theorem. Extension theorem.

Convolution theorem and examples. Finite Fourier Transform and Inverse, Fourier Integrals :

Finite Fourier sine and cosine transform with examples. Finite inverse Fourier sine and cosine transform with examples. Fourier integral theorem. Fourier sine and cosine integral (without proof) and examples.

Recommended Book:

1. J.K. Goyal, K.P. Gupta, Laplace and Fourier Transforms, A Pragati Edition (2016).

Reference Books:

1. Dr. S. Shrenadh, Integral Transform, S. Chand Prakashan.
2. B. Davies, Integral Transforms and Their Applications, Springer Science Business Media LLC (2002)
3. Murray R. Spiegel, Laplace Transforms, Schaum's outlines.

B.Sc. (Mathematics) (Part-III) (Semester–VI)
(Choice Based Credit System)
(Introduced from June 2020)

Course Code: DSE – F9

Title of Course: Metric Spaces

Theory: 32 Hrs. (40 Lectures of 48 minutes)

Marks – 40 (Credits: 02)

Course objectives : Upon successful completion of this course, the student will be able to:

1. acquire the knowledge of notion of metric space, open sets and closed sets.
2. demonstrate the properties of continuous functions on metric spaces,
3. apply the notion of metric space to continuous functions on metric spaces.
4. understand the basic concepts of connectedness, completeness and compactness of metric spaces,
5. appreciate a process of abstraction of limits and continuity to metric spaces,

Unit –1 Limits and Continuous Functions on Metric Spaces 16 hours

Limit of a function on the real line, Metric Spaces, Limits in Metric Spaces, Functions continuous at a point on the real line, Reformulation, Functions continuous on a metric space, Open Sets, Closed Sets, More about open sets.

Unit 2: Connectedness, Completeness and Compactness 16 hours

Connected Sets, Bounded sets and totally bounded sets, Complete metric spaces, Compact metric spaces, Continuous functions on compact metric spaces.

Recommended Book:

1. R. R. Goldberg, Methods of Real Analysis, Oxford and IBH Publishing House. (2017).

Reference Books:

1. T. M. Apostol, Mathematical Analysis, Narosa Publishing House. (2002)
2. Satish Shirali, H. L. Vasudeva, Mathematical Analysis, Narosa Publishing House. (2013)
3. D. Somasundaram, B. Choudhary, First Course in Mathematical Analysis, Narosa Publishing House, (2018).
4. W. Rudin, Principles of Mathematical Analysis, McGraw Hill Book Company (1976).
5. Shantinayakan, Mittal, A Course of Mathematical Analysis, S. Chand and Company (2013).
6. J.N. Sharma, Mathematical Analysis-I, Krishna Prakashan Mandir, Meerut. (2014)
7. S.C. Malik, Savita Arora, Mathematical Analysis, New age International Ltd (2005).

B.Sc. (Mathematics) (Part-III) (Semester–VI)
(Choice Based Credit System)
(Introduced from June 2020)

Course Code: DSE – F10

Title of Course: Linear Algebra

Theory: 32 Hrs. (40 Lectures of 48 minutes)

Marks – 40 (Credits: 02)

Course Objectives: Upon successful completion of this course, the student will be able to:

1. understand notion of vector space, subspace, basis.
2. understand concept of linear transformation and its application to real life situation.
3. work out algebra of linear transformations.
4. appreciate connection between linear transformation and matrices.
5. work out eigen values, eigen vectors and its connection with real life situation.

Unit 1: Vector Spaces and Linear Transformations

(16 hours)

Vector space: Subspace, Sum of subspaces, direct sum, Quotient space, Homomorphism or Linear transformation, Kernel and Range of homomorphism, Fundamental Theorem of homomorphism, Isomorphism theorems, Linear Span, Finite dimensional vector space, Linear dependence and independence, basis, dimension of vector space and subspaces.

Linear Transformation: Rank and nullity of a linear transformation, Sylvester's Law, Algebra of Linear Transformations, Sum and scalar multiple of Linear Transformations. The vector space of Homomorphisms, Product (composition) of Linear Transformations, Linear operator, Linear functional, Invertible and non-singular Linear Transformation, Matrix of Linear Transformations and its examples.

Unit 2: Inner Product Spaces, Eigen values and Eigen vectors

(16 hours)

Inner product spaces: Norm of a vector, Cauchy- Schwarz inequality, Orthogonality, Generalized Pythagoras Theorem, orthonormal set, Gram-Schmidt orthogonalization process, Bessel's inequality, Eigen values and Eigen vectors: Eigen space, Characteristic Polynomial of a matrix and remarks on it, similar matrices, Characteristic Polynomial of a Linear operator, Examples and real life (Predatory – Prey problem), examples on eigen values and eigen vectors.

Recommended Book:

1. Khanna V. K. and Bhambri S. K., **A Course in Abstract Algebra**, Vikas Publishing House PVT Ltd., New Delhi, 2016, 5th edition,

Reference Books:

1. H. Anton & C. Rorres, **Elementary Linear Algebra** (with Supplemental Applications), Wiley India Pvt. Ltd (Wiley Student Edition), New Delhi, 2016, 11th Edition.
2. S. Friedberg, A. Insel and L. Spence, **Linear Algebra**, Prentice Hall of India, 2014, 4th Edition.
3. Hoffman K. and Kunze R., **Linear Algebra**, Prentice Hall of India, 1978.
4. Lipschutz S., **Linear Algebra**, Schaum's Outline Series, McGraw Hill, Singapore, 1981.
5. David Lay, Steven Lay, Judi McDonald, **Linear Algebra and its Applications**, Pearson Education Asia, Indian Reprint, 2016, 5th Edition.

B.Sc. (Mathematics) (Part-III) (Semester–VI)
(Choice Based Credit System)
(Introduced from June 2020)

Course Code: DSE – F11

Title of Course: Complex Analysis

Theory: 32 Hrs. (40 Lectures of 48 minutes)

Marks – 40 (Credits: 02)

Course objectives: Upon successful completion of this course, Students will

1. learn basic concepts of functions of complex variable.
2. be introduced to concept of analytic functions.
3. learn concept of complex integration and basic results thereof.
4. be introduced to concept of sequence and series of complex variable.
5. learn to apply concept of residues to evaluate certain real integrals.

Unit 1 :Analytic functions and Complex Integration

16 hours

Basic algebraic and geometric properties of complex numbers, Function of complex variable, Limits, continuity and differentiation, Cauchy Riemann equations, Analytic functions and examples of analytic functions, Exponential function, Logarithmic function, Trigonometric function, Definite integrals of functions, Contours, Contour integrals and its examples, upper bounds for moduli of contour integrals, Cauchy-Goursat theorem and examples, Cauchy integral formula and examples, Liouville's theorem and the fundamental theorem of algebra.

Unit 2 : Sequences, Series and Residue Calculus

16 hours

Convergence of sequences and series of complex variables, Taylor series and its examples, Laurent series and its examples, absolute and uniform convergence of power series, Isolated singular points, Residues, Cauchy's residue theorem, Residue at infinity, The three types of isolated singularities, Residues at poles and examples, Zeros of analytic functions, Zeros and poles, Application of residue theorem to evaluate real integrals.

Recommended book:

1. James Ward Brown and Ruel V. Churchill, *Complex Variables and Applications*, 8th Ed., McGraw – Hill Education (India) Edition, 2014. Eleventh reprint 2018.

Reference books:

1. S.Ponnusamy, Foundations of Complex Analysis, Narosa Publishing House, Second Edition , 2005, Ninth reprint 2013.
2. Lars V Ahlfors, Complex Analysis, McGraw-Hill Education; 3 edition (January 1, 1979).
3. S.B.Joshi, T.Bulboaca and P.Goswamy, Complex Analysis, Theory and Applications, DeGruyter, Germany(2019).

B.Sc. (Mathematics) (Part-III) (Semester–VI)
(Choice Based Credit System)
(Introduced from June 2020)

Course Code: DSE – F12

Title of Course: Discrete Mathematics

Theory: 32 Hrs. (40 Lectures of 48 minutes)

Marks – 40 (Credits: 02)

Course Objectives: Upon successful completion of this course, Students will be able to

1. use classical notions of logic: implications, equivalence, negation, proof by contradiction, proof by induction, and quantifiers.
2. apply notions in logic in other branches of Mathematics.
3. know elementary algorithms : searching algorithms, sorting, greedy algorithms, and their complexity.
4. apply concepts of graph and trees to tackle real situations.
5. appreciate applications of shortest path algorithms in computer science.

Unit 1 : Mathematical Logic

[16 hours]

The logic of compound statements: Statements, compound statements, truth values, logical equivalence, tautologies and contradictions, Conditional statements: Logical equivalences involving implication, negation. The contrapositive of a conditional statements, converse, inverse of a conditional statements, biconditional statements. Valid and invalid arguments: Modus Ponens and modus Tollens, Additional valid argument forms, rules of inferences, contradictions and valid arguments, Number system: Addition and subtraction of Binary, decimal, quintal, octal, hexadecimal number systems and their conversions.

Unit 2: Graphs and trees

[16 hours]

Graphs : Definitions, basic properties, examples, special graphs, directed and undirected graphs, concept of degree, Trails, Paths and Circuits: connectedness, Euler circuits, Hamiltonian circuits, Matrix representation of graphs, Isomorphism of graphs, isomorphic invariants, graph isomorphism for simple graphs.

Trees: Definitions and examples of trees, rooted trees, binary trees and their properties. spanning trees , minimal spanning trees, Kruskal's algorithm , Prim's algorithm, Dijkstra's shortest path algorithm.

Recommended Book:

1. Susanna S. Epp, Discrete Mathematics with Applications, PWS Publishing Company, 1995.
(Brooks/Cole, Cengage learning, 2011)

References Books :

1. Kenneth H. Rosen, Discrete Mathematics and its Applications, McGraw Hill, 2002.
2. J.P. Tremblay and R. Manohar, Discrete Mathematical Structure with Applications, McGraw– Hill.
3. V. Krishnamurthy, Combinatorics: Theory and Applications”, East-West Press.
4. Kolman, Busby Ross, Discrete Mathematical Structures, Prentice Hall International.
5. R M Somasundaram, Discrete Mathematical Structures, (PHI) 7th Edition.
6. A.B.P. Rao and R.V. Inamdar, A Graduate Text in Computer Mathematics, SUMS [1991]
7. Seymour Lipschutz and Marc Lipson, Discrete Mathematics, Schaum's Outlines Series, Tata McGraw - Hill.
8. Mathematical Foundations of Computer Science: professional publications, JNTU Hyderabad.
11. Liu C. L, Elements of Discrete Mathematics, McGraw – Hill.

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B.Sc. (Mathematics) (Part-III) (Semester–V & VI)
(Choice Based Credit System)
(Introduced from June 2020)

Course Code: CCPM IV

Title of Course: Operation Research

Sr.No.	Title of the experiment	Sessions
1	Graphical method for linear programming problems	1
2	Transportation Problems[North west corner rule]	1
3	Transportation Problems[Lowest Cost Entry Method]	1
4	Transportation Problems[Vogel Approximation Method]	1
5	Transportation Problems[Test for Optimality MODI method]	1
6	Assignment Problems [Hungarian Method]	1
7	Assignment Problems [Maximization Case]	1
8	Assignment Problems[Travelling Salesman Problem]	1
9	Assignment Problems[Unbalanced Problem]	1
10	Two by two (2 X 2) games without saddle point.	1
11	Algebraic method of Two by two (2 X 2) games.	1
12	Arithmetic method of Two by two (2 X 2) games.	1
13	Graphical method for 2 x n games and m x 2 games.	1
14	Processing n jobs through 2 machines.	1
15	Processing n jobs through 3 machines.	1
16.	Processing 2 jobs through m machines. Processing n jobs through m machines.	1
	Total	16

B.Sc. (Mathematics) (Part-III) (Semester–V & VI)
(Choice Based Credit System)
(Introduced from June 2020)

Course Code: CCPM V

Title of Course: Laplace and Fourier Transform

Sr.No.	Title of the experiment	Sessions
1	Laplace transform of elementary functions	1
2	Evaluation of integrals using properties of Laplace transform	1
3	Effect of multiplication	1
4	Effect of division	1
5	Laplace transform of integrals	1
6	Laplace transform of periodic functions	1
7	Inverse Laplace by using standard results	1
8	Inverse Laplace by Convolution theorem	1
9	Inverse Laplace by partial fractions	2
10	Infinite Fourier sine transform and inverse	1
11	Infinite Fourier cosine transform and inverse	1
12	Change of scale property of Fourier transform	1
13	Convolution theorem of Fourier transform	1
14	Finite Fourier sine transform and inverse	1
15	Finite Fourier cosine transform and inverse	1
	Total	16

B.Sc. (Mathematics) (Part-III) (Semester–V & VI)
(Choice Based Credit System)
(Introduced from June 2020)

Course Code: CCPM VI

Title of Course: Mathematical Computation Using Python

Sr. No.	Topic	No. Of Practicals
1.	Introduction to Python: Python, Anaconda, Spyder IDE, Python Identifiers and Keywords , data types, simple mathematical operation, Indentation and Comments., Input and Output, First Python program.	1
2	Expression and operators: Expression, Boolean expression, logical operations: comparison operator, membership operator, identity operator, bitwise operator. Order of evaluation. File Handling : open, read, write, append modes of file.	1
3	Conditional Statements: if-else, nested if-else, if-elif-else, try-except block.	1
4	Looping Statements, Control statements: Looping Statements: for loop, while loop , Nested loops Control Statements: break, continue and pass.	1
5	Functions: Built-in functions, User-defined functions, Arguments, recursive function, Python Anonymous/Lambda Function, Global, Local and Nonlocal variables and return statement.	1
6	Modules and packages in Python : Modules, import, import with renaming, from-import statement, math module ,cmath module , random module, packages.	1
7	Python Data structure: Strings, list, tuples, dictionary, set and array.	1
8	Operations on set and array: Set operations, Intersection, union, difference, symmetric difference, searching and sorting.	1
9	Systems of linear algebraic equations: Gauss Elimination Method, LU Decomposition Methods	1
10	Roots of Equations: Bisection, Newton-Raphson Method	1
11	Initial Value Problems: Euler's Method, Runge-Kutta Methods.	1
12	Magic square and Area calculation without measurement.	1
13	Graph Theory : Networkx Graph, nodes, edges, directed graph, multigraph, drawing graph, Google page rank by random walk method	1
14	Collatz conjecture and Monte Hall problem	1
15	Data compression using Numpy	1
16	Data visualization in Python: 2D and 3D plot in python : line plot, bar plot, histogram plot, scatter plot, pie plot, area plot, Mandelbrot fractal set visualization.	1
	Total	16

Recommended Book:

1. JaanKiusalaas, *Numerical Methods in Engineering with Python3*, Cambridge University Press.
2. Amit Saha, *Doing Math with Python*, No Starch Press, 2015.
3. YashwantKanetkar and Aditya Kanetkar, *Let Us Python*, BPB Publication, 2019.

B.Sc. (Mathematics) (Part-III) (Semester–V & VI)
(Choice Based Credit System)
(Introduced from June 2020)

Course Code: CCPM VII

Title of Course: Project, Study- Tour, Viva – Voce

A :PROJECT [30 Marks]

Each student of B.Sc. III is expected to read, collect, understand the culture of Mathematics, its historic development. He is expected to get acquainted with Mathematical concepts, innovations, relevance of Mathematics. Report of the project work should be submitted through the respective Department of Mathematics. Evaluation of the project report will be done by the external examiners at the time of annual examination.

B. STUDY TOUR [05 Marks] :

It is expected that the tour should contain at least renowned academic institution so that the visiting students will be inspired to go for higher studies in Mathematics.

C. SEMINARS: [05 Marks]

Students should present a seminar before the B.Sc.III class on some topic in Mathematics.

D. VIVA-VOCE (on the project report). [10 Marks]

Nature of Question papers (Theory)

Common nature of question for theory paper mentioned separately:

There will be practical at the end of second term that is annual pattern,

Nature of Practical Question Paper

(1) Core Course Mathematics Practicals - IV

This carries 50 marks.

Examination : 40 Marks

Journal : 10 Marks

(2) Core Course Mathematics Practicals - V

This carries 50 marks.

Examination : 40 Marks

Journal : 10 Marks

(3) Core Course Mathematics Practicals - VI

This carries 50 marks.

Examination : 40 Marks

Journal : 10 Marks

(4) Core Course Mathematics Practicals - VII

This carries 50 marks.

Project : 30 Marks (External Examiner)

Study Tour : 05 Marks (External Examiner)

Seminar : 05 Marks (External Examiner)

Viva Voce : 10 Marks (External Examiner)

Note : Each student of a class will select separate topic for project work. He/ She should submit the reports of his / her project work , Study tour report to the department and get the same certified.

Teaching Periods :

(i) Total teaching periods for Paper –DSE E-9, E-10, E-11, E-12, F-9, F-10, F-11, F-12 are 12 (Twelve) per week. 3 (Three) periods per paper per week.

(ii) Total teaching periods for CCPM-IV, V, VI, VII for the whole class are 20 (Twenty) per week. 5 (Five) periods per Lab. Per week.

SHIVAJI UNIVERSITY, KOLHAPUR.



Accredited By NAAC with 'A' Grade

Revised Syllabus For

Bachelor of Science (B.Sc.) Part III

Botany

CBCS PATTERN

Syllabus to be implemented from

June, 2020 onwards

Paper -IX, X, XI, XII - (Semester- V)

and

Paper -XIII, XIV, XV, XVI - (Semester-VI)

A] Ordinance and Regulations: (As applicable to Degree Course)

**B] Shivaji University, Kolhapur
Revised Syllabus For Bachelor of Science**

**1. TITLE : Subject- Botany
Optional under the Faculty of Science**

2. YEAR OF IMPLEMENTATION: - Implemented from June 2020 onwards.

3. PREAMBLE:-

[**Note:-**The Board of Studies should briefly mention foundation, core and applied components of the course/paper. The student should get into the prime objectives and expected level of study with required outcome in terms of basic and advance knowledge at examination level.]

**4. GENERAL OBJECTIVES OF THE COURSE:
(As applicable to the Degree concerned)**

Objectives:-

- 1) To impart knowledge of Science is the basic objective of education.
- 2) To develop scientific attitude is the major objective to make the students open minded, critical, curious.
- 3) To develop skill in practical work, experiments and laboratory materials and equipments along with the collection and interpretation of scientific data to contribute the science.
- 4) To understand scientific terms, concepts, facts, phenomenon and their relationships.
- 5) To make the students aware of natural resources and environment.
- 6) To provide practical experience to the students as a part of the course to develop scientific ability to work in the field of research and other fields of their own interest and to make them fit for society.
- 7) To The students are expected to acquire knowledge of plant and related subjects so as to understand natural phenomenon, manipulation of nature and environment in the benefit of human beings.
- 8) To develop ability for the application of the acquired knowledge to improve agriculture and other related fields to make the country self reliant and sufficient.
- 9) To create the interest of the society in the subject and scientific hobbies, exhibitions and other similar activities.

5. DURATION

The course shall be a full time course.

6. PATTERN:-

Pattern of Examination will be Semester.

7. **FEE STRUCTURE :-**
As per Government /University rules.
1. Refer brochure and prospectus of concern affiliated college/institute to Shivaji University, Kolhapur.
 2. Other fee will be applicable as per rules and norms of Shivaji University, Kolhapur.

8. **ELIGIBILITY FOR ADMISSION:**
As per guidelines obtained from Shivaji University, Kolhapur by following rules and regarding reservations by Govt. of Maharashtra.

9. **MEDIUM OF INSTRUCTION:**
The medium of instruction shall be in English.

10. **STRUCTURE OF COURSE- B. Sc. III Botany (Optional)**

THIRD YEAR (SEMESTER V/VI) (NUMBER OF PAPERS VIII)

Sr.No.	Subjects/Papers	Theory	Internal	Total Marks
1.	Paper-IX	40	10	50
2.	Paper- X	40	10	50
3.	Paper -XI	40	10	50
4.	Paper- XII	40	10	50
5.	Paper- XIII	40	10	50
6.	Paper-XIV	40	10	50
7.	Paper-XV	40	10	50
8.	Paper-XVI	40	10	50
	Practical -I			50
	Practical- II			50
	Practical- III			50
	Practical -IV			50
	Total			600

11. Structure of B. Sc. III P Semester V and VI

SEMESTER V							
Sr. No.	Subject Title	TEACHING SCHEME			PRACTICAL		
		Credits	No. of Lectures	Hours	Credits	No. of Lectures	Hours
1	DSE-E	2	3	2.4	8	20	16
2	DSE-E	2	3	2.4			
3	DSE-E	2	3	2.4			
4	DSE-E	2	3	2.4			
	TOTAL	10	16	12.8	8	20	16
SEMESTER VI							
1	DSE-F	2	3	2.4	8	20	16
2	DSE-F	2	3	2.4			
3	DSE-F	2	3	2.4			
4	DSE-F	2	3	2.4			
	TOTAL	10	16	12.8	8	20	16
GRAND TOTAL		20	32	25.6	16	40	32

12. SCHEME OF EXAMINATION :-

- The examination shall be conducted at the end of each term for semester pattern.
- The Theory paper shall carry 40 marks.
- The evaluation of the performance of the students in theory papers shall be on the basis of Semester Examination of 40 + 10 marks.
- Question Paper will be set in the view of the /in accordance with the entire Syllabus and preferably covering each unit of syllabi.

13. STANDARD OF PASSING:-

As Prescribed under rules & regulation for each degree.

14. NATURE OF QUESTION PAPER AND SCHEME OF MARKING:

(Unit wise weightage of marks should also be mentioned)

Q. 1. Multiple choices questions (8-questions) --- 08 Marks

Q.2. Attempt **any two** of the following.

(Essay type/Broad answer questions) ---- 16 Marks

Q.3. Write short notes (**any four**) --- 16 Marks

**15. EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS-
(FOR REVISED SYLLABUS)**

(Introduced from June 2020 onwards)

Old Syllabus (Semester pattern)		Revised Syllabus (Semester pattern)		
Paper No.	Title of Old Paper	Sem. No	Paper No.	Title of New Paper
IX	Biology of Non Vascular Plants and Paleobotany	V	DSE –E25	Genetics and Plant Breeding
X	Genetics and Analytical Techniques in Plant Science		DSE –E26	Microbiology, Plant Pathology and Mushroom Culture Technology
XI	Fundamentals of Plant Physiology and Ecology		DSE –E27	Cytology and Research Techniques in Biology
XII	Plant Biochemistry		DSE –E28	Horticulture and Gardening
XIII	Biology of Vascular Plants	VI	DSE –F25	Plant Biochemistry and Molecular Biology
XIV	Microbiology and Plant Pathology		DSE –F26	Bioinformatics, Biostatistics and Economic Botany
XV	Plant Breeding, Biostatistics, Ethnobotany and Horticulture		DSE –F27	Plant Biotechnology and Paleobotany
XVI	Molecular Biology and Biotechnology		DSE –F28	Bio fertilizers and Herbal Drug Technology

SEMESTER V
B.Sc. Part- III Botany
CREDITS: 2, LECTURE PERIOD: 3 PER WEEK, MARKS: 40+10
Paper- IX DSE –E25
Genetics and Plant Breeding

Unit 1: Mendelism:

10

- 1.1 Introduction, Definition and Basic terminologies in genetics.
- 1.2 Principles of inheritance a) Law of Dominance b) Law of Segregation c) Law of independent assortment.
- 1.3 Gene Interaction-a) Complementary gene interaction b) Supplementary gene interaction.

Unit 2 : Linkage and Recombination

10

- 2.1 Linkage: Definition, Linkage group, Types, Coupling and Repulsion phase, Significance.
- 2.2 Recombination (Crossing over): Definition, Types , Mechanism of crossing over, Significance
- 2.3 Mutation – Definition, Spontaneous and Induced mutation. Types of mutagen Physical and Chemical, Significance.

Unit 3: Chromosomes structure and Variation

- 3.1 Chromosome structure - Introduction, types (based on position of centromere) **13**

- 3.2 Multiple allelism: Introduction, Definition, Self-incompatibility in plants

- 3.3 Quantitative inheritance: a) Polygene inheritance- Concept, examples- Kernel colour in wheat,
b) Population genetics- Hardy-Weinberg's law.

- 3.4 Maternal inheritance- Mendelian versus cytoplasmic inheritance, Plastid inheritance in
Mirabilis jalappa.

- 3.5 Alternation in genetic make-up and its significance-

- a) Change in chromosome structure- Deletion, Duplication, Inversion and Translocation.
- b) Change in chromosome number- Euploidy and Aneuploidy.

Unit 4: Plant Breeding

12

- 4.1 Introduction, Definition of plant breeding.

- 4.2 Aims and objectives of plant breeding

- 4.3 Methods of plant breeding-

- a) Introduction and acclimatization
- b) Selection- i) Mass selection ii) Pure line selection iii) Clonal selection
- c) Hybridization techniques in self and cross pollinated crops.
- d) Male sterility and its significance
- e) Mutation breeding- Gamma garden

B.Sc. Part- III Botany
CREDITS: 2, LECTURE PERIOD: 3 PER WEEK , MARKS: 40+10
Paper- XDSE –E26
Microbiology, Plant Pathology and Mushroom Culture Technology

Unit 1: Microbiology **10**

1.1 Micro organisms in biological world, characteristic features of different groups:

Phytoplasma and Actinomycetes

1.2 Methods in Microbiology: Staining for microbes: Bacteria, Sterilization Methods, Culture Media, Pure Culture Techniques

1.3 Recombination in Bacteria: Transformation and Transduction

Unit 2: Industrial Microbiology **10**

2.1 Applications of micro-organisms with reference to Synthesis of Antibiotics (Penicillin), Organic Acids (Lactic Acid), Alcohol (Ethyl Alcohol)

2.2 Bio-pesticides- Concept, Types and Significance

Unit 3: Plant Pathology **15**

3.1 Classification of Plant Diseases: on the basis of Pathogens and Symptoms

3.2 Transmission of Pathogen- Air borne, Seed borne and Soil borne

3.3 Prevention and Control: Physical, Chemical and Biological Control, Role of Quarantine

3.4 Study of Plant Diseases-

- i) Grassy Shoot of Sugarcane (Phytoplasma),
- ii) Citrus Canker (Bacterial),
- iii) Yellow Vein Mosaic of Bhendi (Viral),
- iv) White Rust of Crucifers and Tikka Disease of ground nut (Fungal)

Unit 4: Mushroom Technology **10**

4.1. History, Types of Mushrooms: Edible (Non poisonous) and inedible (Poisonous).

4.2 Cultivation Technology:

Pure culture: Medium, Sterilization, Preparation of spawn, Multiplication, Mushroom bed preparation, factors affecting the mushroom bed preparation and composting technology in mushroom production.

4.3 Storage: Short Term (Refrigeration), Long Term Storage (Canning, Pickles, Papads), Drying in Salt Solutions

4.4 Values of Mushroom: Nutrition - Proteins - amino acids, mineral elements nutrition - Carbohydrates, Crude fibre content - Vitamins.

B.Sc. Part- III Botany
CREDITS: 2, LECTURE PERIOD: 3 PER WEEK , MARKS: 40+10
Paper- XI DSE –E27

Cytology and Research Techniques in Biology

Unit 1: Cell as a unit of life

10

I.1 Introduction, The Cell Theory, Prokaryotic and Eukaryotic cells,

1.2 Cell cycle and Apoptosis.

1.3 Cell division: Mitosis and Meiosis with their significance.

Unit 2: Cell Organelles

12

2.1 Nucleus: Ultra structure, Nuclear envelope, Nuclear pore complex, DNA packaging in Eukaryotes.

2.2 Mitochondria: Ultrastructure, semiautonomous body and Role.

2.3 Chloroplasts: Ultrastructure, semiautonomous body and Role.

2.4 Ribosomes: Structure and Functions of Prokaryotic and Eukaryotic ribosome.

Unit 3: Sub Cellular Structures and Cell Membrane

10

3.1. ER, Golgi body and Lysosomes: Structure and Role,

3.2 Peroxisomes and Glyoxysomes: Structure and Role.

3.3 Cell membrane: Structure, Fluid Mosaic Model, Role.

3.4 Types of membranes as per permeability.

Unit 4: Research Techniques in Biology

13

4.1 Principles of microscopy, Light, Fluorescence and Electron microscopy (EM)- Scanning EM.

4.2 Colorimetry, Spectrophotometry, Micrometry, Photomicrography,

4.3 Intellectual property right (IPR) – Concept and Importance.

4.4 Patents – Objectives, Procedure and Working

B.Sc. Part- III Botany
CREDITS: 2, LECTURE PERIOD: 3 PER WEEK, MARKS: 40+10
Paper- XII DSE–E28
Horticulture and Gardening

Unit 1: Importance and divisions of Horticulture **5**

1.1: Introduction and importance of horticulture

1.2: Divisions of Horticulture – Pomology, Olericulture, Floriculture, Landscape gardening,

Unit 2: Horticultural Produce and Management of Pest and diseases **10**

2.1: Floriculture: a) Introduction, Cultivation of important cut flowers and management of important pests and diseases: Rose, Gerbera and Marigold.

b) Flower arrangements, Packing and Marketing of cut flowers.

2.2: Fruit preservation technology:

a) Physical - Drying, freezing, heat,

b) Chemical - sugar, salt, chemical preservatives.

Unit 3: Nursery **15**

3.1: Definition, objectives and scope, Infrastructure for nursery

3.2: Propagation Practices: Sexual and Asexual

a) Sexual: Seed: Sowing of seed, Transplanting of seedling, Advantages and Disadvantages.

b) Vegetative: i) Cutting – Definition, Stem cutting (Hard wood stem and soft wood stem), Use of PGR's for rooting

ii) Layering – Definition, Simple layering, Air layering

iii) Grafting – Definition, Whip grafting, Approach grafting

iv) Budding: Definition, T-budding, Patch budding

c) By specialized vegetative structure – Bulbs, Corms, Tubers, Rhizomes

Unit 4: Landscape Gardening **15**

4.1 Definition, scope and objectives

4.2 Indoor Garden – Indoor plants, bottle garden, dish garden, hanging basket, Bonsai, Vertical Garden

3.3 Outdoor Garden – Lawns, Preparation of lawn, lawn types, Rockery, Terrace garden, Water garden, green house and polyhouse

3.4 Important aesthetic Gardens of India: i) Mughal garden, Delhi

ii) Brindavan garden, Mysore.

SEMESTER- VI
B.Sc. Part- III Botany
CREDITS: 2, LECTURE PERIOD: 3 PER WEEK, MARKS: 40+10
Paper- XIII DSE –F25
Plant Biochemistry and Molecular Biology

Unit 1: Carbohydrates **12**

- 1.1 Introduction and Classification of carbohydrates.
- 1.2 Structure and Properties of- a) Monosaccharides (Pentose: Ribose, Hexose: Glucose),
b) Oligosaccharides (Sucrose), c) Polysaccharides (starch).
- 1.3 Isomerism: Types of Isomers (Structural and Stereoisomer)
- 1.4 Significance of carbohydrates

Unit 2 : Lipids **12**

- 2.1 Introduction, General Structure, properties and classification of Lipids
- 2.2 Structure and properties of Saturated Fatty Acids (Stearic and Palmitic acid) and Unsaturated Fatty Acids (Oleic acid, Linoleic and)
- 2.3 Significance of Lipids

Unit 3: Proteins **11**

- 3.1. Introduction, ructure, Properties, Characteristics and classification of Amino acids
- 3.2. Brief Outline of biosynthesis of Amino acid: Proline
- 3.3. General Structure, Classification of Protein
- 3.4. Protein Biosynthesis in Eukaryotes: Transcription and translation

Unit 4: Nucleic Acids **10**

- 4.1 Introduction, Composition and Structure
- 4.2 DNA: Watson and Crick Model, Forms of DNA (A, B and Z)
- 4.3 DNA Replication in Eukaryotes
- 4.4 RNA: Types, structure and role of RNA's
- 4.5 Regulation of Gene expression- Lac Operon, Tryptophan Operon

B.Sc. Part- III Botany
CREDITS: 2, LECTURE PERIOD: 3 PER WEEK, MARKS: 40+10
Paper- XIV DSE –F26
Bioinformatics, Biostatistics and Economic Botany

Unit 1: Bioinformatics

14

- 1.1 Introduction, Aim, Scope and Branches of Bioinformatics
- 1.2 Biological Databases: Classification Format and Retrieval system of Biological Database, National Center for Biotechnological Information (NCBI), Basic Local Alignment Search Tool (BLAST)
- 1.3 Protein Information Resource (PIR) - Concept, Resources, Databases and Data Retrieval
- 1.5 Applications of Bioinformatics- Molecular Phylogeny (Concept, Methods, Analysis and Consistency)

Unit 2: Biostatistics

11

- 2.1 Introduction, definition, terminology.
- 2.2 Collection and presentation of data: Types of data, techniques of data collection- Census method, sampling method- simple random, stratified and systematic sampling. Classification, tabulation, graphical representation- Histogram and polygon.
- 2.3 Measures of central tendency and Dispersion: Arithmetic mean, Mode, Median, Range, Deviation, Mean deviation, Standard Deviation, Coefficient of Variation.
- 2.4 Statistical methods for testing the hypothesis') Students' T-test ii) Chi-square test.

Unit 3: Economic Botany: Cereals, Legumes and Oils

10

- 3.1 Origin of Cultivated Plants - Concept of centers of origin, their importance with reference to Vavilov's work.
- 3.2 Cereals: Origin, Botanical Name, Morphology, Sources and Economic importance of Wheat.
- 3.3 Legumes: Origin, Botanical Name, Morphology, Sources and Economic importance of Gram and Soybean.
- 3.4 Oils and Fats: Origin, Botanical Name, Morphology, Parts used and uses of Ground nut.

Unit 4: Economic Botany: Spices, Beverages and Fibers

10

- 4.1 Spices and Condiments - Origin, Botanical Name, Morphology, Parts used and Uses of Clove and Black pepper.
- 4.2 Beverages – Origin, Botanical Name, Morphology, Parts used and uses of Tea.
- 4.3 Fibre yielding Plants - Origin, Botanical Name, Morphology, Parts used and uses of Cotton.

B.Sc. Part- III Botany
CREDITS: 2, LECTURE PERIOD: 3 PER WEEK, MARKS: 40+10
Paper- XV DSE –F27
Plant Biotechnology and Paleobotany

Unit 1: Plant Biotechnology **03**

1.1 History, Definition, Scope and Importance (Areas of application)

1.2 Biotechnology in India

Unit 2: Recombinant DNA Technology **15**

2.1. Introduction, Principles and enzymes involved in DNA technology..

2.2. Cloning Vectors: a) Prokaryotic- Plasmid, Lambda phage and Cosmid.

(Brief idea) b) Eukaryotic-YAC (Yeast Artificial Chromosomes).

2.3 Southern blotting and Northern blotting techniques and its applications, Molecular Probes

2.4. DNA Fingerprinting, Molecular DNA Markers (RAPD, RFLP)

2.5 PCR, DNA sequencing and Concept of Gene bank.

Unit 3: Plant Tissue Culture **15**

3.1 Principles and Terminologies, Laboratory Requirement (Conditions and Instruments),
Culture Media, Totipotency and Cellular Differentiation,

3.2 Micro propagation: Stages of Micro propagation- Callus formation, Root Initiation, Shoot
Initiation, Primary and Secondary Hardening, Advantages and disadvantages

3.3 Embryogenesis: Protoplast culture, Cybrid

3.4 Somaclonal Variations

Unit 4: Paleobotany **12**

4.1 General account, Geological time scale, process of fossilization, Types of fossils.

4.2 Study of following form genera with reference to systematic position, external morphology
and affinities: a) *Lyginopteris* b) *Enigmocarpon*.

4.3 Application of paleobotany: Role of microfossil in oil and coal exploration.

B.Sc. Part- III Botany
CREDITS: 2, LECTURE PERIOD: 3 PER WEEK, MARKS: 40+10
Paper- XVI DSE –F28
Bio fertilizers and Herbal Drug Technology

Unit 1: Biofertilizers **11**

1.1 Introduction, Importance, types and study of –

- a) Bacterial fertilizers: *Rhizobium*, *Azotobacter*, *Azospirillum*
- b) Blue green Algal:, Cyanobacteria (BGA): *Nostoc*, *Anabaena*.
- c) Mycorrhizal association: VAM
- d) Fungal: *Trichoderma*

1.2 Organic manures –

- a) Farm Yard Manure, Green manure, Compost
- b) Vermicomposting and Vermi-wash

Unit 2: Herbal Medicines **11**

2.1 Definition, Importance of herbal medicines

2.2 Classification of crude drugs: Taxonomical, Morphological and Chemical

2.3 Identification, authentication, collection, processing and storage of medicinal plants.

2.4 Introduction to general methods of extraction, isolation and purification of
Phyto constituents.

Unit 3: Herbal cosmetology **11**

3.1 Applications of herbs in cosmetics: Shampoo (*Sapindus laurifolius*, *Acacia concinna*), hair
dye (*Lawsonia inermis*)

3.2 Facemask (*Santalum album*), bath oil (*Rosa indica*), perfume (*Jasminum sambac*).

Unit 4: Pharmacognosy **12**

4.1 Pharmacognosy: Introduction And, Definition

4.2 Medicinal uses of Tulsi, Ginger, Methi, Avala.

4.3 Adulteration of drugs of natural origin: Evaluation by morphological, Microscopic,
Chemical, Physical, Chromatographical, Spectrophotometric.

4.4 Plant antioxidants: Properties of Antioxidants, Vitamins (C and E)

Shivaji University, Kolhapur

B.Sc. III Botany (CBCS Syllabus)

Practical-I (Based on Paper No. X and XV)

- 1 Preparation of culture media –PDA (slants and Plates) and sterilization.
- 2 Methods of inoculation- on slants and plates
- 3 Isolation of soil fungi by serial dilution method.
- 4 Study of different types of stains in biological studies.
- 5 Method of control of seed borne diseases (Dipping/Seed dressing)
- 6 and 7 Plant diseases as per theory
- 8 and 9 Demonstration of Mushroom Cultivation and Harvesting
- 10 Isolation of plant genomic DNA and its spooling.
- 11 Calorimetric estimation of DNA using di-phenyl amine.
- 12 Preparation of plant tissue culture medium (M.S.).
- 13 Demonstration of techniques of *In Vitro* culture using suitable ex-plant.
- 14 Demonstration of inoculation of explants on suitable medium (M.S.)
- 15 Isolation of Protoplast.
- 16 Study of steps in genetic engineering for the production of Golden rice with the help of photographs.
- 17 Identification of types of fossils – i) Impression ii) Compression iii) Petrification IV) Coal.
- 18 Identification of – i) *Lyginopteris*
- 19 Identification of *Enigmocarpon*
- 20 Submission of plant diseases

Shivaji University, Kolhapur
B.Sc. III Botany (CBCS Syllabus)
Practical-II (Based on Paper No. IX and XIV)

1. Genetic examples on Linkage.
- 2 Genetic examples on Crossing over
- 3 Genetic examples on Polygene inheritance
- 4 Determination of chromosome count in PMCs in *Allium* / *Cynoetis*.
- 5 Detection of meiotic anomalies in chromosomes in *Rhoeo*.
- 6 Preparation of karyotypes – idiograms by using photographs.
- 7 Methods of emasculation
- 8 Breeding techniques in a) Malvaceae b) Fabaceae c) Poaceae
- 9 Mounting of floral parts.
- 10 Study of World map to show Vavilov's centers of origin of cultivated plants.
- 11 Study of Botanical Name. Morphology, Parts used and Economic importance of Wheat.
- 12 Study of Botanical Name. Morphology, Parts used and Economic importance of Gram and Soybean.
- 13 Study of Botanical Name. Morphology, Parts used and Economic importance of Clove and Black pepper.
- 14 Study of Botanical Name. Morphology, Parts used and Economic importance of Ground nut.
- 15 Study of Botanical Name. Morphology, Parts used and Economic importance of Cotton.
- 16 Measures of central tendency of given data.
- 17 Study of frequency distribution and its graphical representation
- 18 Determination of Standard deviation of the given data.
- 19 Submission of PPT on the basis gene transfer method.

Shivaji University, Kolhapur
B.Sc. III Botany (CBCS Syllabus)
Practical-III (Based on Paper No. XI and XVI)

1. To study prokaryotic cells (bacteria), eukaryotic cells with the help of electron micrograph / photographs.
- 2 and 3 Study of the photomicrography technique.
- 4 Study of cell structure in Onion, *Hydrilla* leaf and *Spirogyra* filament.
- 5 Study of mitosis.
- 6 Study of meiosis.
7. Use of dialysis to separate smaller molecules from larger molecules.
- 8 Micrometry technique.
- 9 Study of DNA packaging by micrographs.
- 10 Study of Beer and Lambert's Law.
- 11 Preparation of permanent cytological slides.
- 12 Submission of photomicrograph.
- 13 Application of Biofertilizers - i) *Nostoc* ii) *Azotobacter* iii) *Rhizobium* iv) *Trichoderma*
- 14 Identification of organic manure – i) Green manure (*Crotalaria juncea*),
ii) Vermicompost iii) Vermiwash
- 15 and Herbal Preparations of
- 16 i) Churn (Triphalachurna) ii) Kadha /Decoction (Adulsa)
iii) Hair oil (Maka)iv) Shampoo (Ritha, Shikakai).
- 17 Biochemical test for drug adulteration of
i) Haladi (*Curcuma longa*) ii) Hing (*Ferulaaassa-foetida*)
iii) Camphor (*Cinnamomum camphora*) iv) Saffron (*Crocus sativus*)
- 18 Macroscopic (Organoleptic) study of – i) Tulsi ii) Ginger iii) Methii v) Avala.
- 19 Determination of Vein-islet Number by Camera Lucida.
20. Phytochemical analysis- Qualitative tests for Tannins, Alkaloids, Saponins, Steroids, Terpenoids, Flavonoids, reducing sugars, carbohydrates. (Any four).
- 21 Visit to Herbal cosmetics industry/Pharma industry (Separate handwritten report to be submitted by student).

Shivaji University, Kolhapur
B.Sc. III Botany (CBCS Syllabus)
Practical-IV (Based on Paper No. XII and XIII)

1. Study of budding technique – Patch and T-budding
- 2 Study of Layering technique – Air layering
- 3 Study of Grafting technique – Whip and Approach
- 4 Technique of Potting and Repotting
- 5 Demonstration of Bonsai
- 6 Demonstration of Bottle garden and hanging baskets.
- 7 Floral arrangement – Flower pot, Floral bouquet, Floral Rangoli
- 8 Garden implements (Any five) – Garden shear, sickle, cutter, shovel, budding knife, secateur, water can, pruning scissors, sprayer, spade
- 9 Study of ornamental plants – Rose, Gerbera, Marigold
- 10 Study of hedge and edge plants.
- 11 Study of indoor plants.
- 12 Qualitative test for sugar in plant material
- 13 Qualitative tests for starch and cellulose in plant material
- 14 Qualitative test for proteins.
- 15 Qualitative test for lipids.
- 16 Identification of sugars by ascending paper chromatography.
- 17 Determination of fatty acid value of oil sample.
- 18 Separation and identification of amino acids by TLC (Thin Layer Chromatography).
- 19 Determination of iso-electric point of plant protein.
20. Visit to nursery/ Aesthetic garden / Exhibition / Food industry (Separate handwritten report to be submitted by student)

List of Books Recommended for B. Sc. III Botany

Cytology and Genetics ---

1. Cell Biology - S. C. Rastogi (1992)
2. Cell Biology - C. B. Powar (2000)
3. Cell Biology, Genetics, Evolution and Ecology – P S. Verma, V K. Agarwal (2001)
4. Cell Biology - R. Dowben (1971)
5. Cell and Molecular Biology – P. K. Gupta (1999)
6. Cell and Molecular Biology (2001) – E. D. P De Robertis & E. M. F De Robertis (Jr.)
7. Cell Physiology - A C. Giese (1979)
8. Cellular Energy Metabolism and Its Regulation - Atkinson, D. E. (1977)
9. Genetics - P. K Gupta (1997) Rastogi Publications. Shivaji Road, Meerut.
10. Gene Action - Hartman and Suskind (1968)
11. Cytology and Genetics.--Dnyansagar (T. Magrewith & Co.)
12. Plant Chromosomes: Laboratory Methods--Fukui. K. and Nakayama S. 1996. CRC Press, Boca Raton, Florida.
13. Plant Chromosomes: Analysis Manipulation and Engineering. Sharma A.K. and Sharma A. 1999. Hawood Academic Publishing, Australia.
14. Fundamentals of Cytology --L. W. Sharp.
15. Principles of Genetics -Snustad. D. P. and Simmons. M.J. 2000. (2nd Edition). John Wiley & Sons Inc., USA.
16. Cytogenetics and Plant Breeding-- S N. Chandrashekharan and S. V. Parthasarathy.
17. The Science of Genetics.-Atherly. A.G., Girton. J.R. and McDonald. 1999. Saunders College Publishing Co., Fort Worth USA.
18. Principles of Genetics- Gardener. J., Simmons. H.J. and Snustad. D.P. 1991. (8th Edition). John Wiley & Sons, New York.
19. Genetics: Principles and Analysis--Hartl.D.L.and Jones.E.W. 1998. (4th Edition) Jones & Barlett Publishers. Massachusetts. USA.
20. Genetics (5th Edition).-Russel. P.J. 1998. The Benjamin/Cummings Publishing Co., Inc., USA.
21. Molecular Biology of Cell. Alberts B., Bray D., Lewis, J., Raff, M. Roberts, K. and Watson, J.D. 1999. Garland Publishing Co., Inc., New York USA.
22. Karp, G. 2010. Cell and Molecular Biology: Concepts and Experiments. 6th Edition. John Wiley & Sons. Inc.
23. De Robertis, E.D.P. and De Robertis, E.M.F. 2006. Cell and Molecular Biology. 8th edition. Lippincott Williams and Wilkins, Philadelphia.
24. Becker, W.M., Kleinsmith, L.J., Hardin. J. and Bertoni, G. P. 2009. The World of the Cell. 7th edition. Pearson Benjamin Cummings Publishing, San Francisco.
25. Molecular biology (principles and practices) Dr. priyanka Siwach and Dr. Namita singh laxmi publication. ISBN 9788131807476.
26. Molecular biology , N Arumugam , Saras Publication . ISBN 9789382459835
27. Molecular biology , Dr. P.S. Verma , Dr. V.K. Agrawal, P.Chand Publication
28. Molecular biology Concepts for Inquiry Jenifer A Hackett.
29. Essential cell biology 4th edition Bruce alberts, Dennis bray, Karen Hopkin, Alexander D, Johnson.

Economic Botany:

1. Kocchar, S. L. 1998. Economic Botany in Tropics, 2nd edition. MacmillanIndia Ltd., New Delhi.
2. A Textbook of Economic Botany--Sambamurthy, A. V. S. S. and Subramanyam, N. S. 1989. Wiley Eastern Ltd., New Delhi.
3. Hill's Economic Botany. -- Sharma, O. P. 1996. Tata McGraw Hill Publishing Company Ltd., New Delhi.
4. Economic Botany - Plants in Our World. Simpson, B. B. and Conner-Ogorzaly, M. 1986. McGraw Hill, New York.

Horticulture and Gardening:

1. Gardening in India. -- Percy Lancaster (1997) Oxford & I B H Publishing Co.Pvt.Ltd, New Delhi.
2. Floriculture: Fundamentals & Practices. - Alex Laurie and Ries V.C. (2003)
3. Percy Lancaster's Gardening in India.- Bose, T.K. and Mukherjee, D. (1997) (Ed.)Oxford and IBH Publ. (P.) Ltd., New Delhi, India.
4. A Art of Miniature Plant Culture. - Day, S.C. (2003)Agrobias. Jodhpur, India.
5. Complete Home Gardening. -Dej, S.C. (2003) Agrobias, Jodhpur, India.
6. Principles and Techniques for Plant Scientists. -Dhopte, A.M. (2003) Agrobios,Jodhpur, India.
7. Horticulture and Gardening.- Khan, M.R. (1995) NiraliPrakashan, Pune. India.
8. Gardening for every one- PramilaMehra. Hind pocket book private limited, NewDehli.
9. Kumarsen V. Horticulture ,Saras Publication
- 10.Bose T.K. & Mukherjee, D., 1972, Gardening in India, Oxford & IBH PublishingCo., New Delhi.
11. Sandhu, M.K., 1989, Plant Propagation, Wile Eastern Ltd., Bangalore, Madras.
- 12.Kumar, N., 1997, Introduction to Horticulture, Rajalakshmi Publications, Nagercoil.
- 13.Edmond Musser & Andres, Fundamentals of Horticulture, McGraw Hill Book Co.,New Delhi.
- 14.Agrawal, P.K. 1993, Hand Book of Seed Technology, Dept. of Agriculture andCooperation, National _Seed Corporation Ltd., New Delhi.
- 15.Janick Jules. 1979. Horticultural Science. (3rd Ed.), W.H. Freeman and Co., SanFrancisco, USA.
- 16.Randhawa, G.S. and Mukhopadhyay, A. 1986. Floriculture in India. Allied Publishers.

Microbiology and Plant Pathology

- 1) Microbiology- P.D.Sharma; Rastogi Publications
- 2) Plant Pathology- Mehrotra
- 3) Plant Diseases- R.S. Singh
- 4) Plant Diseases- Rangaswamy

Biochemistry

- 1) Fundamentals of Biochemistry- J.L.Jain, Sunjay Jain, Nitin Jain; S. Chand & Company Ltd.
- 2) Cell Biology, Genetics, Molecular Biology, Evolution and Ecology- P. S. Verma, V. K. Agarwal; S. Chand & Company Ltd.

Bioinformatics

- 1) Introduction to Bioinformatics – S. Sundara Rajan, R. Balaji; Himalaya Publishing House.

Plant Biotechnology

1. Elements Of Biotechnology- P. K. Gupta (Second Edition); Rastogi Publications
2. Plant Tissue Culture - Kalyan Kumar De; New Central Book Agency (P) Ltd.
3. Introduction to Plant Tissue Culture - M. K. Razdan (Second Edition); Oxford & IBH Publishing Co. Pvt. Ltd.
4. Practical Biotechnology and Plant Tissue Culture - Prof. Santosh Nagar, Dr. Madhuri Adhavi; S. Chand & Co. Ltd.
5. Arnold C.A.1972. An Introduction to PalaeobotanyTata McGraw-Hill,
6. Andrews H.N. Studies in Palaeobotany 1961. John Wiley & Sons Canada, Limited,
7. Shukla A.C. and S.P . Mishra. Essentials of Palaeobotany.
8. Wilson, N. S. and Rothwell,G.W.1983. Palaeobotany and the Evolution of Plants (2ndEdition).Cambridge University Press U.K.
9. Dubey, R.C., 2005 A Text book of Biotechnology S.Chand& Co, New Delhi.
10. Kumaresan, V. 2005, Biotechnology, Saras Publications, New Delhi.
11. John JothiPrakash, E. 2004. Outlines of Plant Biotechnology. Emkay –Publication, NewDelhi.

Biofertilizers and Herbal Technology

1. Sathe, T.V. 2004 Vermiculture and Organic Farming. Daya publishers.
2. SubhaRao, N.S. 2000, Soil Microbiology, Oxford & IBH Publishers, New –Delhi.
3. Vayas,S.C, Vayas, S. and Modi, H.A. 1998 Bio-fertilizers and organic –Farming Akta Prakashan, Nadiad
4. Chopra R.N., S.L.Nayar and I.C.Chopra, 1956.Glossary of Indian medicinal plants C.S.I.R, New Delhi.
5. Dey and Raj Bahadur,1984. The indigenous drugs of India, Kanny, Lall,. International Book Distributors.

Details of Practical Examination

A) Every candidate must produce a certificate from Head of the Dept. in his /her college, stating that he / she has completed practical course in satisfactory manner as per guidelines laid down by Academic Council on the recommendations of Board of Studies in Botany. The student should record his / her observations and report of each experiment should be written in the journal. The journal is to be signed periodically by teacher in charge and certified by the Head of the Department at the end of year. Candidates have to produce their certificated journal and tour report at the time of practical examination. Candidate is not "allowed to appear" for the practical examination without a certified journal / a certificate from Head of the Botany Dept. regarding the same.

B) Practical Examination shall be of Five hours duration and shall test a candidate in respect of the following.

1. Practical study of external and internal structures of different plant types and their classification.

Making temporary stained preparations and identification.

2. Identification and setting of experiments as per syllabus.

4. Spotting of the specimens as per syllabus.

Botanical Excursions

One teacher along with a batch not more than 20 students be taken for botanical excursion to places of Botanical interest, one in each term. If there are female students in a batch of 20 students, one additional lady teacher is permissible for excursion. Each excursion will not be more than **SEVEN** days during college working days. T.A. and D.A. for teachers and non-teaching staff participating in excursions should be paid as per rules. Tour report duly certified by tour in charge teacher and Head of the Department should be submitted at the time of practical examination. For every study tour take the prior permission of the head of the department and Principal.

Practical Course

B. Sc. III Botany Practical course covered in four practical numbers (Practical no.1 , Practical no.2, practical no.3 and practical no. 4 with total 80 practicals). These practicals are to be performed by the students. Each practical is to be supplemented by permanent slides, preserved / fresh specimens / materials, charts, herbarium sheets, etc. wherever necessary.

C] OTHER FEATURES:

1. INTAKE CAPACITY / NUMBER OF STUDENTS:-

As per university rules.

2. TEACHERS QUALIFICATIONS:-

- As prescribed by norms.
- However required number of core faculty should be given for particular course along with paper wise and Specialization wise work load allocation.
- Work load details should be as per Apex body/UGC/State Govt./University norms.

2 The Board of studies should clearly mention the required Books, Journals and specific Equipments necessary for the Course.

(A) LIBRARY: Library be equipped with the required Reference and Text Books, Journals and Periodicals for higher and advanced studies as per stated in revised syllabus and approved by BOS.

(B) SPECIFIC EQUIPMENTS:

T.V., V.C.R. V.C.P., L.C.D., Overhead Projector, Computers and necessary software and operating systems etc. are necessary to run the course.

(C) LABORATORY SAFETY EQUIPMENTS

- i) Fire extinguishers at least two sets in each laboratory of 600 sq.ft. Area.
- ii) Leakage of gases be avoided.
- iii) First aid kit be made available.
- iv) Sugar / Glucose –500gm pack- a pinch of sugar and a cup of drinking water in hypoglycemic condition or in extreme weakness of student or a person concerned

B) GENERAL SAFETY RULES FOR LABORATORY WORK

1) List of equipments needed for Laboratory Safety:-

- 1. Fire extinguisher
- 2. First Aid Kit
- 3. Good earthing and insulated wirings for electrical supply.
- 4. Emergency exit
- 5. Apron and goggles wherever necessary
- 6. Fuming Chambers
- 7. Masks flows and shoes while handling hazardous chemicals & gases (Good valves, manometers and regulators for gas supply)
- 8. Operational manuals for instruments (handling to be made as suggested.)
- 9. Rules of animals and blanks ethics.
- 10. Leakage of gases to be avoided.
- 11. Cylinders or flow pipes to handle Acids.
- 12. No weighings for NaOH and hygroscopic substances.
- 13. Stabilized supply in the laboratory.

2) There Is No Substitute for Safety

- 1. Any injury no matter how small, it must be reported to teacher immediately.
- 2. a) In case any chemical enters your eyes go immediately to eye- wash facility and flush your eyes and face with large amount of water.
b) For acid or phenol split, do not use water instead put some bicarbonate.
- 3. In case of fire, immediately switch off all gas connections in the laboratory and pour sand on the source of fire or cover it with asbestos or cement sheet.
- 4. While leaving laboratory, make sure that gas, water taps and electricity are switched off.
- 5. Remove your lab coat. Gloves and clean your hands before leaving laboratory.
- 6. Make your workplace clean before leaving the laboratory.
- 7. Keep your hands away from your face, while working in laboratory.
- 8. Each laboratory must have a first aid box.

9. Know what to do in case of emergency - e.g.
(a) Know the place of fire extinguisher and first aid box.
10. Don't use cell phones in the laboratory.
(a) Remember important phone numbers

3) DO's

1. Always wear lab coat, shoes in the laboratory. Every student must have their weight box, a napkin etc.
2. Maintain separate record book for each subject.
3. Keep your belongings at the place allotted for the same.
4. Maintain silence, order, cleanliness and discipline in the laboratory.
5. Work at the place allotted to you or specially used for certain operations.
6. Keep the working table clean.
7. Handle the laboratory equipments, glassware and chemical with great care.
8. Use only required quantities of material and apparatus of essential size.
9. Perform the test in their proper order.
10. Know the location of eye wash fountain and water shower.
11. Minimize your exposure to organic solvents.
12. The Metal like sodium should be kept under kerosene or liquid paraffin layer in a vessel with a cork stopper.
13. Sodium metal should be cut on dry filter paper. The cut off pieces of sodium should be immediately collected in a vessel containing kerosene or liquid paraffin.
14. Always pour acid into water when diluting and stir slightly.
15. All operations involving poisonous flammable gases and vapours should be carried out in the flame chamber (with exhaust facility)
16. Ladies should avoid wearing saree. If it is there, apron is essential.

4) DON'T

1. Don't work alone in the laboratory
2. Don't leave the glass wares unwashed.
3. Don't take apparatus, chemicals out of lab.
4. Don't leave any substance in a vessel or bottle without label.
5. Don't weigh the reagent directly on the balance pan.
6. Don't throw the cut off pieces of sodium metal in sink or water. Transfer it immediately in its container.
7. Don't take sodium metal with hands. Use forceps.
8. Don't panic and run in case of fire. Use the fire extinguishers or sand buckets.

9. Don't breathe the vapours of organic solvents.
10. Don't pour any unused reagent back in its stock bottle.
11. Don't eat or drink any food in laboratory.
12. Don't use inflammable solvents like benzene, ether, chloroform, acetone and alcohol around flame.
13. Don't distill to dryness.
14. Don't exchange stoppers of flasks and bottles containing different reagents.
15. Don't leave reagent bottle lying on the table.
16. Don't disturb the order of reagent bottles in which they are placed.
17. Don't bring reagent on your working table from the general shelf.
18. Don't throw burning matchstick into dustbin.
19. Don't leave the laboratory without permission.

5) LABORATORY / FIELD WORK CARE AND SAFTY FOR BOTANY STUDENTS

1. Unnecessary wastage of plant material during practical should be avoided.
2. During study tour / personal collection, more emphasis be given on study of plants in nature and collection of wild plants should not be carried out.
3. If at all the collection of the plant material is needed, it should be carried out under supervision of concerned teacher. Collection of poisonous plants / poisonous mushrooms should be avoided.
4. Oral intake of unknown plant material, out of curiosity, during practical or collection tour is strictly prohibited.
5. If there is any allergic reaction while handling the plants / plant parts / pollen grains / fungal specimens it should be immediately brought to the notice of the concerned teacher and reported to the registered medical practitioner.
6. Wearing of hand gloves (and mask) is essential while handling poisonous plants / herbarium sheets / toxic and hazardous chemicals / reagents / strong acids / strong alkalis during the experiment should be made with vacuum pipette / auto pipette / burette under the supervision of concerned teacher / lab assistant.
7. Highly inflammable organic solvents (alcohol, acetone etc.) should not be kept in vicinity of spirit lamp.
8. The laboratory safety measures adopted for handling of hazardous chemicals in chemistry practicals should be followed for conducting practicals in plant biochemistry / microbiology.
9. Operational manuals for equipments such as centrifuge, autoclave, spectrophotometer should be followed.

10. In case of minor injuries, preliminary treatment should be undertaken with the help of first aid kit available in the laboratory. In case of serious injury, concerned teacher should be immediately contacted for consultation to the physician.
11. The instruction report for breeding, experimentation will be submitted in a week period. (Which are laid down by Ministry of Social Justice & Empowerment and Ministry of Environment and Forests, Govt. of India).

Course outcomes

1. Students are acquainted with basic as well as recent knowledge in the field of molecular biology, biotechnology and bioinformatics
2. Acquiring the basic procedure in the field of microbiology and plant pathology.
3. To develop skills in of horticulture including nursery, landscaping, gardening, floriculture and pomology
4. Students will be able to demonstrate their knowledge, skills and attributes to be successful contributing members of the horticulture profession.
5. Acquaint the student with the comprehensive knowledge in the bio fertilizers, herbal drug technology and paleobotany
6. Students will be able to demonstrate their understanding of relevant course theories and concepts
Students able to Mendelian and Neo-mendelian genetics
7. Students become familiar with the Organic manures, Herbal Medicines, Herbal cosmetology and Pharmacognosy.
8. Understand the methods of Plant Biotechnology, Protoplast culture and Recombinant DNA Technology.
9. Acquainted the scope of paleobotany in the present scenario and understand the fossil genera
10. Aware about the Spices, Beverages and Fibers, Cereals, Legumes and Oils.
11. Understand the of carbohydrates, lipids, proteins
12. Understand the techniques of plant breeding
13. Understand the techniques of mushroom cultivation.
14. Acquainted the techniques of micrometry, chromatography and other laboratory techniques used in the field of life science.

SHIVAJI UNIVERSITY, KOLHAPUR.



Accredited By NAAC with 'A' Grade

Revised Syllabus For

B.Sc Part- III

Zoology

Syllabus to be implemented from

June, 2020 onwards.

SHIVAJI UNIVERSITY, KOLHAPUR

Revised Syllabus for Bachelor of Science

B. Sc. III – Zoology –To be implemented from June 2020

GENERAL OBJECTIVES OF THE COURSE

1) Aims:

1. To impart the knowledge of animal science to the pupils.
2. To make the pupils to use the knowledge in their daily life.
3. To make the pupils aware of natural resources and environment.
4. Application of knowledge in Zoology for nutrition, agriculture & live stock.
5. To provide practical experiences which form a part of their learning processes.
6. To develop aptitude for scientific work & ability to pursue studies far beyond graduation.
7. To encourage the pupils to take life science as a carrier which is the need now a days.
8. To make the pupils fit for the society.

2) Objectives –

1. To impart knowledge is the basic aim of education. The students are expected to acquire the knowledge of animal science, natural phenomenon, manipulation of nature & environment by man.
2. Understanding the scientific terms, concepts, facts, phenomenon & their interrelationships.
3. Applications of the knowledge.
4. To develop skills in practical work, experiments & laboratory materials, instruments.
5. To develop interests in the subject & scientific hobbies.
6. To develop scientific attitude which is the major objective? This makes the students open minded, critical observations, curiosity, thinking etc.
7. Abilities to apply scientific methods, collection of scientific data, problem solving, organize science exhibitions, clubs etc.
8. Appreciation of the subject, contributions of scientists, scientific methods, scientific programs etc.

3) DURATION

- The course shall be full time course.
- The duration of course shall be three years.

4) PATTERN: Pattern of Examination will be semester for theory and annual for practical with INTERNAL ASSESSMENT (Project/Seminar/Field work for theory) Scheme

5) MEDIUM OF INSTRUCTION: The medium of instruction shall be in English.

6) STRUCTURE OF COURSE: B.Sc. III – Zoology THEORY – No. of papers: Eight,
No of practicals: Four SEMESTER V-Paper IX to XII & SEMESTER VI- Paper XIII to XVI

SEMESTER-V Theory

Sr. No.	Subject	Marks	University	Internal
1	Zoology Paper- IX	50	40	10
2	Zoology Paper- X	50	40	10
3	Zoology Paper- XI	50	40	10
4	Zoology Paper- XII	50	40	10

Total=200

SEMESTER-VI Theory

Sr. No.	Subject	Marks	University	Internal
1	Zoology Paper- XIII	50	40	10
2	Zoology Paper- XIV	50	40	10
3	Zoology Paper- XV	50	40	10
4	Zoology Paper- XVI	50	40	10

Total = 200

PRACTICALS- Annual

09	Practical—V	50
10	Practical – VI	50
11	Practical – VII	50
12	Practical – VIII	50

Total 200

Total = 600

7. SCHEME OF TEACHING AND EXAMINATION (Teaching scheme - Hrs/Week)

No	Sem. - V	Sem. - VI	L	P	Total
1	Paper No IX Paper No. XIII	Paper No IX Paper No. XIII	3		
2	Paper No IX Paper No. XIII	Paper No IX Paper No. XIII	3		
3	Paper No IX Paper No. XIII	Paper No IX Paper No. XIII	3		
4	Paper No IX Paper No. XIII	Paper No IX Paper No. XIII	3		
			12		12
1	Practical V			5	
2	Practical VI			5	
3	Practical VII			5	
4	Practical VIII			5	
				20	20
	Total				32

8) SCHEME OF EXAMINATION

Question paper will be set in the view of the / in accordance with the entire syllabus and preferably covering each unit of syllabi.

9) EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS (FOR REVISED SYLLABUS)

Refer copy of revised syllabus

10) OTHER FEATURES

1. Required Books, Journals stated in each syllabus of Part I, Part II and Part III Zoology and Fisheries.

A) LIBRARY : Reference and Text Books, Journals, and Periodicals, Reference Books for Advanced Studies.

B) SPECIFIC EQUIPMENTS: Necessary to run the Course (T.V., L.C.D., and Overhead Projector), (Computer and necessary software's, operating systems etc.)

C) LABORATORY SAFETY EQUIPMENTS

- Fire Extinguishers at least two sets in each laboratory. (Lab. area 600 sq.ft.)

- Leakage of gases be avoided.
- Primary medical aid box (First Aid Kit)
- Sugar / Glucose – 500 gm pack: Pinch of sugar and a cup of drinking water in hypoglycemic condition. OR In extreme weakness of student or person concerned.
- Rules of animal ethics should be strictly followed.

D) LABORATORY INSTRUCTIONS

- 1) Always wear an apron inside the laboratory. Do not wear it outside.
- 2) Do not drink or eat inside the laboratory.
- 3) Do not place pencil, fingers or any material in the mouth. Moisten labels with water.
- 4) Use microscopes and other instruments carefully.
- 5) Discard all used glassware such as test tube, pipettes, petry-plates, glass slides in a receptacle meant for it.
- 6) Put cotton plugs, papers, matches, waste dissection material etc. in a waste-paper basket. Do not throw them in sink not leave them on desk or floor.
- 7) Regard all cultures as pathogenic. Take every precaution against infection.
- 8) Report all accidents to the instructor immediately.
- 9) Wash hands thoroughly with soap and water before and after dissection and experiment.
- 10) Always turn off water, gas and electricity before leaving the laboratory.
- 11) When students enter in laboratory they should have – A Laboratory Journal, pencil and eraser, foot rule, dissection box with dissecting instruments, a small napkin.
- 12) All drawings must be made with drawing pencil only.
- 13) As the journal is to represent student's bonafide work during the whole year, student should keep it as clean as possible and DO NOT LOOSE IT
- 14) Students should not forget that unless their journals are certified, they are not allowed to appear for the university examination

11) COMMON NATURE OF QUESTION FOR THEORY

PAPER: SEMISTER – V Zoology Paper (IX, X, XI, XII)

SEMISTER – VI Zoology Paper (XIII, XIV, XV, XVI)

Q. 1	Multiple Choice Questions (Eight questions)	08
Q. 2	Long answer questions (Attempt any two out of three)	16
	A.	
	B.	
	C.	
Q. 3	Shorn Notes (Attempt any four out of Six)	16
	a.	
	b.	
	c.	
	d.	
	e.	
	f.	

SHIVAJI UNIVERSITY, KOLHAPUR

Syllabus of B.Sc. Part III Zoology

Zoology Paper- IX

DSE-E29 (COMPARATIVE ANATOMY OF VERTEBRATES)

Theory: 30 hrs. (37.5 lectures of 48 minutes) (Credits 2)

Unit 1: Integumentary System	4
1. Generalized structure of integument	
2. Functions of Integument	
3. Soft and Hard epidermal derivatives	
4. Hard epidermal derivatives	
Unit 2: Skeletal System	4
1. Vertebral column	
2. Appendicular skeleton	
Unit 3: Digestive System	4
Brief account of alimentary canal and digestive glands	
Unit 4: Respiratory System	4
Brief account of Gills, lungs, air sacs	
Unit 5: Circulatory System	4
Evolution of heart and aortic arches	
Unit 6: Evolution of Kidney	3
Succession of kidney	
Unit 7: Nervous System	3
Comparative account of brain	
Unit 8: Sense Organs	4
Comparative account of ear and eye of vertebrates	

SUGGESTED READINGS:

1. Kardong, K.V. (2005) Vertebrates' Comparative Anatomy, Function and Evolution. IV Edition. McGraw-Hill Higher Education. Kent, G.C. and Carr R.K. (2000). Comparative Anatomy of the Vertebrates. IX Edition
2. The McGraw-Hill Companies. Hilderbrand, M and Gaslow G.E. Analysis of Vertebrate Structure, John Wiley and SonsWalter, H.E. and Sayles, L.P; Biology of Vertebrates, Khosla Publishing House.

3. Outlines of comparative anatomy, Romer & Parsons, Central Book Depot, The Vertebrate Body (Saunders).
4. Biology of Vertebrates Walter & Sayles; (McMillan).
5. Chordate Zoology, P.S. Dhami & J. K. Dhami - R. Chand & Co., New Delhi.
6. Modern Textbook of Zoology, R. L. Kotpal, Rastogi Publications, Meerut.
7. The Life of Vertebrates, 3rd Edition, 1993, J. Z. Young E. L. B.S. Oxford.
8. Chordate Zoology - E.L. Jordan, S. Chand & Co., New Delhi.
9. The Phylum Chordata - 1987, H.H. Newman, Distributor Satish Book Enterprise, Agra. 8. Comparative Anatomy of the Vertebrates G. C. Kent.

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Syllabus of B.Sc. Part III Zoology

Zoology Paper- X

DSE-F29 (Molecular Cell Biology and Animal Biotechnology)

Theory: 30 hrs. (37.5 lectures of 48 minutes) (Credits 2)

Unit 1: Molecular Biology –

7

- 1) DNA Replication (Semiconservative mode)
- 2) DNA Damage and Repair mechanism
- 3) Regulation of gene expression- Operon concept
- 4) Genetic Code:
 - i) Properties of Genetic code
 - ii) Codon assignment
 - iii) Wobble hypothesis

Unit 2: Protein synthesis

8

- A) Transcription
 - i) Process in prokaryotes and eukaryotes
 - ii) RNA polymerase
 - iii) Post transcriptional modification in RNA
- B) Translation in prokaryotes and eukaryotes
 - i) Initiation
 - ii) Elongation
 - iii) Termination

Unit 3 : Molecular Techniques in Gene manipulation

15

1. Restriction enzymes: Nomenclature, detailed study of Type II.
2. Characteristics of Cloning vectors: Plasmids, Cosmids, Phagemids, Lambda Bacteriophages
3. Gene cloning: Transformation techniques by Calcium chloride method and electroporation
4. Construction of genomic and cDNA libraries
5. Southern, Northern and Western blotting
6. DNA sequencing: Sanger method
7. Polymerase Chain Reaction,
8. DNA Finger Printing
9. DNA micro array

SUGGESTED READINGS:

1. Brown, T.A. (1998). Molecular Biology Labfax II: Gene Cloning and DNA Analysis. II Edition, Academic Press, California, USA. Glick, B.R. and Pasternak, J.J. (2009).
2. Molecular Biotechnology - Principles and Applications of Recombinant DNA. IV Edition, ASM press, Washington, USA. Griffiths, A.J.F., J.H. Miller, Suzuki, D.T., Lewontin, R.C. and Gelbart, W.M. (2009).
3. An Introduction to Genetic Analysis. IX Edition. Freeman and Co., N.Y., USA. Snustad, D.P. and Simmons, M.J. (2009).
4. Principles of Genetics. V Edition, John Wiley and Sons Inc. Watson, J.D., Myers, R.M., Caudy, A. and Witkowski, J.K. (2007).
5. Recombinant DNAGenes and Genomes- A Short Course. III Edition, Freeman and Co., N.Y., USA. Beauchamp, T.I. and Childress, J.F. (2008).
6. Principles of Biomedical Ethics. VI Edition, Oxford University Press.
7. Cell and Molecular Biology, 8th Edition, De. Robertis EDP and De Robertis Jr. EMF, Lippincott Williams and Wilkins, Philadelphia.
8. Cell Biology, C.B. Powar, Himalaya Publication House.
9. Cell and Molecular Biology, E.J. Dupraw, Academic Press, New York.
10. Cell Structure and Function - A. G. Loewy, P. Siekevitz, J. R. Meninger & J. A. N. Gallant, Saunder College, Philadelphia.
11. Molecular Biology of the Cell - 3rd Edition, Bruce Alberts, Dennis Bray, Julian Lewis, Martin Raff, K. Roberts & James D. Watson, Garian Publishing, New York.

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Syllabus of B.Sc. Part III Zoology

Zoology Paper- XI

DSE-F30 (Biotechniques and Biostatistics)

Theory: 30 hrs. (37.5 lectures of 48 minutes) (Credits 2)

Unit I: Genetically Modified Organisms

9

1. Production of cloned and transgenic animals:
 - a. Nuclear Transplantation
 - b. Retroviral Method
 - c. DNA microinjection
2. Applications of transgenic animals:
 - a. Productions of pharmaceuticals
 - b. Production of donor organs
3. Knockout mice.

Unit II: Culture Techniques and Applications

6

- a. Animal cell culture: Introduction, principle and applications
- b. Stem Cells: Introduction to stem cells
 - i) Potency of stem cells: Totipotency, Pluripotency, Multipotency, Unipotency
 - ii) Sources of stem cells-Embryo, Fetal, Adult, Bone marrow

Unit III: Biostatistics

15

- a. Classification of Biological data
- b. Frequency distribution
- c. Tabulation
- d. Graphical representation of data
- e. Measures of central tendency (Mean, Median, Mode)
- f. Dispersion – Mean, deviation & standard deviation
- g. Correlation – Scattered diagram, Karl Pearson's correlation coefficient and Spearman's rank correlation coefficient.

SUGGESTED READINGS:

1. Brown, T.A. (1998). Molecular Biology Labfax II: Gene Cloning and DNA Analysis. I Edition, Academic Press, California, USA. Glick, B.R. and Pasternak, J.J. (2009). Molecular Biotechnology - Principles and

2. Applications of Recombinant DNA. IV Edition, ASM press, Washington, USA. Griffiths, A.J.F., J.H. Miller, Suzuki, D.T., Lewontin, R.C. and Gelbart, W.M. (2009)
3. An Introduction to Genetic Analysis. IX Edition. Freeman and Co., N.Y., USA. Snustad, D.P. and Simmons, M.J. (2009).
4. Principles of Genetics. V Edition, John Wiley and Sons Inc. Watson, J.D., Myers, R.M., Caudy, A. and Witkowski, J.K. (2007).
5. Recombinant DNA Genes and Genomes- A Short Course. III Edition, Freeman and Co., N.Y., USA. Beauchamp, T.I. and Childress, J.F. (2008).
6. Principles of Biomedical Ethics. VI Edition Oxford University Press.
7. Elements of Biotechnology - P. K. Gupta, Rastogi Publications.
8. Gene V & VI, 1994, Lewin B., Oxford University Press, Oxford.
9. Concept of Genes-Pearson Edition 9. Cell and Molecular Biology

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Syllabus of B.Sc. Part III Zoology

Zoology Paper- XII

DSE-F31 (AQUATIC BIOLOGY)

Theory: 30 hrs. (37.5 lectures of 48 minutes) (Credits 2)

Unit 1: Aquatic Biomes **10**

- a. Freshwater ecosystem (lakes, wetlands, streams and rivers),
- b. Estuaries
- c. Intertidal zones
- d. Oceanic pelagic zone
- e. Marine benthic zone
- f. Coral reefs

Unit 2: Freshwater Biology **10**

- 1. Lakes
 - a. Lake as an Ecosystem
 - b. Lake Morphometry
 - c. Physico-chemical characteristics
 - i. Light
 - ii. Temperature
 - iii. Thermal Stratification
 - iv. Dissolved solids
 - v. Carbonates
 - vi. Bicarbonates
 - vii. Phosphates and Nitrates
 - viii. Turbidity
 - ix. Dissolved gases (Oxygen Carbon dioxide)
 - x. Nutrient Cycle – (Nitrogen, Sulphur and Phosphorus)
- 2. Streams
 - a. Different stages of stream development
 - b. Physico-chemical Environment
 - c. Adaptation of hill stream fishes

Unit 3: Endocrinology **10**

- a. Study of endocrine glands – Anatomy and histology
- b. Hormones- Nature, role, regulation and disorders with reference to the following
thyroid gland, parathyroid gland, adrenal gland and islets of Langerhans

SUGGESTED READINGS:

1. Anathakrishnan : Bioresources Ecology 3rd Edition
2. Goldman : Limnology, 2nd Edition
3. dum and Barrett : Fundamentals of Ecology, 5th Edition
4. Pawlowski : Physicochemical Methods for Water and Wastewater Treatment, 1st
5. Edition Wetzel : Limnology, 3rd edition
6. Trivedi and Goyal : Chemical and biological methods for water pollution studies
7. Welch : Limnology Vols. I-II
8. Animal Physiology – Nelson (Cambridge)
9. Endocrinology – Hadely
10. General Endocrinology – Bangara and Turner (W.B. Saunders)
11. Reproductive Physiology – Nalbandov A. V.

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Syllabus of B.Sc. Part III Zoology

Zoology Paper- XIII

**DSE-E30 (DEVELOPMENTAL BIOLOGY OF
VERTEBRATES)**

Theory: 30 hrs. (37.5 lectures of 48 minutes) (Credits 2)

Unit 1 : Gametogenesis	6
1. Types of Eggs	
2. Fertilization – Types and Process of Fertilization	
3. Types of Cleavages	
Unit 2: Early Development of Frog	6
1. Structure of mature egg and its membranes	
2. Cleavage	
3. Blastula and its fate map	
4. Process of gastrulation	
5. Types of Morphogenic Movements	
6. Fate of three germinal layers	
7. Neurulation	
8. Metamorphosis in frog and its hormonal regulation	
Unit 3: Chick Embryology	15
1. Structure of sperm	
2. Structure of egg and vitellogenesis	
3. Fertilization and cleavage	
4. Blastula and its fate map	
5. Process of gastrulation	
6. Organogenesis	
a. Development of neural tube and brain up to 72 hours of incubation	
b. Development of gut up to 72 hours of incubation	
c. Development of blood and heart up to 72 hours of incubation	
d. Foetal membranes and significance	
Unit 4: Late Embryonic Development	3
1. Implantation of embryo in human being	
2. Placenta – Formation, types and significance	

SUGGESTED READINGS:

1. An Introduction to Embryology 1981, Balinsky B.L., Saunders College, Philadelphia.
2. Developmental Biology; Patterns/Principles/Problems, 1982, Saunders J. W. Collier MacMillan, Publishers, London.
3. Developmental Biology, 1997, 3rd Edition, Gilbert S.F. Saunder Associates Inc. U.S.A.
4. Developmental Biology, 1992 3rd edition, Browder L.W. Erickson C.A. & Williams, R J. Saunders College, Publications, London.
5. A Text Book of Embryology, Dr. Puranik P. G., S. Chand & Co. 6. Developmental Biology, 1984, Browder L.W. , Saunders College Publications, U.S.A.
6. Development of Chick embryo, 1972, Lillie. 8. Developmental Biology, 1991, 3rd Edition, Sinaur Associates, Inc. U.S.A. Gilbert, S. F. (2006).
7. Developmental Biology, VIII Edition, Sinauer Associates, Inc., Publishers, Sunderland, Massachusetts, USA. Balinsky, B.I. (2008).
8. An introduction to Embryology, International Thomson Computer Press. Carlson, Bruce M (1996). Patten's Foundations of Embryology, McGraw Hill, Inc.

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Syllabus of B.Sc. Part III Zoology

Zoology Paper- XIV

DSE-E32 (IMMUNOLOGY)

Theory: 30 hrs. (37.5 lectures of 48 minutes) (Credits 2)

Unit 1: Overview of the Immune System	7
1. Introduction to basic concept in immunology	
2. Principles of innate and adaptive immune system	
Unit 2: Cells and Organs of the immune system	8
1. Haematopoiesis	
2. Cells of immune system	
3. Organs (Primary and Secondary lymphoid organs) of the immune system	
4. Immune responses- Humoral and cell mediated	
Unit 3 : Antigens	7
1. Basic properties of antigens	
2. B and T cell epitopes	
Unit 5: Immunoglobulin / Antibodies	8
1. Structure, Classes and Functions of Antibodies	
2. Antigen – Antibody interactions	
3. Hybridoma Technology: Monoclonal Antibodies in diagnosis and therapeutics	

SUGGESTED READINGS:

1. Kindt, T. J., Goldsby, R.A., Osborne, B. A. and Kuby, J (2006). Immunology, VI Edition. W.H. Freeman and Company. David, M., Jonathan, B., David, R. B. and Ivan R. (2006).
2. Immunology, VII Edition, Mosby, Elsevier Publication. Abbas, K. Abul and Lichtman H. Andrew (2003.) Cellular and Molecular
3. Immunology. V Edition. Saunders Publication.

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Syllabus of B.Sc. Part III Zoology

Zoology Paper- XV

DSE-E31 (Applied Zoology - II)

Theory: 30 hrs. (37.5 lectures of 48 minutes) (Credits 2)

Unit 1: Apiculture	8
1. Types and casts of honey bee	
2. Honey Comb	
3. Bee Keeping	
a. Artificial models of bee hive – Newton and Langstroth models	
b. Bee keeping Equipments	
c. Extraction of Honey	
4. Medicinal Value of Honey	
Unit 2 : Animal Husbandary	5
1. Indigenous and exotic breeds of cattle	
2. Preservation and artificial insemination in cattle	
3. Induction of early puberty	
4. Synchronization of estrus in cattle	
5. Commercial importance of dairy farming	
Unit 3: Pearl culture	4
1. Species of oyster	
2. Process of Pearl formation: natural and artificial	
3. Maintenance of oysters	
4. Harvesting	
5. Importance of Pearl	
Unit 4: Freshwater prawn culture	3
1. Species of Prawn	
2. Site selection	
3. Farm Construction	
4. Production system: fertilization, Larval Development, Food and feeding	
5. Harvesting	
Unit 5: Fish Technology	5
Genetic improvements in aquaculture industry:	
1. Induced breeding	
2. Transportation of fish seed	
3. Feeding and development	
4. Harvesting and Marketing	

Unit 4 : Goat Farming-

5

1. Breeds
2. Feeding
3. Housing
4. Economic Importance

SUGGESTED READINGS:

1. Mollusca - Hyman.
2. Prawn and Prawn Fishery of India - Kurian.
3. Fish Culture - K. H. Alikuhni.
4. Fish Culture - Lagter.
5. Fishes of India. - Khanna.
6. Hand Book of Animal Husbandary and Dairy - Mudlyer.
7. Bee keeping in India - Sardar Sing.
8. Bee Keeping in India- M. G. Smith.
9. Poultry keeping in India - Naidu P.N.M.
10. Poultry Husbandary - M. A. Jule. 18. Poultry Husbandary - Moorthy.
11. Outlines of Dairy Technology - Sukumar De.
12. Milk and milk products - Clarence Henry Eckles, Willes Barnes Combs, Harold Macy

SHIVAJI UNIVERSITY, KOLHAPUR

Syllabus of B.Sc. Part III Zoology

Zoology Paper- XVI

DSE-F32 (Insect Vectors and Histology)

Theory: 30 hrs. (37.5 lectures of 48 minutes) (Credits 2)

Unit I: Dipteran as Disease Vectors

18

1. Dipteran as important insect vectors
 - a. Mosquitoes
 - b. Sand fly
 - c. Houseflies
2. Study of mosquito born diseases –
 - a. Malaria
 - b. Dengue
 - c. Chikungunya
 - d. Viral encephalitis
 - e. Filariasis
3. Control measures of Mosquitoes
4. Study of house fly as important mechanical vector
 - a. Myiasis, Control of house fly

Unit II: Siphonoptera as Disease Vectors

6

1. Fleas a important insect vectors
2. Host-specificity
3. Study of Flea-borne diseases
 - a. Plague
 - b. Typhus fever
4. Control of fleas

Unit III: Histology of mammalian organs

6

Tooth, tongue, Salivary glands, Stomach, Duodenum, Ileum, Liver, Pancreas, Kidney

SUGGESTED READINGS:

1. Imms, A.D. (1977). A General Text Book of Entomology. Chapman & Hall, U K
Chapman, R.F. (1998).
2. The Insects: Structure and Function. IV Edition, Cambridge University Press, U K
Pedigo L.P. (2002).
3. Entomology and Pest Management. Prentice Hall Publication Mathews, G. (2011).
4. Integrated Vector Management: Controlling Vectors of Malaria
5. Insect Vector Borne Diseases. Wiley-Blackwell
6. Textbook of Histology: Bloom W and Fawcett D.W.
7. Histology: Lippincott. Ham, A.W.
8. Histology: Greep, R.O and well, L.
9. An Atlas of Histology. Heinemann Educational Book Ltd. London and ELBS: Freeman.
W.H. and Bracegirdle, B.
10. Microscopic Anatomy of vertebrates, Lea and Febigen. Philadelphia: Kendall, J.I.
11. Histology of Mammals: Athavale, M.V and Latey, A. N.

SHIVAJI UNIVERSITY, KOLHAPUR

Syllabus of B.Sc. Part III Zoology

Zoology Practical – I (Credits-02)

Comparative anatomy and developmental biology of vertebrates

I. Comparative Study of following

1. V.S. of skin of vertebrates
2. Digestive system of vertebrates
3. Respiratory system of vertebrates
4. Heart of vertebrates
5. Brain of vertebrates
6. Osteology
 - a) The skeleton of fowl (Disarticulated)
 - b) The skeleton of rabbit (Disarticulated)
 - c) Mammalian skull's – (any one herbivorous and one carnivorous animal)

II. Study of developmental stages of frog.

1. Cleavage
2. Blastulation
3. Gastrulation
4. Neurulation
5. Stages of metamorphosis in frog
 - a. External gill stage
 - b. Internal gill stage
 - c. Forelimb stage
 - d. Hind limb stage
 - e. Tail bud stage
 - f. Juvenile stage

III. Study of Chick Embryo

12. Whole mount of chick embryo – 18, 24, 33, 48 and 72 hours.
13. T.S. of chick embryo – 18, 24, 33, 48 and 72 hours.

VI. Preparation of whole mount chick embryo.

IV. Study of Histological structures of placenta (permanent slide or microphotographs)

- 1) Epitheliochorial
- 2) Endotheliochorial
- 3) Hemochorial
- 4) Syndesmochorial
- 5) Hemoendothelial

V. Examination of Gametes – Frog or Rat sperm & ovum through slides or microphotographs.

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Syllabus of B.Sc. Part III Zoology

Zoology Practical – II (Credits-02)

Applied Zoology – II and Immunology

Unit 1: Applied Zoology

1. Apiculture

- a. Casts of Honey Bees
- b. Bee Hive (Photographs or models)
- c. Pollen Basket
- d. Sting Apparatus
- e. Honey
- f. Newton's model of Bee Hive (Photographs or models)
- g. Bee keeping Equipments (Photographs or models)

2. Preservation & Artificial insemination in cattles

8. Pearl culture

- a. Species of oyster
- b. Process of Pearl formation: natural and artificial
- c. Importance of Pearl

9. Freshwater prawn culture

- a. Species of Prawn
- b. Site selection
- c. Farm Construction
- d. Production system
- e. Harvesting

10. Goat farming

- a. Breeds (any four = 2 Indigenous and 2 Exotic)
- b. Housing
- c. Feeding

6. Visit to goat farm or animal breeding centre – submission of visit report

B] Immunology

1. Study of lymphoid organ's (Photograph, Models, Videos)
2. Histological study of (slides or photographs)
 - a. Spleen
 - b. Thymus
 - c. Lymph nodes
3. Preparation of stained blood smears to study various types of blood cells
4. Determination of ABO blood groups
5. Demonstration of
 - a. ELISA
 - b. Immuno-electrophoresis

C] Cell counting and viability test from splenocytes of farm breed animals / cell lines

SHIVAJI UNIVERSITY, KOLHAPUR

Syllabus of B.Sc. Part III Zoology

Zoology Practical – III (Credits-02)

Molecular biology, Animal biotechnology, Biostatistics & Biotechniques

I] Microtechnique

1. Preparation of permanent histological slides by HE technique
2. Histochemical technique
 - a. AB PH 1 technique
 - b. AB PH 2.5 technique
 - c. PAS technique

II] Biotechniques

1. Chromatography – Separation of amino acid by paper chromatography
2. DNA isolation
3. Demonstration of DNA by feulgan technique
4. To study the following technique (photographs)
 - a) Southern blotting
 - b) Northern blotting
 - c) Western blotting
 - d) DNA sequencing (Sangers method)
 - e) PCR
 - f) DNA fingerprinting

III) Biostatistics

Any 10 example based on theory

- IV] Project** (any suitable work possible in local area or from the syllabus) Report of the same to be submitted at the time of practical examination

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Syllabus of B.Sc. Part III Zoology

Zoology Practical – IV (Credits-02)

Aquatic biology, insect vector & diseases

A] Aquatic biology

1. Determination of area of a lake using graphimetric & gravimetric method
2. Identify the zooplanktons present in lake ecosystem
3. Determination of turbidity or transparency from nearby lake or water body
4. Determination of dissolved oxygen
5. Determination of free CO₂
6. Determination of alkalinity (Carbonates & bicarbonates) from water collected from nearby lake or water body
7. Estimation of total hardness of water
8. Instruments used in limnology & their significance
 - a) Secchi disc
 - b) Van Dorn bottle
 - c) Conductivity meter
 - d) Turbidity meter
 - e) PONAR grab sampler
9. Visit to seashore/water reservoir/animal sanctuary to study animal diversity. Report of tour should be submitted at the time of practical examination
10. Endocrine glands (Anatomy and Histology) – Thyroid, Parathyroid, Adrenal and Pancreas.

B] Insect Vectors & diseases

10. Study of different kinds of mouthparts of insects
 - a) Chewing & biting
 - b) Chewing & lapping
 - c) Piercing & sucking
 - d) Sponging
 - e) Siphoning
11. Study of following insect vectors through permanent slides or photograph
 - a) Insect vector – Mosquito, sandfly & housefly
 - b) Study of mosquito born diseases – Malaria, dengue, chikungunya, encephalitis, filariasis
 - c) Study of sandfly born diseases – Visceral leishmanians, Cutaneous leishmanians, Phlebotomus fever
 - d) Study of housefly born diseases – Myiasis
 - e) Study of flea born diseases – Plague, typhus
12. Histology of Following mammalian organs-
 - a) Tooth (V.S.) b) Tongue c) Salivary gland d) Stomach e) Duodenum f) Ileum g) Liver
 - h) Pancreas i) Kidneys

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Accredited By NAAC With 'A' Grade

CHOICE BASED CREDIT SYSTEM

Syllabus For

Bachelor of Science (Part III) Statistics

Syllabus to be implemented from June 2020 onwards

Shivaji University, Kolhapur
B. Sc. III Statistics
Structure of the course
To be implemented from June 2020
Theory

Semester V

Paper. No.	Title of the paper	Total Marks
IX	Probability Distributions	50
X	Statistical Inference - I	50
XI	Design of Experiments	50
XII	R-Programming and Quality Management	50

Semester VI

Paper. No.	Title of the paper	Total Marks
XIII	Probability Theory and Applications	50
XIV	Statistical Inference - II	50
XV	Sampling Theory	50
XVI	Operations Research	50

Practical

Paper No.	Title of the Practical	Marks for Practical	Journal	Oral	Total Marks
IV	Probability Distributions	32	4	4	40
V	Statistical Inference	32	4	4	40
VI	Designs of Experiments and Sampling Methods	32	4	4	40
VII	R-Programming, Quality Management and Operations Research	32	4	4	40
	A Project Report & Viva -voce	40	-	-	40

1. Nature of Project

(i) Identification of problem where statistical techniques can be used.

(ii) Planning and execution of data collection.

(iii) The Marking system for the project work is as follows:

- Data Collection : 8 Marks
- Use of Statistical Tools : 8 Marks
- Analysis of Data : 8 Marks
- Conclusion : 8 Marks
- Viva on Project : 8 marks

Total Marks of Project : 40 marks

(iv) Project will be conducted in a group of 5 to 6 students.

2. Nature of Question papers (Theory)

COMMON NATURE OF THEORY QUESTION PAPER WILL BE MENTIONED SPERATELY:

3. Nature of practical papers:

(i) Each practical question paper must contain **Four** questions.

(ii) Each question should contain **Two** bits from different units.

(iii) Student should attempt **Any Two** questions.

(iv) Each question should carry **16**marks and to be distributed according to following points:

- (a) Aim of the Experiment : 2 Marks
- (b) Statistical formulae : 4 Marks
- (c) Observation Tables : 4 Marks
- (d) Calculations : 4 Marks
- (e) Conclusion/ result of the experiment :2 Marks.

(v) In each practical paper, four marks are reserved for journal and four marks are reserved for oral.

4. Instructions:

(i) While attempting questions based on R-software students have to write the commands of R-software on their Answer-book. Final result should be shown to the examiner online or the printout may be attached.

(ii) Duration of each practical paper should be of four hours.

(iii) Student can use MS-Excel or electronic calculators for other practical.

5. Requirements:

- (i) There should be two subject experts at the time of practical examination.
- (ii) Laboratory should be well equipped with 20 scientific calculators, 20 computers, 2 printers with sufficient backup facility (UPS/Inverter /Generator).

EQUIVALENCE FOR THEORY PAPERS

(From June 2020)

Old Syllabus		Revised Syllabus	
Paper No.	Title of the Paper	Paper No.	Title of the Paper
Sem.V / P. IX	Probability Distributions	Sem.V / P. IX DSE-E13	Probability Distributions
Sem. V/ P.X	Statistical Inference - I	Sem. V/ P.X DSE-E14	Statistical Inference - I
Sem. V / P XI	Design of Experiments	Sem. V / P XI DSE-E15	Design of Experiments
Sem. V / P XII	Operations Research	Sem. V / P XII DSE-E16	R-Programming and Quality Management
Sem. VI / P XIII	Probability Theory	Sem. VI / P XIII DSE-F13	Probability Theory and Applications
Sem. VI / P XIV	Statistical Inference - II	Sem. VI / P XIV DSE-F14	Statistical Inference - II
Sem. V / P XV	Sampling Theory	Sem. V / P XV DSE-F15	Sampling Theory
Sem. VI / P XVI	Quality Management and Data Mining	Sem. VI / P XVI DSE-F16	Operations Research

EQUIVALENCE FOR PRACTICAL PAPERS

(From June 2020)

Old Syllabus		Revised Syllabus	
Paper No.	Title of the Practical Paper	Paper No.	Title of the Practical Paper
IV	Probability Distributions and R software	IV	Probability Distributions
V	Statistical Inference	V	Statistical Inference
VI	Design of Experiments and Sampling Methods	VI	Design of Experiments and Sampling Methods
VII	Operations Research and Quality Management	VII	R-Programming, Quality Management and Operations Research

B. Sc. Part-III Semester V
SUBJECT – STATISTICS - IX
DSE-E13: Probability Distributions
Theory: 36 hours. Marks-50 (Credit 02)

Course Outcomes: The students will acquire

- a) knowledge of important univariate distributions such as Laplace, Cauchy, Lognormal, Weibull, Logistic, Pareto, Power Series Distribution.
- b) knowledge of Multinomial and Bivariate Normal Distribution.
- c) knowledge of Truncated Distributions.
- d) information of various measures of these probability distributions.
- e) acumen to apply standard continuous probability distributions to different situations.

Unit-1: Univariate and Multivariate Probability Distributions (18 hours)

1.1: Laplace (Double Exponential) Distribution: Probability density function (p.d.f.) with parameters (μ, λ) , Nature of the probability curve, Distribution function, quartiles, moment generating function, mean, variance, moments, $\beta_1, \beta_2, \gamma_1$ and γ_2 coefficients. Laplace distribution is a distribution of the difference of two i. i. d. exponential variates with parameter θ , examples and problems.

1.2 : Lognormal Distribution: Probability density function (p.d.f.) with parameters (μ, σ^2) , nature of the probability curve, mean, variance, median, mode, moments, $\beta_1, \beta_2, \gamma_1$ and γ_2 coefficients, Relation with $N(\mu, \sigma^2)$, examples and problems.

1.3: Cauchy Distribution: Probability density function (p.d.f.) with parameters (μ, λ) , nature of the probability curve, distribution function, quartiles, non-existence of moments, additive property for two independent Cauchy variates (statement only), statement of distribution of the sample mean, relationship with uniform and Students'-t distribution, distribution of X/Y where X and Y are i. i. d. $N(0, 1)$, examples and problems.

1.4: Weibull Distribution: Probability density function (p.d.f.) with parameters (α, β) , distribution function, quartiles, mean and variance, coefficient of variation, relation with gamma and exponential distribution, examples and problems.

1.5: Logistic distribution: Probability density function (p.d.f.) with parameters (μ, σ) , distribution function, mean, mode, variance, skewness using mode, applications.

1.6: Pareto distribution: Probability density function (p.d.f.) with parameters (α, β) , mean, variance, mode, skewness using mode, applications.

1.7: Power series distribution: Probability mass function (p.m.f.) mean, mode, variance, Binomial, Poisson, Geometric and Negative Binomial distribution as particular case of power series distribution.

1.8: Multinomial distribution: Probability mass function (p.m.f.), moment generating function, marginal distribution, mean, variance, covariance, variance and covariance matrix, correlation coefficient, additive property, Trinomial distribution as particular case of multinomial distribution.

Unit-2: Truncated Distributions and Bivariate Normal Distribution: (18 hours)

2.1: Truncated distribution as conditional distribution, truncation to the right, left and on both sides. Binomial distribution $B(n, p)$ left truncated at $X = 0$ (value zero not observable): Probability mass function (p.m.f.), mean, variance. Poisson distribution $P(\lambda)$, left truncated at $X = 0$ (value zero not observable): p.m.f., mean and variance. Normal distribution $N(\mu, \sigma^2)$ truncated (i) to the left below a , (ii) to the right above b , (iii) to the left below a , and to the right above b , its Probability density function (p.d.f.) and mean. Exponential distribution with parameter θ left truncated below a : Probability density function (p.d.f.), mean and variance. Examples and problems on above distributions.

2.2: Bivariate Normal Distribution: Probability density function (p.d.f.) of $BN(\mu_1, \mu_2, \sigma_1^2, \sigma_2^2, \rho)$, marginal and conditional distributions, identification of parameters, conditional expectation and conditional variance, regression of Y on X and of X on Y , independence and uncorrelatedness imply each other, m. g. f and moments. Distribution of $aX + bY + c$, where a, b and c are real numbers. Cauchy distribution as the distribution of $Z = X/Y$ where $(X, Y) \sim BN(0, 0, \sigma_1^2, \sigma_2^2, \rho)$. Examples and problems.

Books Recommended:

1. Cramer H.: Mathematical Methods of Statistics, Asia Publishing House, Mumbai.
2. Mood, A. M., Graybill K, Bose. D. C.: Introduction to Theory of Statistics. (Third edition) Mc-GrawHill Series.
3. Lindgren B. W.: Statistical Theory (Third Edition), Collier Macmillan International Edition, Macmillan Publishing Co. Inc. New York.
4. Hogg, R. V. and Craig A. T. : Introduction to Mathematical Statistics (Third Edition), Macmillan Publishing Company, Inc. 866, 34d Avenue, New York, 10022.

5. Sanjay Arora and Bansilal : New Mathematical Statistics (First Edition), Satya Prakashan, 16/17698, New Market, New Delhi, 5 (1989).
6. Gupta S. C and Kapoor V. K. : Fundamentals of Mathematical Statistics, Sultan Chand and Sons, 88, Daryaganj, New Delhi 2.
7. Rohatgi V. K.: An Introduction to Probability Theory and Mathematical Statistics, Wiley Eastern Ltd., New Delhi.
8. Feller. W. : An Introduction of Probability Theory and its Applications, Wiley Eastern Ltd.. Mumbai.
9. Jhonson and Kotz: Continuous Univariate Distributions I and II
: Discrete Distributions
: Multivariate Distributions
10. Bhat B. R.: Modern Probability Theory. New Age International.

B. Sc. Part-III Semester V

SUBJECT – STATISTICS - X

DSE-E14: Statistical Inference-I

Theory: 36 hours. Marks-50 (Credit 02)

Course Outcomes: The students will acquire

- a) knowledge about important inferential aspect of point estimation.
- b) concept of random sample from a distribution, sampling distribution of a statistic, standard error of important estimates such as mean and proportions.
- c) knowledge of various important properties of estimator,
- d) knowledge about inference of parameters of standard discrete and continuous distributions.
- e) concept of Fisher information and CR inequality.
- f) knowledge of different methods of estimation.

Unit 1: Point Estimation:

(18 hours)

1.1: Introduction: Notion of a parameter, parameter space, general problem of estimation, estimating an unknown parameter by point and interval estimation.

1.2: Point estimation: Definition of an estimator (Statistic) and its Standard Error, distinction between estimator and estimate.

1.3: Properties of estimator:

1.3.1: Unbiased estimator, biased estimator, positive and negative bias, examples of unbiased and biased estimator, Proof of the results:

a) Two distinct unbiased estimators of $\Psi(\theta)$ give rise to infinitely many unbiased estimators of $\Psi(\theta)$.

b) If T is an unbiased estimator of θ then $\Psi(T)$ is an unbiased estimator of $\Psi(\theta)$ provided $\Psi(\cdot)$ is a linear function.

Sample variance is a biased estimator of the population variance. Illustrations of unbiased estimators for parameter and parametric functions. Examples.

1.3.2: Relative efficiency of T_1 with respect to T_2 , where T_1 and T_2 are unbiased estimators. Use of mean square error (MSE) to modify the above definition for biased estimators. Minimum Variance Unbiased Estimator (MVUE) and Uniformly Minimum Variance Unbiased Estimator (UMVUE), Uniqueness of UMVUE whenever it exists. Examples.

1.3.3: Consistency: Definition, Proof of the results:

a) Sufficient condition for consistency,

b) If T is consistent for θ and $\Psi(\cdot)$ is a continuous function, then $\Psi(T)$ is consistent for $\Psi(\theta)$.

Likelihood function: Definition of likelihood function as a function of the parameter θ based on a random sample from discrete and continuous distributions.

1.3.4: Sufficiency: Concept of sufficiency, Definition of sufficient statistic through conditional distribution of the sample given the statistics. Neyman factorization criterion, Pitman-Koopman form which admits sufficient statistic. Properties of sufficient statistic:

a) If T is sufficient for θ then $\Psi(T)$ is also sufficient for θ provided $\Psi(\cdot)$ is a one-to-one function.

b) If T is sufficient for θ then T is sufficient for $\Psi(\theta)$.

Examples.

Unit 2. Cramer Rao Inequality and Methods of estimation: (18 hours)

2.1: Fisher Information function: Definition of Information function, amount of information contained in a sample, Statement regarding equality of the information in $(x_1, x_2, \dots, x_n)$ and in a sufficient statistic T , concept of minimal sufficient statistic with illustrations to exponential family. Examples.

2.2:Cramer Rao Inequality: Statement and proof of Cramer Rao Inequality. Definition of Minimum Variance Bound Unbiased Estimator (MVBUE) of $\Psi(\theta)$. Proof of the following results:

- a) If MVBUE exists for θ then MVBUE exists for $\Psi(\theta)$, if $\Psi(\cdot)$ is a linear function.
- b) If T is MVBUE for θ then T is sufficient for θ . Examples.

2.3:Methods of Estimation:

2.3.1: Method of Maximum Likelihood: Definition, Derivation of Maximum Likelihood Estimators (MLE) for parameters of standard distributions. Properties of MLE:

- a) Invariance property (With Proof),
- b) MLE is a function of sufficient statistics,
- c) Non-uniqueness property of MLE (With counter examples).
- d) MLE's are asymptotically normally distributed. (Without Proof)

2.3.2:Method of Moments: Derivation of moment estimators for standard distributions. Illustrations of situations where MLE and moment estimators are distinct and their comparison using mean square error (for uniform distribution).

Books Recommended:

1. Kale B. K. : A first course in Parametric Inference
2. Rohatgi V. K.: Statistical Inference
3. Rohatgi V. K. : An introduction to Probability Theory and Mathematical Statistics
4. Saxena H. C. and Surendran: Statistical Inference
5. Lehmann E. L.: Theory of Point Estimation
6. Dudewicz C. J. and Mishra S. N. : Modern Mathematical Statistics
7. Cassela G. and Berger R. L. Statistical Inference
8. Dixit P. G. Patil S.M. Prayag V. R. and Sunde N. J.: Inference: Theory of Estimation.
9. A. Santhakumaran: Fundamentals of Testing of Statistical Hypothesis
10. Manojkumar Srivastava, Namita Srivastava: Statistical Inference

B. Sc. Part-III Semester V

SUBJECT – STATISTICS - XI

DSE-E15: Design of Experiments

Theory: 36 hours. Marks-50 (Credit 02)

Course Outcomes:The students will acquire

- a) knowledge of basic terms used in design of experiments.
- b) concept of one-way and two-way analysis of variance.
- c) knowledge of various designs of experiments such as CRD, RBD, LSD and factorial experiments.
- d) knowledge of using an appropriate experimental design to analyze the experimental data.

Unit 1: Simple Designs of Experiments:

(18 hours)

1.1: Basic Concepts:

- i) Basic terms in design of experiments: Experimental unit, treatment, layout of an experiment.
- ii) Basic principles of design of experiments: Replication, randomization and local control.
- iii) Choice of size and shape of a plot for uniformity trials, the empirical formula for the variance per unit area of plots.

1.2: Completely Randomized Design (CRD):

- i) Application of the principles of design of experiments in CRD, layout, mathematical model assumptions and interpretations.
- ii) Estimation of parameters, Standard Error(SE), estimate of σ as square root of Mean Error Sum of Square. Expected values of mean sum of squares, components of variance.
- iii) Breakup of total sum of squares into components.
- iv) Visual inspection of treatment effects using treatment wise BOX-PLOT's.
- v) Technique of one-way analysis of variance (ANOVA) and its applications to CRD.
- vi) Statement of Chochran's theorem (without proof) for justification of F-test. Tests for equality for treatment effects and its interpretation. Test for equality of two specified treatment effects using Critical Difference(CD)
- vii) Model adequacy check using residual analysis.

1.3: Randomized Block Design (RBD):

- i) Application of the principles of design of experiments in RBD layout, model, assumptions and interpretations.
- ii) Estimation of parameters, expected values of mean sum of squares, components of variance.
- iii) Breakup of total sum of squares into components.
- iv) Visual inspection of treatment effects, block effects using BOX-PLOT's.

- v)Technique of Two way analysis of variance (ANOVA) and its applications to RBD. Residual analysis for model adequacy checking.
- vi)Related testing procedures and their interpretations, test for equality of two specified treatment effects, comparison of treatment effects using critical difference (C.D.).
- vii)Idea of missing plot technique.
- viii)Situations where missing plot technique is applicable.
- ix)Analysis of RBD with single missing observation.

1.4: Latin Square Design (LSD):

- i)Application of the principles of design of experiments in LSD layout model, assumptions and interpretations.
- ii)Breakup of total sum of squares into components.
- iii)Estimation of parameters, Standard Error(SE), expected values of mean sum of squares, components of variance. Preparation of analysis of variance (ANOVA) table.
- iv)Visual inspection of treatment effects, row and column effects using BOX-PLOT's.
- v)Related tests and their interpretations, test for equality of two specified treatment effects, comparison of treatment effects using critical difference (C.D.). Residual analysis for model adequacy checking.
- vi)Analysis of LSD with single missing observation.
- vii)Identification of real life situations where CRD, RBD and LSD are used.

Unit 2: Analysis of Non-Normal Data, Efficiency and Factorial Experiments:(18 hours)

2.1: Analysis of non- normal data in CRD, RBD, LSD using

- i)Square root transformation for counts.
- ii) $\sin^{-1}(\cdot)$ transformation for proportions.
- iii)Kruskal Wallis test.

2.2: Efficiency of design:

- i)Concept and definition of efficiency of a design.
- ii)Efficiency of RBD over CRD.
- iii)Efficiency of LSD over CRD and LSD over RBD.

2.3: Factorial Experiments:

- i)General description of factorial experiments, 2^2 & 2^3 factorial experiments arranged in RBD.
- ii)Definitions of main effects and interaction effects in 2^2 and 2^3 factorial experiments.
- iii)Model assumptions and its interpretation.

- iv) Preparations of ANOVA table by Yate's procedure, test for main effects and interaction effects.
- v) General idea and purpose of confounding in factorial experiments.
- vi) Total confounding (Confounding only one interaction): ANOVA table, testing main effects and interaction effects.
- vii) Partial Confounding (Confounding only one interaction per replicate): ANOVA table. Testing main effects and interaction effects.
- viii) Construction of layout in total confounding and partial confounding in 2^3 factorial experiment.

Books Recommended:

1. Montgomery, D.C. (2001): Design and Analysis of Experiments, John Wiley and sons Inc., New Delhi.
2. Dass, M.N. and Giri, N.C. (1986) Design and Analysis of Experiments, II Edition Wiley Eastern Ltd., New Delhi
3. Snedecor, G.W. and Cochran, W.G. (1994). Statistical Methods, 8th edition, Affiliated East – West Press, New Delhi
4. Goon, A.M., Gupta, M.K. and Dasgupta, B. (1998). Fundamentals of Statistics, Vol.II, The world Press Pvt. Ltd. Kolkatta.
5. Gupta S.C. and Kapoor V.K. (2006). Fundamentals of Applied Statistics, S.Chand Sons, New Delhi
6. Wu, C.F.J. and Hamda, M. (2009). Experiments, Planning, Analysis and Parameter Design Optimization, John Wiley & Sons, Inc., Hoboken, New Jersey.

B. Sc. Part-III Semester V

SUBJECT – STATISTICS - XII

DSE-E16: R-Programming and Quality Management

Theory: 36 hours. Marks-50 (Credit 02)

Course outcomes: The students will acquire

- a) importance of R- programming
- b) knowledge of identifiers and operators used in R.
- c) knowledge of conditional statements and Loops used in R.
- d) knowledge of quality tools used in Quality management.

- e) knowledge of process and product control used in Quality management.

Unit-1: R Programming:

(18 hours)

1.1: Introduction: History, Features of R, Character sets,

Identifiers: Variable, Constants, Symbolic constant, key words, Data Types and Data Structure,

Operators: Arithmetic, relational, logical, assignment, increasing, decreasing, special operators, Character vectors, Input and output functions, Data Import and Export function, Basic built-in function

1.2: Programming: Algorithm, flow chart, Structure of programme,

Conditional Statements: If, if else, **Loops:** for, while, Unconditional Statements, Writing of your own functions, Diagrams and Graphs, Simple programmes on

- 1) Finding Area of circle.
- 2) To check whether the given integer is positive or negative.
- 3) Reverse a given number.
- 4) To find greatest of three numbers.
- 5) Find Prime numbers in a given range.
- 6) To check if number is odd or even.
- 7) To check leap year.
- 8) To find sum of first n natural numbers.
- 9) To find AM, GM, and HM for ungrouped data.
- 10) To find Mean deviation, Variance, Standard deviation for ungrouped data.
- 11) To generate random numbers from discrete distributions.
- 12) To generate random numbers from continuous distributions.

Unit-2: Quality Management:(18 hours)

2.1:Quality Tools: Meaning and dimensions of quality, quality philosophy, Magnificent tools of quality: Histogram, Check sheet, Pareto diagram, cause and effect diagram, scatter diagram, control chart, flow chart. Deming's PDCA cycle.

2.2:Process Control: CUSUM chart, tabular form, use of these charts for monitoring process mean. Moving average and exponentially weighted moving average charts. Introduction to six-sigma methodology, DMAIC cycle and case studies.

2.3:Product Control: Sampling Inspection plans for attribute: Concept of AQL, LTPD, Consumer's risk, producer's risk, AOQ, AOQL, OC, ASN and ATI. Description of Single and double sampling plans with determination of above constants.

Books Recommended:

1. Crawley, M. J. (2006): Statistics - An introduction using R. John Wiley, London 32
2. Purohit, S.G.; Gore, S.D. and Deshmukh, S.R. (2015): Statistics using R, second edition. Narosa Publishing House, New Delhi.
3. Shahababa, B. (2011): Biostatistics with R, Springer, New York
4. Verzani, J. (2005): Using R for Introductory Statistics, Chapman and Hall /CRC Press, New York
5. Montgomery D. C.: Introduction to quality Control
6. Duncan A. J.:Quality Control and Industrial statistics
7. GrantE. . L: Statistical Quality Control

B. Sc. Part-III Semester VI

SUBJECT – STATISTICS - XIII

DSE-F13: Probability Theory and Applications

Theory: 36 hours. Marks-50 (Credit 02)

Course Outcomes: The students will acquire

- a) knowledge about order statistics and associated distributions
- b) concept of convergence and Chebychev's inequality and its uses
- c) concept of law large numbers and central limit theorem and its uses.
- d) knowledge of terms involved in reliability theory as well as concepts and measures.

Unit-1: Order Statistics and Convergence:

(18 hours)

1.1: Order Statistics: Order statistics for a random sample of size n from a continuous distribution, Joint distribution, definition, derivation of distribution function and density function of the i^{th} order statistic, particular cases for $i=1$ and $i=n$, Derivation of joint p. d. f. of i^{th} and j^{th} order statistics, statement of distribution of the sample range, Distribution of the sample median when n is odd. Examples and problems.

1.2: Convergence and Limit Theorem: Convergence -Definition of convergence of sequence of random variables (a) in probability, (b) in distribution, (c) in quadratic mean. If $X_n \xrightarrow{P} X$ then $g(X_n) \xrightarrow{P} g(X)$ where g is continuous function without proof. Examples and problems.

1.3: Chebychev's Inequality: Chebychev's inequality for discrete and continuous distributions. Examples.

1.4: Weak Law of Large Numbers and Central Limit Theorem: Weak law of large numbers (WLLN)- statement and proof for i. i. d. random variables with finite variance.

1.5 Central Limit Theorem: Statement and proof for i.i.d. random variables with finite variance, proof based on m. g. f., simple examples based on Bernoulli, binomial, Poisson and chi-square distribution.

Unit-2: Reliability Theory:

(18 hours)

2.1: Binary System: Block diagrams, definition of binary coherent structure and illustrations. Coherent system of components at most three, (a) Series, (b) Parallel, (c) 2 out of 3: Minimal cut, minimal path representation of system.

2.2: Reliability of binary System: Reliability of systems $h(p)$, when components are independent and identically distributed with common probability p of operating.

2.3: Ageing Properties: Definitions of hazard rate, hazard function, survival function. Concept of distributions with increasing and decreasing failure rate (IFR, DFR). Relationship between survival function and hazard function, density function and hazard rate. Derivations of results: (1) Hazard rate of a series system of components having independent life times is summation of component hazard rates. (2) Life time of series system of independent components with independent IFR life times is IFR,

2.4: Examples on exponential distribution.

Books Recommended :

1. Barlow R. E. and Proschan Frank: Statistical Theory of Reliability and Life Testing. Holt Rinehart and Winston Inc., New York.
2. Cramer H.: Mathematical Methods of Statistics, Asia Publishing House, Mumbai.
3. Lindgren B. W.: Statistical Theory (Third Edition), Collier Macmillan International Edition, Macmillan Publishing Co. Inc. New York. . . .
4. Hogg, R. V. and Craig A. T. : Introduction to Mathematical Statistics (Third Edition), Macmillan Publishing Company, Inc. 866, 34d Avenue, New York, 10022.
5. Sanjay Arora and Bansilal : New Mathematical Statistics (First Edition), Satya Prakashan, 16/17698, New Market, New Delhi, 5 (1989).
6. Gupta S. C and Kapoor V. K. : Fundamentals of Mathematical Statistics, Sultan Chand and Sons, 88, Daryaganj, New Delhi 2.
7. Rohatgi V. K.: An Introduction to Probability Theory and Mathematical Statistics, Wiley Eastern Ltd., New Delhi.
8. Hoel, Port and Stone: Introduction to Stochastic Processes, Houghton Mifflin.

9. Feller. W. : An Introduction of Probability Theory and its Applications. Wiley Eastern Ltd.. Mumbai.
10. Bhat B. R.: Modern Probability Theory.
- 11 Ross S: Probability Theory.
12. Sinha S. K. : Reliability and Life Testing, Second Edition, Wiley Eastern Publishers, New Delhi.
- 13.Trivedi R. S. : Probability and Statistics with Reliability and Computer Science Application, Prentice – Hall of India Pvt. Ltd., New Delhi.
14. ParimalMukhopadhyaya: An Introduction to the Theory of Probability. World Scientific Publishing.

B. Sc. Part-III Semester VI
SUBJECT – STATISTICS - XIV
DSE-F14: Statistical Inference-II
Theory: 36 hours. Marks-50 (Credit 02)

Course Outcomes:The students will acquire

- a) concept of interval estimation.
- b) knowledge of interval estimation of mean, variance and population proportion.
- c) knowledge of important aspect of test of hypothesis and associated concept.
- d) concept about parametric and non-parametric methods.
- e) Knowledge of some important parametric as well as non-parametric tests.

Unit 1: Interval Estimation and Parametric Tests:

(18 hours)

1.1: Interval Estimation:

1.1.1:Notion of interval estimation, Definition of confidence interval, length of confidence interval, confidence bounds. Definition of pivotal quantity and its use in obtaining confidence intervals and bounds.

1.1.2:Interval estimation for the following cases:

- i) Mean μ of normal distribution (σ known and unknown)
- ii) Variance σ^2 of normal distribution (μ known and unknown)
- iii) Difference between two means ($\mu_1 - \mu_2$)
 - a. For a sample from bi-variate normal population
 - b. For samples from two independent normal populations.

- iv) Ratio of variances for samples from two independent normal populations.
- v) Mean of exponential distribution
- vi) Population proportion and difference of two population proportions
- vii) Population median (using order statistics and limiting distribution of median).

1.2: Parametric tests:

1.2.1: Statistical hypothesis, problems of testing of hypothesis, definitions and illustrations of (i) simple hypothesis (ii) composite hypothesis, critical region, Type I and Type II error, probabilities of type I and Type II errors. Power of a test, p-value, size of a test, level of significance, problem of controlling probabilities of type I and Type II errors.

1.2.2: Definition of Most Powerful (MP) test. Statement and proof (sufficient part) of Neyman- Pearson (NP) lemma for simple null hypothesis against simple alternative hypothesis for construction of MP test. Examples of construction of MP test of level α .

1.2.3: Power function of a test, power curve, definition of Uniformly Most Powerful (UMP) level α test, Use of NP lemma for constructing UMP level α test for one-sided alternative. Computation of powers for standard probability distributions.

1.2.4: Likelihood Ratio (LR) Test: Procedure of LR test, statement of its properties, LR test involving mean and variance of normal population for two sided alternative hypothesis only. (i.e. $H_0: \mu = \mu_0$ v/s $H_1: \mu \neq \mu_0$ and $H_0: \sigma^2 = \sigma_0^2$ v/s $H_1: \sigma^2 \neq \sigma_0^2$)

Unit 2. SPRT and Non-parametric Tests: (18 hours)

2.1: Sequential Test: General theory of sequential analysis and its comparison with fixed sample procedure. Wald's SPRT of strength (α, β) for simple null hypothesis against simple alternative hypothesis. Illustrations for binomial, Poisson, exponential and normal distributions, Graphical and tabular procedure for carrying out the test.

2.2: Non-parametric tests: Notion of non-parametric statistical inference (test) and its comparison with parametric statistical inference. Concept of distribution free statistic. Test procedure of:

- i) Run test for randomness and run test for equality of distributions.
- ii) Sign test for one sample and two sample paired observations
- iii) Wilcoxon's signed rank test for one sample and two samples paired observations
- iv) Mann-Whitney U-test (Two independent samples)
- v) Median test
- vi) Kolmogorov Smirnov test for one and two independent samples.

Books Recommended:

1. Kale B. K. : A first course in Parametric Inference
2. Rohatgi V. K.: Statistical Inference
3. Rohatgi V. K. : An introduction to Probability Theory and Mathematical Statistics
4. Saxena H. C. and Surendran: Statistical Inference
5. Lehmann E. L.: Theory of Point Estimation
6. Dudewicz C. J. and Mishra S. N. : Modern Mathematical Statistics
7. Cassela G. and Berger R. L. Statistical Inference
8. Gibbons J. D.: Non-parametric Statistical Inference
9. Doniel : Applied Non-parametric Statistics
10. Siegel S.: Non-parametric Methods for the behavioral sciences.
11. Kunte S, Purohit S. G and Wanjale S.K: Lecture notes on Non-parametric Tests.
12. Dixit P. G. Patil S.M. Prayag V. R. and Sunbandh N. J.: Inference: Theory of Estimation.
13. Bhuyan K. C.: Probability Distribution Theory and Statistical Inference
14. A. Santhakumaran: Fundamentals of Testing of Statistical Hypothesis
15. Manojkumar Srivastava, Namita Srivastava: Statistical Inference

B. Sc. Part-III Semester V

SUBJECT – STATISTICS - IX

DSE-F15: Sampling Theory

Theory: 36 hours. Marks-50 (Credit 02)

Course Outcomes: The students shall get

- a) basic knowledge of complete enumeration and sample, sampling frame sampling distribution, sampling and non-sampling errors, principle steps in sample surveys, sample size determination, limitations of sampling etc.
- b) concept of various sampling methods such as simple random sampling, stratified random sampling, systematic sampling and cluster sampling.
- c) an idea of conducting sample surveys and selecting appropriate sampling techniques.
- d) knowledge of comparing various sampling techniques.
- e) knowledge of ratio and regression estimators.

Unit- 1: Simple and Stratified Random Sampling:

(18 hours)

1.1: Simple Random Sampling:

- i) Revision of Simple random sampling, Procedure of drawing SRSWOR and SRSWR using (a) random number table (b) software.
- ii) Sample mean ($\bar{y}$) as an estimator of population mean, derivation of its expectation, standard error and estimator of standard error under SRSWOR and SRSWR
- iii) $N\bar{y}$ as an estimator of population total, derivation of its expectation, standard error and estimator of standard error under SRSWOR and SRSWR
- iv) Sampling of dichotomous attributes. Estimation of population proportion, Sample proportion (p) as an estimator of population proportion (P), derivation of its expectation, standard error using (SRSWOR). Np as an estimator of total number of units in the population possessing the attribute of interest, derivation of its expectation, standard error and estimator of standard error.

1.2: Determination of the sample size:

Determination of the sample size (n) under SRSWOR for variables and attributes given

- i) Margin of error and confidence coefficient.
- ii) Coefficient of variation of the estimator and confidence coefficient.

1.3: Stratified Sampling:

- i) Real life situations where stratification is appropriate.
- ii) Procedure of drawing stratified sample using (a) random number table (b) software given the sampling frame.
- iii) Description of stratified sampling method where sample is drawn from individual stratum using SRSWOR method.
 - (a) $\bar{y}_{st}$ as an estimator of population mean $\bar{Y}$, derivation of its expectation, standard error and estimator of standard error.
 - (b) $N\bar{y}$ as an estimator of population total, derivation of its expectation, standard error and estimator of standard error.
- iv) Problem of allocation: Proportional allocation, Neyman's allocation and optimum allocation, derivation of the expressions for the standard errors of the above estimators when these allocations are used.
- v) Comparison amongst SRSWOR, stratification with proportional allocation and stratification with optimum allocation. Gain in precision due to stratification.

- vi) Cost and variance analysis in stratified random sampling, minimization of variance for fixed cost, minimization of cost for fixed variance, optimum allocation as a particular case of optimization in cost and variance analysis.

Unit2: Other Sampling Methods:

(18 hours)

2.1: Systematic Sampling:

- i) Real life situations where systematic sampling is appropriate. Techniques of drawing a sample using systematic sampling (when the population size is multiple of sample size).
- ii) Estimation of the population mean and population total, standard error of these estimators.
- iii) Comparison of systematic sampling with SRSWOR.
- iv) Comparison of systematic sampling with SRSWOR and stratified sampling in the presence of linear trend.
- v) Idea of Circular Systematic Sampling.

2.2: Cluster Sampling:

- i) Real life situations where cluster sampling is appropriate. Techniques of drawing a sample using cluster sampling.
- ii) Estimation of the population mean and population total (with equal size clusters), standard error of these estimators.
- iii) Systematic sampling as a particular case of cluster sampling.

2.3: Two-stage and Multi-stage sampling: Idea of two stage and multistage sampling

2.4: Ratio Method:

- i) Concept and rationale of auxiliary variable and its use in estimation
- ii) Situations where Ratio method is appropriate.
- iii) Ratio estimators of the population mean and population total and their standard errors (without derivations), estimators of these standard errors.
- iv) Relative efficiency of ratio estimators with that of SRSWOR.

2.5: Regression Method:

- i) Situations where Regression method is appropriate.
- ii) Regression estimators of the population mean and population total and their standard errors (without derivations), estimators of these standard errors.
- iii) Comments regarding bias in estimation.
- iv) Relative efficiency of regression estimators with that of a) SRSWOR b) Ratio estimator.

2.6: Case Study: Study of surveys illustrating the above ideas. Rounds conducted by NSSO.

Books Recommended:

1. Cochran, W.G: Sampling Techniques, Wiley Eastern Ltd., New Delhi.
2. Sukhatme, P.V. and Sukhatme, B.V. : Sampling Theory of Surveys with Applications, Indian Society of Agricultural Statistics, New Delhi.
3. Des Raj : Sampling Theory.
4. Daroga Singh and Choudhary F.S.; Theory and Analysis of Sample Survey Designs, Wiley Eastern Ltd., New Delhi.
5. Murthy, M.N: Sampling Methods, Indian Statistical Institute, Kolkata.
6. Parimal Mukhopadhyay (2008): Sampling theory and methods of survey sampling, Prentice Hall of India.

B. Sc. Part-III Semester V

SUBJECT – STATISTICS - XVI

DSE-F16: Operations Research

Theory: 36 hours. Marks-50 (Credit 02)

Course Outcomes: The students will acquire

- a) Concept of Linear programming problem.
- b) Knowledge of solving LPP by graphical and Simplex method.
- c) Knowledge of Transportation, Assignment and Sequencing problems.
- d) Concept of queuing theory.
- e) Knowledge of simulation technique and Monte Carlo technique of simulation.

Unit-1:

(18 hours)

1.1: Linear programming: Basic concepts, Statement of the Linear Programming Problem (LPP), formulation of problem as L.P. problem. Definition of (i) a slack variable, (ii) a surplus variable, L.P. problem in (i) canonical form, (ii) standard form. Definition of (i) a solution, (ii) a feasible solution, (iii) basic variable and non-basic variable, (iv) a basic feasible solution, (v) a degenerate and a non-degenerate solution, (vi) an optimal solution, Solution of L.P.P.: i. Graphical Method: Solution space, obtaining an optimal solution, unique and non-unique optimal solutions, ii. Simplex Method: (a) Initial basic feasible solution (IBFS) is readily available: obtaining an

IBFS, criteria for deciding whether obtained solution is optimal, criteria for unbounded solution, more than one optimal solutions (b) IBFS not readily available: introduction of artificial variable, Big-M method, modified objective function, modifications and applications of simplex method to L.P.P., criterion for no solution, Duality Theory: Writing dual of a primal problem, solution of L.P.P. with artificial variable, Examples and problems.

1.2: Transportation, Assignment and Sequencing Problems:

Transportation problem(T.P.): statement, balanced and unbalanced T. P., Methods of obtaining initial basic feasible solution of T.P. (a) North West corner rule (b) Method of matrix minima (least cost method), (c) Vogel's approximation(VAM)., MODI method of obtaining Optimal solution of T. P, uniqueness and non- uniqueness of optimal solutions, degenerate solution, examples and problems.

Assignment Problem: Statement, balanced and unbalanced assignment problem, relation with T.P, optimal solution of an assignment problem using Hungarian method, examples and problems.

Sequencing Problem: Introduction, Statement of problem, Procedure of processing n jobs on two machines, Procedure of processing n jobs on three machines and m machines. Computations of elapsed time and idle times, examples and problems.

Unit-2:

(18 hours)

2.1: Queuing Theory: Introduction, essential features of queuing system, input source, queue configuration, queue discipline, service mechanism, Operating characteristics of queuing system, transient- state and steady state, queue length, general relationship among system characteristics.

Probability distribution in queuing system: Distribution of arrival, distribution of inter arrival time, distribution of departure and distribution of service time (Derivations are not expected), Types of queuing models, Solution of queuing Model: M/M/1, using FCFS queue discipline. Examples and problems.

2.2: Simulation Techniques: Meaning of simulation, Monte Carlo simulation, advantages and disadvantages of simulation, definition and properties of random numbers, generation of pseudo random numbers, Techniques of generating random numbers from uniform distribution, Tests for randomness and uniformity distribution, random variate generation using inverse cdf method, random variate generation from Bernoulli, Binomial, Poisson, Geometric, Exponential and normal distributions.

Book Recommended:

1. Gass E.: Linear Programming Method and Applications, Narosa Publishing House, New Delhi.
2. Shrinath L. S.: Linear Programming.
3. Taha H. A.: Operation research – An Introduction, Fifth Edition, Prentice Hall of India, New Delhi.
4. Saccini, Yaspan, Friedman: Operations Research Method and Problems, Wiley International Edition.
5. Shrinath, L. S.: Linear Programming, Affiliated East-West Press Pvt. Ltd., New Delhi.
6. Phillips, D. T., Ravindra, A., Solberg, J.: Operations Research Principles and Practice, John Wiley and Sons Inc.
7. Sharma, J. K.: Mathematical Models in Operations Research, Tau McGraw Hill Publishing Company Ltd., New Delhi.
8. Kapoor, V. K.; Operations Research, Sultan Chand and Sons, New Delhi.
9. Gupta, P. K. and Hira, D. S.: Operations Research, S. Chand and Company Ltd., New Delhi.
10. Luc Devroye: Non-Uniform Random Variate Generation, Springer – Verlag, New York.
11. Gentle, J. E.: Random Number Generation and Monte Carlo Methods, Springer- Verlag.
12. Robert, C. P. and Casella, G.: Monte Carlo Statistical methods, Springer-Verlag.
13. Rubinstien, R. Y.: Simulation and Monte Carlo Method, John Wiley, New York.

B.Sc. III (Statistics)

Practical IV

Probability Distributions

1. Model sampling from Laplace and Cauchy distributions.
2. Model sampling from log-normal and Weibull distributions.
3. Model sampling from logistic distribution.
4. Model sampling from Pareto distribution.
5. Model sampling from truncated binomial and Poisson distributions.
6. Model sampling from truncated normal and exponential distributions.
7. Model sampling from bivariate normal distribution.
8. Fitting of log-normal distribution.
9. Fitting of Weibull distribution.
10. Fitting of logistic distribution.
11. Fitting of Pareto distribution.

12. Fitting of truncated binomial distribution.
13. Fitting of truncated Poisson distribution.
14. Applications of multinomial distribution.
15. Applications of bivariate normal distribution.

Practical-V

Statistical Inference

1. Point estimation by Method of Moment for Discrete Distributions.
2. Point estimation by Method of Moment for Continuous Distributions.
3. Point estimation by Method of Maximum Likelihood (for one parameters).
4. Point estimation by Method of Maximum Likelihood (for two parameters).
5. Interval estimation of location and scale parameters of normal distribution (Single Sample).
6. Interval estimation of difference of location and ratio of scale parameters of normal distributions (Two sample).
7. Interval estimation for population proportion and difference between two population proportions.
8. Interval estimation for population median (using order statistics and limiting distribution of median).
9. Construction of MP test.
10. Construction of UMP test.
11. Construction of SPRT for Binomial, Poisson distributions, graphical representation of procedure.
12. Construction of SPRT for exponential and normal distributions, graphical representation of procedure.
13. Non-Parametric Tests-I : Run test, Sign test and Wilcoxon signed Rank test
14. Non-Parametric Test-II : Mann-Whitney U-test for two independent samples and Median Test for two large independent samples
15. Non-Parametric Tests-III: Kolmogorov-Smirnov test for one and two independent samples.

Practical VI

Design of Experiments and Sampling Methods

1. Analysis of CRD and RBD, Efficiency of RBD over CRD.
2. Analysis of LSD and efficiency of LSD over CRD and RBD.
3. Missing plot technique for RBD and LSD with single missing observations.

4. Analysis of Variance for non-normal data. (CRD, RBD, LSD)
5. Kruskal-Wallis's test for non-normal data(CRD,RBD,LSD)
6. Analysis of 2^2 and 2^3 factorial experiment.
7. Partial and total confounding
8. Simple Random Sampling for (i) Variables (ii) Attributes.
9. Determination of sample size in SRS for (i) Variables (ii)Attributes.
10. Stratified Random Sampling-I
11. Stratified Random Sampling-II
12. Ratio method of estimation
13. Regression method of estimation
14. Systematic Sampling
15. Cluster Sampling.

Practical VII

R- Programming,Quality Management andOperations Research

R- Programming:

1. Data input/output - Creation of vector using commands: c , rep , seq, scan
 - Creation of data frame using commands: data frame, edit
 - Arithmetic operation on vectors.
2. Diagrammatic and Graphical representation of data- Simple bar diagram, subdivided bar diagram, pie diagram, histogram, frequency polygon, ogive curves.
3. R- Programming (Measures of Central Tendency and Dispersion)
4. Simulation-I using R (Bernoulli, Binomial, Poisson and Geometric distribution.).
5. Simulation-II using R (Exponential and Normal distribution).

Quality Management:

6. EWMAChart.
7. CUSUM chart.
8. Six sigma limits for mean.
9. Single sampling plan.
10. Double sampling plan.

Operations Research:

11. Solution of LPP by Simplex Method
12. Solution of LLP by Big-M method.

13. Transformation problem.
14. Assignment problem.
15. Sequencing Problem.

Shivaji University, Kolhapur
Second year undergraduate compulsory course in
ENVIRONMENTAL STUDIES
Syllabus

- 1. Nature of Environmental Studies.** (4 lectures)
Definition, scope and importance.
Multidisciplinary nature of environmental studies
Need for public awareness.
- 2. Natural Resources and Associated Problems.** (4 lectures)
 - a) Forest resources: Use and over-exploitation, deforestation, dams and their effects on forests and tribal people.
 - b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams benefits and problems.
 - c) Mineral resources: Usage and exploitation. Environmental effects of extracting and using mineral resources.
 - d) Food resources: World food problem, changes caused by agriculture effect of modern agriculture, fertilizer-pesticide problems.
 - e) Energy resources: Growing energy needs, renewable and non-renewable energy resources, use of alternate energy sources. Solar energy, Biomass energy, Nuclear energy.
 - f) Land resources: Solar energy, Biomass energy, Nuclear energy, Land as a resource, land degradation, man induced landslides, soil erosion and desertification.Role of an individuals in conservation of natural resources.
- 3. Ecosystems** (6 lectures)
Concept of an ecosystem.
Structure and function of an ecosystem.
Producers, consumers and decomposers.
Energy flow in the ecosystem.
Ecological succession.
Food chains, food webs and ecological pyramids.
Introduction, types, characteristics features, structure and function of the following ecosystem :-
 - a) Forest ecosystem, b) Grassland ecosystem, c) Desert ecosystem,
 - d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).
- 4. Biodiversity and its conservation** (6 lectures)
Introduction- Definition: genetic, species and ecosystem diversity.
Bio-geographical classification of India.
Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values.
India as a mega- diversity nation.
Western Ghat as a biodiversity region.
Hot-spot of biodiversity.
Threats to biodiversity habitat loss, poaching of wildlife, man- wildlife conflicts.
Endangered and endemic species of India.
Conservation of biodiversity: In-situ and Ex-situ conservation of

biodiversity.

5. **Environmental Pollution** (6 lectures)
Definition: Causes, effects and control measures of: Air pollution, Water pollution, soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards.
Solid waste Management: Causes, effects and control measures of urban and industrial wastes. Role of a individual in prevention of pollution.
6. **Social Issues and the Environment** (8 lectures)
Disaster management: floods, earthquake, cyclone, tsunami and landslides.
Urban problems related to energy
Water conservation, rain water harvesting, watershed management
Resettlement and rehabilitation of people; its problems and concerns.
Environmental ethics: Issue and possible solutions.
Global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust.
Wasteland reclamation.
Consumerism and waste products.
7. **Environmental Protection** (8 lectures)
From Unsustainable to Sustainable development.
Environmental Protection Act.
Air (Prevention and Control of Pollution) Act.
Water (Prevention and control of Pollution) Act.
Wildlife Protection Act.
Forest Conservation Act.
Population Growth and Human Health, Human Rights.
8. **Field Work** (10 lectures)
Visit to a local area to document environmental assets-
River/Forest/Grassland/Hill/Mountain.
or
Visit to a local polluted site - Urban / Rural / Industrial /Agricultural.
or
Study of common plants, insects, birds.
or
Study of simple ecosystems - ponds, river, hill slopes, etc.

References :

- 1) Agarwal, K.C.2001, Environmental Biology, Nidi Pub. Ltd., Bikaner.
- 2) Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmedabad 380013, India, Email:mapin@icenet.net (R)
- 3) Brunner R.C.,1989, Hazardous Waste Incineration, McGraw Hill Inc. 480p
- 4) Clank R.S. Marine Pollution, Clanderson Press Oxford (TB)
- 5) Cunningham, W.P. Cooper, T.H.Gorhani, E. & Hepworth, M.T.2001, Environmental Encyclopedia, Jaico Pub. Mumbai, 1196p
- 6) De A.K., Environmental Chemistry, Wiley Western Ltd.
- 7) Down to Earth , Centre for Science and Environment , New Delhi.(R)
- 8) Gleick, H.,1993, Water in crisis, Pacific Institute for studies in Dev., Environment & Security. Stockholm Env. Institute. Oxford Univ. Press 473p

- 9) Hawkins R.E., Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay (R)
- 10) Heywood, V.H.& Watson, R.T.1995, Global Biodiversity Assessment, Cmbridge Univ. Press 1140p.
- 11) Jadhav, H.and Bhosale, V.M.1995, Environmental Protection and Laws, Himalaya Pub. House, Delhi 284p.
- 12) Mickinney, M.L.and School. R.M.1196, Environmental Science Systems and Solutions, Web enhanced edition, 639p.
- 13) Miller T.G. Jr., Environmental Science. Wadsworth Publications Co. (TB).
- 14) Odum, E.P.1971, Fundamentals of Ecology, W.B.Saunders Co. USA, 574p.
- 15) Rao M.N.and Datta, A.K.1987, Waste Water Treatment, Oxford & IBH Publ. Co. Pvt. Ltd., 345p
- 16) Sharma B.K., 2001, Environmental Chemistry, Gokel Publ. Hkouse, Meerut
- 17) Survey of the Environment, The Hindu (M)
- 18) Townsend C., Harper, J. and Michael Begon, Essentials of Ecology, Blackwell Science (TB)
- 19) Trivedi R.K. Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards, vol. I and II, Environmental Media (R)
- 20) Trivedi R.K. and P.K. Goel, Introduction to air pollution, Techno-Science Publications (TB)
- 21) Wagner K.D.,1998, Environmental management, W.B. Saunders Co. Philadelphia, USA 499p.
- 22) Paryavaran shastra – Gholap T.N.
- 23) Paryavaran Sahastra - Gharapure

(M) Magazine

(R) Reference

(TB) Textbook