ShikshanPrasarakSanstha's

PadmabhushanVasantraodada Patil

Mahavidyalaya, KavatheMahankal.

DEPARTMENT OF CHEMISTRY

Career Oriented Course in

"INTRODUCTION TO NANOTECHNOLOGY"

(2023-24)

PadmabhushanVasantraodada Patil Mahavidyalaya, KavatheMahankal.

DEPARTMENT OF CHEMISTRY

Report on Career Oriented Course in "Introduction to Nanotechnology"

Brief Summary

Sr. No.	Organizing department	Department of Chemistry		
1	**Type of Activity**	Career Oriented Course in "Introduction to Nanotechnology"		
2	**Duration of Activity**	4th Sept to 31st Oct 2023		
3	**Venue**	Lecture hall, Department of Chemistry		
4	**Participation**			
	Students	**Male**	**Female**	**Total**
	B. Sc. III	21	21	42
5	**Result**	**A-Grade**	**B-Grade**	**Total**
	B. Sc. III	41	01	42

Coordinator

Head

Head
Department Of Chemistry
P. V. P. Mahavidyalaya,
K.Mahankal,Dist-Sangli

PadmabhushanVasantraodada Patil Mahavidyalaya, KavatheMahankal.

DEPARTMENT OF CHEMISTRY

Report on Career Oriented Course in "Introduction to Nanotechnology"

Title	**Career Oriented Course in "Introduction to Nanotechnology"**
Duration	4th September to 31st October 2023
Organizer	Department of Chemistry, P.V.P. Mahavidyalaya,KavatheMahankal.
Funding	--
BOS / Faculty	Asso. Prof. S. V. Patil Asso. Prof. Dr. G. D. Kore Assi. Prof. A. A. Kamble Assi. Prof. A. S. Pawar Assi. Prof. Dr. R. S. Sutar
Coordinator	Assi. Prof. A. S. Pawar
Background	Nanotechnology has greatly contributed to major advances in computing and electronics, leading to faster, smaller, and more portable systems that can manage and store larger and larger amounts of information. For that, students must have some knowledge of nanotechnology so this course is intended.
Objective	1. To acquire basic knowledge about nanomaterials 2. To gather the information about use of nanomaterials in Natural Phenomenon. 3. To provide basic knowledge about fascinating properties of nanomaterials. 4. To generate skills of analysis ofNanomaterials. 5. To learn different techniques of preparation of nanomaterials.

Outcomes	1. To have some basic knowledge of nanomaterials and their applications 2. To have some basic knowledge about laboratory equipment's required for analysis of Nanomaterials. 3. To understand the role of nanomaterials in modern era.
Conclusion	Students got sufficient knowledge about nanotechnology. Course creates interest in students for analyzing various materials and phenomenon in nanotechnology. Thus, this course was fruitful and motivational for participated students.

Coordinator

Head

Head.
Department Of Chemistry
P. V. P. Mahavidyalaya,
K.Mahankal,Dist-Sangli

INDEX

From,
Head,
Department of Chemistry
P. V. P. College, KavatheMahankal,
Dist. Sangli, Maharashtra 416405
Date: 16/08/2023

To,
The Principal,
PadmabhushanVasantraodada Patil Mahavidyalaya,
KavatheMahankal, Dist. Sangli,
Maharashtra 416405

Subject: Seeking a permission to start the career-oriented course in "Introduction to Nanotechnology".

Respected sir,

As per your guidelines we are going to start a career-oriented course in "Introduction to Nanotechnology" in Department of Chemistry for our college students. This course will be of 30 hours and will be completed during 4th September to 31th Oct 2023. The course will be definitely very beneficiary for students.

I request you to give permission to start the above course in the Department.

Thanking you.

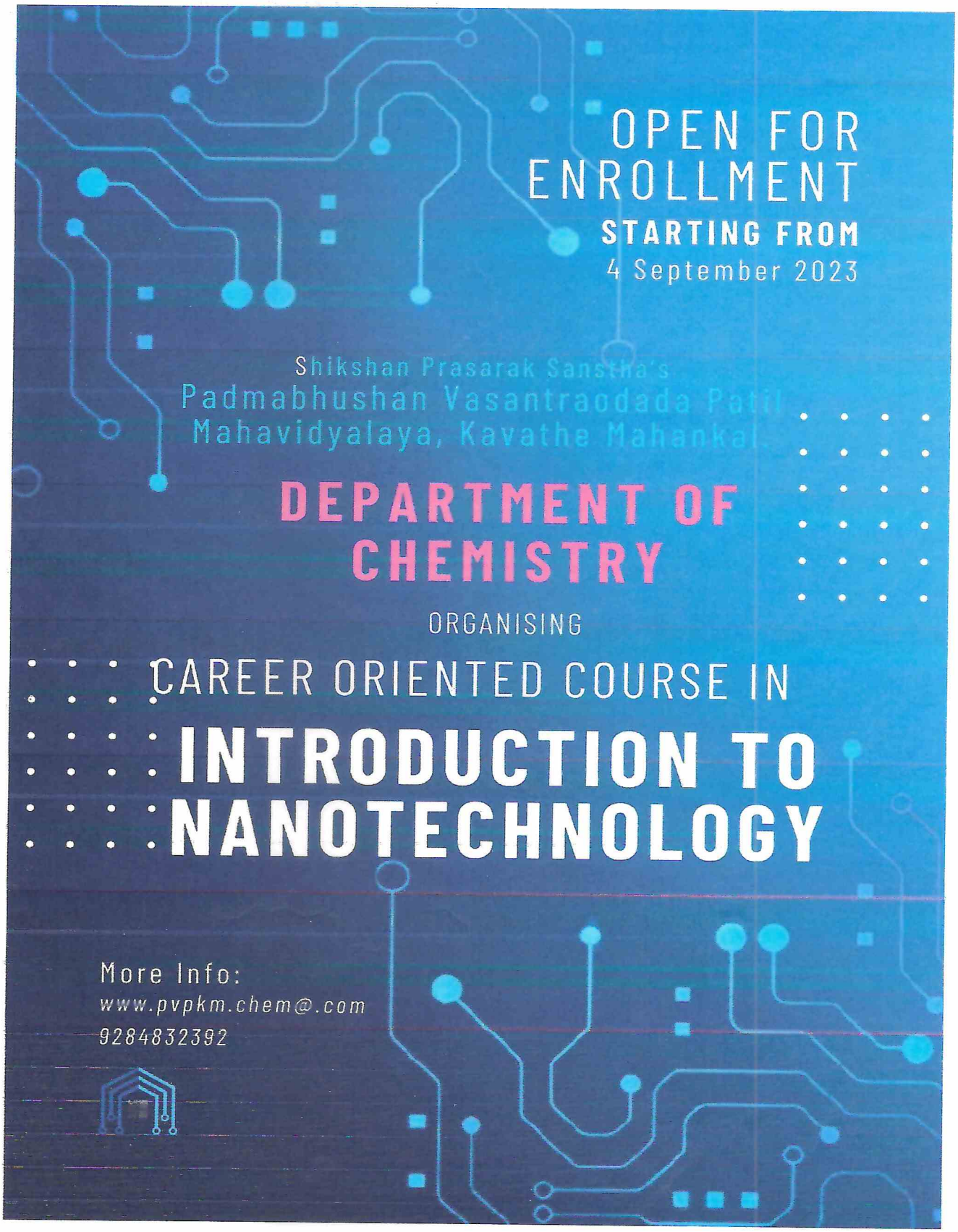
Yours faithfully,

Permission granted

-PRINCIPAL
Padmabhushan Vasantraodada Patil
Mahavidyalaya, K. Mahankal, Dist. Sangli

Head
Department Of Chemistry
P. V. P. Mahavidyalaya,
K.Mahankal,Dist-Sangli

BROCHURE


OPEN FOR ENROLLMENT
STARTING FROM
4 September 2023
Shikshan Prasarak Sanstha's
Padmabhushan Vasantraodada Patil Mahavidyalaya, Kavathe Mahankal
DEPARTMENT OF CHEMISTRY
ORGANISING
CAREER ORIENTED COURSE IN
INTRODUCTION TO NANOTECHNOLOGY
More Info:
www.pvpkm.chem@.com
9284832392

PadmabhushanVasantraodada Patil Mahavidyalaya, KavatheMahankal.

DEPARTMENT OF CHEMISTRY

Date: 01-09-2023

NOTICE

All the students in P. V. P. college, KavatheMahankal are informed that, Department of Chemistry is going to start the career-oriented course in "Introduction to Nanotechnology". The interested students are requested to enroll up to04thSeptember, 2023.

Course Coordinator

Head

Head
Department Of Chemistry
P. V. P. Mahavidyalaya,
K.Mahankal,Dist-Sangli

PadmabhushanVasantraodada Patil Mahavidyalaya, KavatheMahankal.

DEPARTMENT OF CHEMISTRY

Career Oriented Course in

Introduction to Nanotechnology

Board of Studies

Sr. No.	Name	Designation	Signature
1.	Asso. Prof. S. V. Patil	President	
2.	Asso. Prof. Dr. G. D. Kore	Member	
3.	Assi. Prof. A. A. Kamble	Member	
4.	Assi. Prof. A. S. Pawar	Member	
5.	Assi. Prof. Dr. R. S. Sutar	Member	

PadmabhushanVasantraodada Patil Mahavidyalaya, KavatheMahankal.

DEPARTMENT OF CHEMISTRY

Career Oriented Course in

Introduction to Nanotechnology

Aims and Objectives

During the certificate course of 'Introduction to Nanotechnology' a candidate is trained on professional skill, professional knowledge and Employability skill related to job role.

The objectives ofCourse are

1. To acquire basic knowledge about nanomaterials
2. To gather the information about use of nanomaterials in Natural Phenomenon.
3. To provide basic knowledge about fascinating properties of nanomaterials.
4. To generate skills of analysis ofNanomaterials.
5. To learn different techniques of preparation of nanomaterials.

Duration:

The course will be completed in 30hours .

Eligibility of the student:

1. The student must have the basic knowledge of chemistry.
2. Student must have passed H. Sc. Examination.
3. Student studying in institute for B.Sc.

Course outcomes:

By the end of this course students are expected,

1. To have some basic knowledge of nanomaterials and their applications
2. To have some basic knowledge about laboratory equipment's required for analysis of Nanomaterials.
3. To understand the role of nanomaterials in modern era.

Evaluation Method:

All the students will be continuously evaluated by,

1. Internal evaluation	10M
2. Home Assignments	10 M
3. Theory examination	80 M
	100 M

- Nature of question paper.

Q-1.40 Multiple choice question. (80 marks)

Grades: A grade= above 60, B grade = above 50, C grade = above 40

Certification: A certificate will be issued on successful completion of the course.

PadmabhushanVasantraodada Patil Mahavidyalaya, KavatheMahankal.

DEPARTMENT OF CHEMISTRY

Career Oriented Course in

Introduction to Nanotechnology

Syllabus

Theory Paper **[Total periods: 30 Hours]**

Unit I: Fundamentals ofNanoscience and Nanotechnology **07H**

Definitions, Relationship and Differences. Nano and Nature: NanoscopicColours (Butterfly Wings), Bioluminescence (Fireflies), Tribiology (Geckos sticky feet, lotus leaf effect). Introduction to hydrophilic and hydrophobic materials. Nanotechnology timeline, Pre-18th Century, 19th Century, 20th Century and 21st Century. Future perspectives of nanoscience and nanotechnology.

Unit II:Nanoscale Science 08 H

Interconversion of units. Introduction to surface area to volume ratio and aspect ratio. Difference between surface area to volume ratio of bulk materials and nanomaterials (sphere, hollow sphere, rods, hollow rods, cubes and hollow cubes) and related numerical problems. Difference in aspect ratio of bulk wire and nanowire and related numerical problems. Nanomaterials and wavelength of light.

Unit III:Classification of Nanomaterials08H

Introduction to dimensional growth process. Classification of nanomaterials into 0D, 1D, 2D and 3D. Relationship between dimension and shape of nanomaterials (Quantum dots, Quantum wires, Carbon nanotubes, Bucky balls, Fullerenes). Introduction to size effect on electronic and optical properties (Quantum confinement).

Unit IV:Introduction to Self-assembled Biological Nanomaterials in Nature 07H

Fundamentals of nanoscale self-assembly process involved in important functional biomolecules such as Nucleic acid (DNA and RNA), Proteins, Enzymes. Cell structure and organelles, nanoscale assembly of cellular components (cell membrane and liposomes). Nanoscale assembly of microorganisms (virus).

References:

1. Introduction to nanoscience and nanotechnology, CRC Press, Tylor and Francis Group, Boca Raton, G. L. Hornyak, H. F. Tibbals, J. Dutta and J J. Moore.

2. Introductory Nanoscience: Physical and Chemical Concepts, CRC Press, Tylor and Francis Group, Boca Raton, M. Kuno.

PadmabhushanVasantraodada Patil Mahavidyalaya, KavatheMahankal.

DEPARTMENT OF CHEMISTRY

Career Oriented Course in

Introduction to Nanotechnology

Date: 03-09-2023

NOTICE

All the enrolled students are informed that, the lectures of the course will be started from **04th September**as per timetable. All the lectures will be conducted in chemistry department lecture hall.

Course Coordinator

Head

Head
Department Of Chemistry
P. V. P. Mahavidyalaya,
K.Mahankal,Dist-Sangli

PadmabhushanVasantraodada Patil Mahavidyalaya, KavatheMahankal.

DEPARTMENT OF CHEMISTRY

Career Oriented Course in

Introduction to Nanotechnology

TIMETABLE

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Theory/ Practical	Theory	Theory	Theory	Theory	Theory	Theory
Lecturer	**SVP**	**RSS**	**TPS**	**ASP**	**GDK**	**AAK**

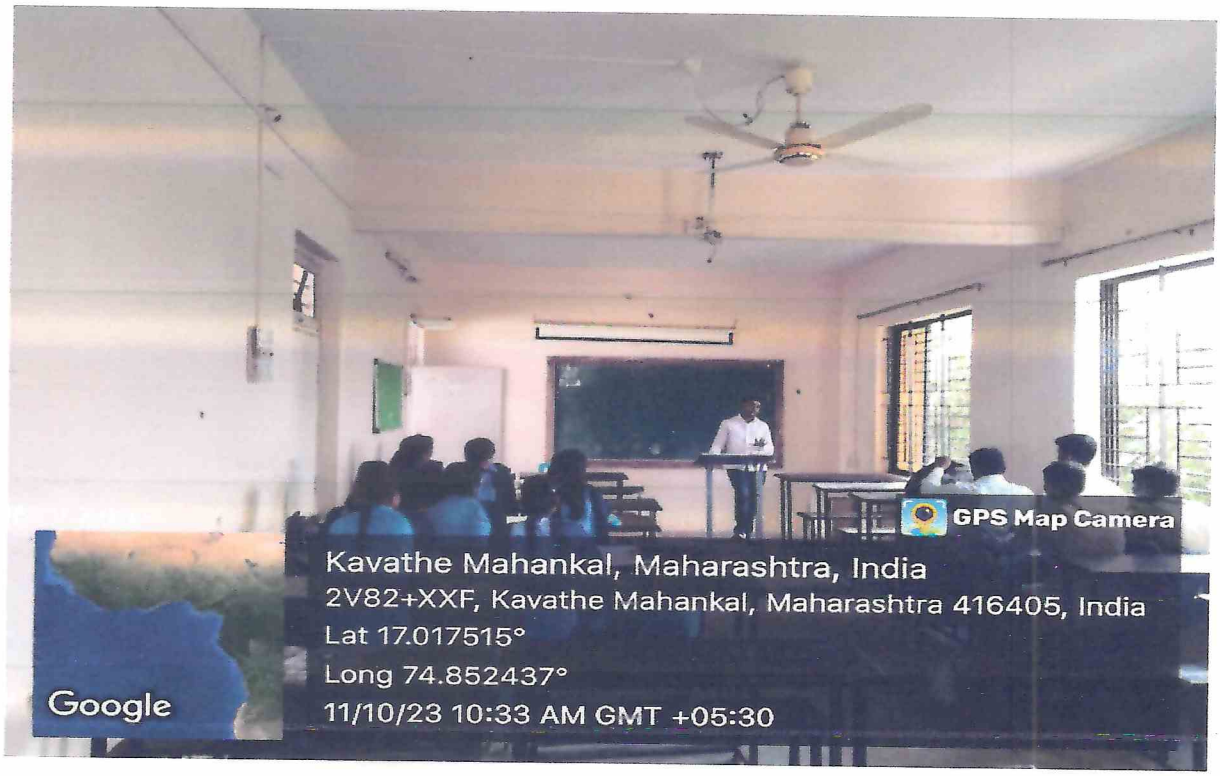
- **The time of theory lectures will be 9:50 am to 10:50 am in chemistry lecture hall**
- **This lecture schedule will be followed from 4th September to 21th October**

Course Coordinator

Head

Head
Department Of Chemistry
P. V. P. Mahavidyalaya,
K.Mahankal,Dist-Sangli

Theory Lectures



Padmabhushan Vasantraodada Patil Mahavidyalaya, Kavathe Mahankal.

DEPARTMENT OF CHEMISTRY

INTRODUCTION TO NANOTECHNOLOGY

ATTENDANCE

Sr. no	NAME OF STUDENT	Date														
		29 sept	30 sept	03 oct	04 oct	05 oct	06 oct	07 oct	09 oct	10 oct	11 oct	12 oct	18 oct	19 oct	20 oct	24 oct
1	*SHINGADE VIDYA APPASO	Bangale	Bangale	Bangale	Bangale	Bangale	Bangale	Bangale	Bangale	Bangale	Bangale	Ab	Bangale	Bangale	Bangale	Bangale
2	SURYAWANSHI PRATIKSHA AJAYRAJ	Pratikshaw	Pratikshaw	Pratikshaw	Pratikshaw	Pratikshaw	Pratikshaw	Pratikshaw	Pratikshaw	Pratikshaw	Pratikshaw	Pratikshaw	Pratikshaw	Ab	Pratikshaw	Pratikshaw
3	PATIL SOURABH SURESH	Patil	Ab	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
4	* DALAVI AISHWARYA GAJANAN	Aishwarya	Aishwarya	Aishwarya	Aishwarya	Aishwarya	Aishwarya	Aishwarya	Aishwarya	Aishwarya	Aishwarya	Aishwarya	Aishwarya	Aishwarya	Aishwarya	Ab
5	* PHAKADE PRAVINA BABAN	Pakade	Pakade	Pakade	Pakade	Pakade	Pakade	Pakade	Pakade	Pakade	Ab	Pakade	Pakade	Pakade	Pakade	Pakade
6	* PATIL PRACHI BHARAT	Pratik	Pratik	Pratik	Ab	Pratik	Pratik	Pratik	Pratik	Pratik	Pratik	Pratik	Pratik	Pratik	Pratik	Pratik
7	PAWAR GANESH APPASO	Ganesh	Ganesh	Ganesh	Ganesh	Ganesh	Ganesh	Ganesh	Ab	Ganesh	Ganesh	Ganesh	Ganesh	Ganesh	Ganesh	Ganesh
8	PATIL VISHAL LAGONDA												Ab			
9	MULANI SUBBAN APPALAL	Bmulani	Bmulani	Bmulani	Ab	Bmulani	Bmulani	Bmulani	Bmulani	Bmulani	Bmulani	Bmulani	Bmulani	Bmulani	Bmulani	Bmulani
10	* SHELAKE YOGITA ASHOK	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake	Ab	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake
11	SAVALE SANIKA ASHOK		Ab													

Sr. no	NAME OF STUDENT	Date													
		29 Sept	30 Sept	03 oct	04 oct	05 oct	06 oct	07 oct	09 oct	10 oct	11 oct	12 oct	18 oct	19 oct	20 oct	21 oct
12	* JANKAR SWAPNALI VILAS														Ab	
13	RASALE OMNKAR KUNDLIK	O.K.Rasale.	O.K.Rasale.	O.K.Rasale.	O.K.Rasale.	O.K.Rasale.	O.K.Rasale.	O.K.Rasale.	O.K.Rasale.	O.K.Rasale.	O.K.Rasale.	O.K.Rasale.	Ab	O.K.Rasale.	O.K.Rasale.	O.K.Rasale.
14	BHOSALE GULAB AJAY	A.Bhosale	A.Bhosale	A.Bhosale	Ab	A.Bhosale	A.Bhosale	A.Bhosale	A.Bhosale	A.Bhosale	A.Bhosale	A.Bhosale	A.Bhosale	A.Bhosale	A.Bhosale	A.Bhosale
15	* PATIL PRANALI RAJENDRA	Patil	Patil	Patil	Patil	Patil	Ab	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
16	JADHAV SANKET HANMANT			Ab												
17	* KAULAPURE POOJA ~~VILAS~~ PRAKASH	PPK	PPK	PPK	PPK	PPK	PPK	PPK	PPK	PPK	Ab	PPK	PPK	PPK	PPK	PPK
18	* HUBALE POONAM SHAHAJI	Shahale	Shahale	Shahale	Shahale	Shahale	Shahale	Ab	Shahale	Shahale	Shahale	Shahale	Shahale	Shahale	Shahale	Shahale
19	CHAVAN SANKET RANGRAO	SRC	SRC	Ab	SRC	SRC	SRC	SRC	SRC	SRC	SRC	SRC	SRC	SRC	SRC	SRC
20	WAGHMODE VIKRAM SIDDHARTH								Ab.							
21	PAREKAR SHUBHAM SAMBHAJI	Shubham	Shubham	Shubham	Ab	Shubham	Shubham	Shubham	Shubham	Shubham	Shubham	Shubham	Shubham	Shubham	Shubham	Shubham
22	KHANDARE VISHVAJIT NANASO	V.K.	V.K.	V.K.	V.K.	V.K.	Ab	V.K.	V.K.	V.K.	V.K.	V.K.	V.K.	V.K.	V.K.	V.K.
23	BHOSALE VINAYAK PRAVIN	Bhosale	Ab	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale

Sr. no	NAME OF STUDENT	Date														
		29 Sept	30 Sept	03 oct	04 oct	05 oct	06 oct	07 oct	09 oct	10 oct	11 oct	12 oct	18 oct	19 oct	20 oct	21 oct
24	MENGUDALE MAHESHWER JALINDER	Mengudale	A/s	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale
25	* CHAVAN BHARTI SHASHIKANT	Bchavan	Bchavan	Bchavan	Bchavan	Bchavan	Bchavan	Bchavan	Bchavan	Bchavan	A/s	Bchavan	Bchavan	Bchavan	Bchavan	Bchavan
26	PATIL JAYDEEP UDDHAV	Patil	Patil	A/s	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
27	PATIL VIPUL VILAS					A/s										
28	* DESHINGE ADITE MARUTI	A/s	Adite	Adite	Adite	Adite	Adite	Adite	Adite	A/s	Adite	Adite	Adite	Adite	Adite	Adite
29	* CHAVAN PRAJAKTA GULABRAO	Pchavan	Pchavan	Pchavan	Pchavan	Pchavan	Pchavan	Pchavan	Pchavan	Pchavan	Pchavan	Pchavan	A/s	Pchavan	Pchavan	Pchavan
30	* ATHAVALE PRAMODINI SAVANT	Pawar	Pawar	Pawar	Pawar	A/s	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar
31	* CHAVAN VAISHNAVI LAXMAN	Vchavan	Vchavan	Vchavan	Vchavan	Vchavan	Vchavan	Vchavan	Vchavan	Vchavan	Vchavan	Vchavan	Vchavan	Vchavan	A/s	Vchavan
32	* BHOSALE RUTUJA ANANDA	Bhosale	Bhosale	A/s	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale
33	* AWATI DHANESHWERI DHANAPPA	Awati	Awati	Awati	Awati	Awati	Awati	Awati	Awati	A/s	Awati	Awati	Awati	Awati	Awati	Awati
34	* KEDAR PRATIKSHA SUBHASH	P.S.kedar	P.S.kedar	P.S.kedar	P.S.kedar	P.S.kedar	A/s	P.S.kedar	P.S.kedar	P.S.kedar	P.S.kedar	P.S.kedar	P.S.kedar	P.S.kedar	P.S.kedar	P.S.kedar
35	* SALUNKHE SANIKA RAJARAM	Salunkhe	A/s	Salunkhe	Salunkhe	Salunkhe	Salunkhe	Salunkhe	Salunkhe	Salunkhe	Salunkhe	Salunkhe	Salunkhe	Salunkhe	Salunkhe	A/s

Sr. no	NAME OF STUDENT	Date														
		29 Sept	30 Sept	03 Oct	04 Oct	05 Oct	06 Oct	07 Oct	09 Oct	10 Oct	11 Oct	12 Oct	18 Oct	19 Oct	20 Oct	21 Oct
36	MANE RUSHIKESH ASHOK	Present	Present	Present	Ab	Present	Present	Present	Present	Present	Present	Present	Present	Present	Ab	Present
37	PATIL SURAJ RAJENDRA	Patil	Patil	Patil	Patil	Patil	Ab	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
38	PATIL OMNKAR RAJENDRA	Ab	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Ab	Patil	Patil
39	* MALI TRIUPTI MUKUND	T.M.Mali	T.M.Mali	T.M.Mali	T.M.Mali	T.M.Mali	T.M.Mali	T.M.Mali	T.M.Mali	T.M.Mali	Ab	T.M.Mali	T.M.Mali	T.M.Mali	T.M.Mali	T.M.Mali
40	SAKATE SHASHIKANT SHUBHASH	Sakate	Sakate	Ab	Sakate	Sakate	Sakate	Sakate	Ab	Sakate	Sakate	Sakate	Sakate	Sakate	Sakate	Sakate
41	BHOSALE GAURAV GANPATRAO	Bhosale	Bhosale	Bhosale	Bhosale	Ab	Bhosale	Ab	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale
42	DESAI PRANAV PANDURANG	Present	Ab	Present	Present	Present	Present	Present	Present	Present	Present	Present	Ab	Present	Present	Present

Course Co-ordinator.

Head
Department Of Chemistry
P. V. P. Mahavidyalaya,
K.Mahankal,Dist-Sangli

Padmabhushan Vasantraodada Patil Mahavidyalaya, Kavathe Mahankal.

DEPARTMENT OF CHEMISTRY

INTRODUCTION TO NANOTECHNOLOGY

ATTENDANCE

Sr. no	NAME OF STUDENT	Date													
		04 Sept	05 Sept	06 Sept	07 Sept	08 Sept	09 Sept	11 Sept	12 Sept	13 Sept	14 Sept	15 Sept	16 Sept	25 Sept	26 Sept	27 Sept
1	*SHINGADE VIDYA APPASO	P	P	P	P	P	P	P	Ab	P	P	P	P	P	P	P
2	SURYAWANSHI PRATIKSHA AJAYRAJ	P	P	Ab	P	P	P	P	P	P	P	P	P	P	P	P
3	PATIL SOURABH SURESH	P	P	P	P	P	Ab	P	P	P	P	P	P	Ab	P	P
4	* DALAVI AISHWARYA GAJANAN	P	P	P	P	P	P	P	P	P	P	P	P	Ab	P	P
5	* PHAKADE PRAVINA BABAN	P	P	Ab	P	P	P	P	P	P	P	P	P	P	P	P
6	* PATIL PRACHI BHARAT	P	P	P	P	P	P	P	P	Ab	P	P	P	P	P	P
7	PAWAR GANESH APPASO	P	P	P	P	P	Ab	P	P	P	P	Ab	P	P	P	P
8	PATIL VISHAL LAGONDA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
9	MULANI SUBBAN APPALAL	P	P	P	Ab	P	P	P	P	P	P	P	P	P	P	P
10	* SHELAKE YOGITA ASHOK	Ab	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake	Ab	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake	Y.A.Shelake
11	SAVALE SANIKA ASHOK	P	P	Ab	P	P	P	P	P	P	P	P	P	P	P	P

Sr. no	NAME OF STUDENT	Date														
		04 Sept	05 Sept	06 Sept	07 Sept	08 Sept	09 Sept	11 Sept	12 Sept	13 Sept	14 Sept	15 Sept	16 Sept	25 Sept	26 Sept	27 Sept
12	* JANKAR SWAPNALI VILAS				Ab											
13	RASALE OMNKAR KUNDLIK	O.K.Rasale	O.K.Rasale	O.K.Rasale	O.K.Rasale	O.K.Rasale	O.K.Rasale	Ab	O.K.Rasale	O.K.Rasale	O.K.Rasale	O.K.Rasale	O.K.Rasale	O.K.Rasale	O.K.Rasale	O.K.Rasale
14	BHOSALE GULAB AJAY	G.Bhosale	G.Bhosale	G.Bhosale	G.Bhosale	G.Bhosale	G.Bhosale	G.Bhosale	Ab	G.Bhosale	G.Bhosale	G.Bhosale	G.Bhosale	G.Bhosale	G.Bhosale	G.Bhosale
15	* PATIL PRANALI RAJENDRA			Ab								Ab				
16	JADHAV SANKET HANMANT															Ab
17	* KAULAPURE POOJA VILAS						Ab									
18	* HUBALE POONAM SHAHAJI				Ab											
19	CHAVAN SANKET RANGRAO									Ab						
20	WAGHMODE VIKRAM SIDDHARTH						Ab									
21	PAREKAR SHUBHAM SAMBHAJI			Ab												
22	KHANDARE VISHVAJIT NANASO	Ab														
23	BHOSALE VINAYAK PRAVIN				Ab											

Sr. no	NAME OF STUDENT	Date														
		04 sept	05 Sept	06 Sept	07 sept	08 sept	09 sept	11 sept	12 sept	13 sept	14 sept	15 sept	16 Sept	25 Sept	26 Sept	27 Sept
24	MENGUDALE MAHESHWER JALINDER	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale	Mengudale
25	* CHAVAN BHARTI SHASHIKANT	Bchavan	Bchavan	Bchavan	Bchavan	A/L	Bchavan	Bchavan	Bchavan	Bchavan	Bchavan	Bchavan	Bchavan	Bchavan	Bchavan	Bchavan
26	PATIL JAYDEEP UDDHAV	Pratik	Pratik	Pratik	Pratik	Pratik	Pratik	Pratik	A/L	Pratik	Pratik	Pratik	Pratik	Pratik	Pratik	Pratik
27	PATIL VIPUL VILAS						A/L									
28	* DESHINGE ADITE MARUTI	Aditi	Aditi	A/L	Aditi	Aditi	Aditi	Aditi	Aditi	Aditi	Aditi	Aditi	Aditi	Aditi	Aditi	Aditi
29	* CHAVAN PRAJAKTA GULABRAO	A/L	Pchavan	Pchavan	Pchavan	Pchavan	Pchavan	Pchavan	Pchavan	Pchavan	Pchavan	Pchavan	Pchavan	Pchavan	Pchavan	Pchavan
30	* ATHAVALE PRAMODINI SAVANT	Savant	Savant	Savant	A/L	Savant	Savant	Savant	Savant	Savant	Savant	Savant	Savant	Savant	Savant	Savant
31	* CHAVAN VAISHNAVI LAXMAN	Chavan	A/L	Chavan	Chavan	Chavan	Chavan	Chavan	Chavan	Chavan	Chavan	Chavan	Chavan	A/L	Chavan	Chavan
32	* BHOSALE RUTUJA ANANDA	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale
33	* AWATI DHANESHWERI DHANAPPA	A. D. Awati	A. D. Awati	A. D. Awati	A. D. Awati	A. D. Awati	A. D. Awati	A. D. Awati	A. D. Awati	A. D. Awati	A. D. Awati	A. D. Awati	A/L	A. D. Awati	A. D. Awati	A. D. Awati
34	* KEDAR PRATIKSHA SUBHASH	P.S.kedar	P.S.kedar	P.S.kedar	P.S.kedar	A/L	P.S.kedar	P.S.kedar	P.S.kedar	P.S.kedar	P.S.kedar	P.S.kedar	P.S.kedar	P.S.kedar	P.S.kedar	P.S.kedar
35	* SALUNKHE SANIKA RAJARAM	Salunkhe	Salunkhe	Salunkhe	Salunkhe	Salunkhe	Salunkhe	Salunkhe	Salunkhe	A/L	Salunkhe	Salunkhe	Salunkhe	Salunkhe	Salunkhe	Salunkhe

Sr. no	NAME OF STUDENT	Date														
		04 sept	05 sept	06 sept	07 sept	08 sept	09 sept	11 sept	12 sept	13 sept	14 sept	15 sept	16 sept	25 sept	26 sept	27 sept
36	MANE RUSHIKESH ASHOK	Present	Present	Present	Present	Ab	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present
37	PATIL SURAJ RAJENDRA	Ab	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Ab	Present	Present	Present
38	PATIL OMNKAR RAJENDRA	Present	Present	Present	Ab	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present
39	* MALI TRIUPTI MUKUND	T.mali	T.mali	T.mali	T.mali	T.mali	T.mali	T.mali	T.mali	Ab	T.mali	T.mali	T.mali	T.mali	T.mali	T.mali
40	SAKATE SHASHIKANT SHUBHASH	Sakate	Sakate	Sakate	Sakate	Sakate	Ab	Sakate	Sakate	Sakate	Sakate	Sakate	Sakate	Sakate	Sakate	Sakate
41	BHOSALE GAURAV GANPATRAO	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Ab	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale	Bhosale
42	DESAI PRANAV PANDURANG	Present	Present	Ab	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present

Course Coordinator.

Head
Department of Secretary
P. V. P. Mahavidyalaya,
Kupwad (Dist-Sangli)

PadmabhushanVasantraodada Patil Mahavidyalaya, KavatheMahankal.

DEPARTMENT OF CHEMISTRY

Career Oriented Course in

Introduction to Nanotechnology

NOTICE

23/10/2023

All the enrolled students are informed that, the timetable for theory examination and practical examination of the course in "Introduction to Nanotechnology" is as below,

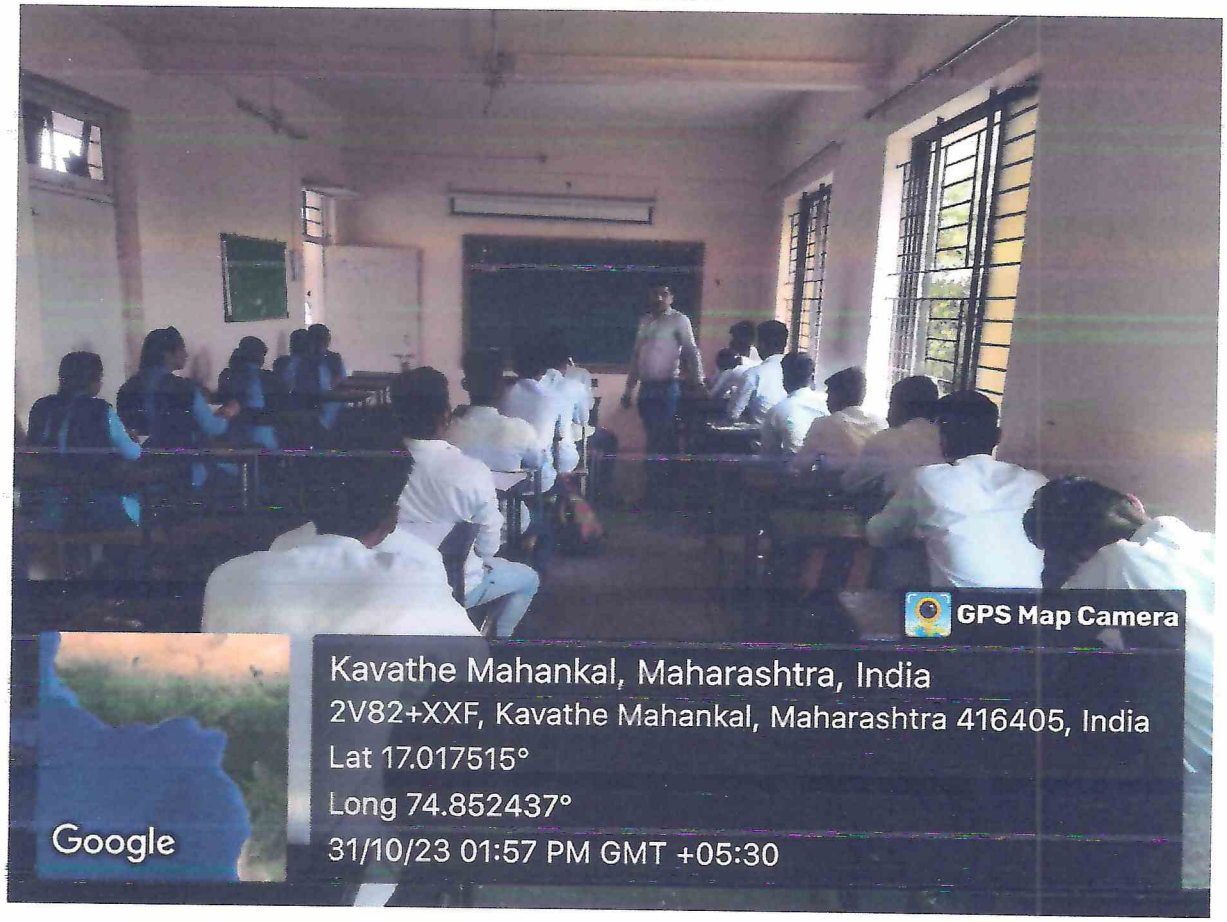
Examination type	Date	Time	Venue
Theory MCQ	**31/10/2023**	**01:00 pm to 03:00 pm**	**Hall no. 32 &33**

Course Coordinator

Head

Head
Department Of Chemistry
P. V. P. Mahavidyalaya,
K.Mahankal,Dist-Sangli

Examination



PadmabhushanVasantraodada Patil Mahavidyalaya, KavatheMahankal.

DEPARTMENT OF CHEMISTRY

Career Oriented Course in "Introduction to Nanotechnology"

Theory Examination

Date:**25/10/2023**

Time: **9:00am to 11:00am** Marks: 80

Name:

Instructions: 1) All questions are compulsory

2) All question carries equal marks

Que. 1. Choose the correct alternative and make a tick mark to right answer.

1. 1 nanometer = _____ m
   (A) 10^{-3}(B) 10^{-6}
   (C) 10^{-9}(D) 10^{-12}
2. The size of nanomaterials ranges between _____.
   (A) 1 nm to 100 nm
   (B) 0.01 nm to 0.001 nm
   (C) 1 nm to 10 nm
   (D) 1 nm to 1000 nm
3. Identify the INCORRECT statement regarding nanomaterials.
   (A) The properties of nanomaterials change as a function of size.
   (B) Nanomaterials possess unique magnetic and electrical properties.
   (C) Nanomaterials are larger than bacteria and cells but smaller than a tennis ball.
   (D) The term nano in Greek means dwarf.
4. Nanorods is an example of _____ nanostructure.
   (A) zero-dimensional
   (B) one-dimensional
   (C) two-dimensional
   (D) three-dimensional
5. Which of the following nanomaterial has two dimensions < 100 nm?
   (A) Nanowires (B) Nanorings
   (C) Microcapsules (D) Thin films
6. Which of the following is matched INCORRECTLY?
   i. All three dimensions < 100 nm Quantum dots
   ii. Two dimensions < 100 nm: Nanoshells
   iii. One dimension < 100 nm: Thin films
   (A) i, ii (B) Only ii (C) i, iii (D) Only iii
7. . The colour observed in case of elemental gold at bulk is different than that of gold

particles at nanoscale. This can be categorised as _____ property of nanomaterial.

(A) catalytic (B) electrical

(C) optical (D) thermal

8. _____ provides more number of reaction sites that leads to higher chemical reactivity of nanoparticles.

(A) Colour

(B) High surface area to volume ratio

(C) Thermal property

(D) Electrical conductivity

9. When bulk material is sub divided into a group of individual nanoparticles, then the total volume _____, with _____ in collective surface area.

(A) increases, increase

(B) remains the same, increase

(C) decreases, increase

(D) remains the same, decrease

10. Which of the following nanoparticles is effectively used in photocatalysis?

(A) Platinum metal(B) Palladium metal

(C) Zinc oxide (D) Gold metal

11. Nanomaterial-based catalysts _____.

(A) are homogeneous catalysts

(B) show decreased catalytic activity

(C) have smaller surface area as compared to bulk form

(D) can be recycled

12. The diameter of colloidal particles ranges between _____.

(A) 1 nm to 10 nm

(B) 1 nm to 100 nm

(C) 100 nm to 1000 nm

(D) 0.01 nm to 100 nm

13. Sol-gel process is based on _____ reactions.

(A) inorganic polymerization

(B) organic decomposition

(C) inorganic precipitation

(D) organic precipitation

14. Gelation resulting from the formation of an oxide involves _____.

(A) hydrolysis

(B) polycondensation reaction

(C) drying

(D) thermal decomposition

15. Aging of the gel means the gel transforms into a _____.

(A) gaseous state (B) liquid

(C) solid mass (D) oily liquid

16. Which of the following information about nanoparticles can be obtained using UV-visible spectrophotometer?

(A) Preliminary confirmation of formation of nanoparticles

(B) Crystal structure

(C) Morphology

(D) Binding nature

17. X-ray diffraction gives all the information regarding nanoparticles EXCEPT the _

(A) particle size (B) crystal structure

(C) binding nature (D) geometry

18. 33. Information about morphology of nanomaterial can be obtained using __

(A) TEM (B) XRD

(C) SEM (D) FTIR Samp

19. Nanoparticles can be used to make _____.
(A) scratchproof sunglasses
(B) sunscreen
(C) crack resistant paints
(D) all of the above

20. Lotus effect is used _____.
(A) in water purification techniques
(B) in electronic devices like MRAM
(C) in self-cleaning windows
(D) in making stronger and lighter surfaces

21. Identify the INCORRECT statement from the following regarding nanotechnology.
(A) It can bring revolution in electronics and computing.
(B) It will make solar power more economical.
(C) It can be used in treatment of life threatening diseases.
(D) It is pollution free.

22. One and two dimensional nanostructures are one in which _____ dimension(s) respectively are in the nanoscale.
(A) two and one (B) one and two
(C) two and three (D) one and three

23. Which of the following nanomaterials does NOT have all the three dimensions < 100 nm?
(A) Quantum dots (B) Nanorings
(C) Microcapsules (D) Nanowires

24. Surface area _____ with _____ in particle size which in turn increases catalytic activity of nanoparticles.
(A) increases, increase
(B) increases, decrease
(C) decreases, decrease
(D) remains constant, decrease

25. Nanoparticles of which of the following will effectively carry out conversion given below: But-1-ene ⟶ n-Butane
(A) TiO2 (B) ZnO
(C) Pd metal(D) Gold

26. All the following statements are CORRECT, EXCEPT:
(A) The synthesis of nanoparticles by colloidal dispersion involves bottom-up approach.
(B) Sols are dispersions of colloidal particles in a gas.
(C) In the top-down approach, nanomaterials are synthesized from bulk material by breaking the material.
(D) Sol-gel process is widely employed to prepare oxide materials.

27. Which of the following instruments can be employed for the preliminary confirmation of formation of nanoparticles?
(A) UV-visible spectrophotometer
(B) X-ray diffractometer
(C) Transmission Electron Microscope
(D) Fourier Transform Infrared Spectroph

28. Lustre found on medieval pottery is due to _____.
(A) gold and silver nanoparticles
(B) certain spherical metallic nanoparticles
(C) carbon black
(D) fumed silica

29. "There is a plenty of room at the bottom." This was stated by
    A. Issac Newton
    B. Albert Einstein
    C. Richard Feynman
    D. Eric Drexler
30. Which of the following nanostructured material is used in tyres of car to increase the life of tyre?
    (A) Carbon black (B) Gold
    (C) Ruby (D) Fumed silica
31. Which of the following information is given by UV-visible spectroscopy?
    (A) Absorption of functional groups
    (B) Preliminary confirmation of formation of nanoparticles
    (C) Morphology
    (D) Crystal structure
32. To detect the binding nature of nanomaterial which of the following techniques need to be employed?
    (A) XRD (B) SEM
    (C) TEM (D) FTIR
33. Gelation process which occurs during the wet chemical synthesis of nanomaterials is the result of _____.
    (A) hydrolysis reaction
    (B) polycondensation reaction
    (C) drying
    (D) thermal decomposition
34. Which of the following can be categorised as two-dimensional nanostructure?
    (A) Nanoparticles (B) Nanowires
    (C) Thin films (D) Nano rods
35. Which of the following nanomaterial has all three dimensions < 100 nm?
    (A) Nanowires (B) Nanorings
    (C) Nanotubes (D) Thin films
36. Which nanoparticles are used as a disinfectants
    (A)Silver (B) Gold (C) Iron (D) Platinum
37. Which plant is an example of self cleaning
    (A) Lotus (B) Rose
    (C) Lemon (D) Orange
38. Nanomaterials have applications in field of
    (A) Electronics (B) Solar cell
    (C) catalysis (D) All of these
39. Which nanoparticles are used in sunscreens .....
    (A) FeO(B) TiO2
    (C) CuO(D) NiO
40. Nanoparticles of Gold have ..... Colour
    (A) Yellow (B)Blue
    (C)Green (D) Red

Padmabhushan Vasantraodada Patil Mahavidyalaya, Kavathe Mahankal.

DEPARTMENT OF CHEMISTRY

COC IN INTRODUCTION TO NANOTECHNOLOGY

RESULT

Sr.no	NAME OF STUDENT	I. E.	H. A.	THEORY	TOTAL	GRADE
1	*SHINGADE VIDYA APPASO	9	9	74	92	A
2	SURYAWANSHI PRATIKSHA AJAYRAJ	9	8	74	91	A
3	PATIL SOURABH SURESH	5	4	70	79	A
4	* DALAVI AISHWARYA GAJANAN	9	9	74	92	A
5	* PHAKADE PRAVINA BABAN	9	8	74	91	A
6	* PATIL PRACHI BHARAT	8	8	74	90	A
7	PAWAR GANESH APPASO	8	8	74	90	A
8	PATIL VISHAL LAGONDA	7	7	66	80	A
9	MULANI SUBBAN APPALAL	7	7	72	86	A
10	* SHELAKE YOGITA ASHOK	7	8	76	91	A
11	SAVALE SAKSHI ARUN	7	8	76	91	A
12	* JANKAR SWAPNALI VILAS	9	9	72	90	A
13	RASALE OMNKAR KUNDLIK	5	5	68	78	A
14	BHOSALE GULAB AJAY	5	7	66	78	A
15	* PATIL PRANALI RAJENDRA	8	7	78	93	A
16	JADHAV SANKET HANMANT	8	8	70	86	A
17	* KAULAPURE POOJA PRAKASH	8	8	74	90	A
18	* HUBALE POONAM SHAHAJI	4	4	50	58	B
19	CHAVAN SANKET RANGRAO	7	8	70	85	A
20	WAGHMODE VIKRAM SIDDHARTH	8	8	72	88	A
21	PAREKAR SHUBHAM SAMBHAJI	7	6	72	85	A
22	KHANDARE VISHVAJIT NANASO	6	6	66	78	A
23	BHOSALE VINAYAK PRAVIN	6	6	72	84	A
24	MENGUDALE MAHESHWER JALINDER	8	8	72	88	A
25	* CHAVAN BHARTI SHASHIKANT	8	8	76	92	A
26	PATIL JAYDEEP UDDHAV	5	5	68	78	A
27	PATIL VIPUL VILAS	5	5	72	82	A
28	* DESHINGE ADITI MARUTI	8	8	72	88	A
29	* CHAVAN PRAJAKTA GULABRAO	7	7	76	90	A
30	* ATHAVALE PRAMODINI SAVANT	7	7	76	90	A
31	* CHAVAN VAISHNAVI LAXMAN	7	7	76	90	A
32	* BHOSALE RUTUJA ANANDA	7	7	70	84	A
33	* AWATI DHANESHWARI DHANAPPA	7	6	78	91	A
34	* KEDAR PRATIKSHA SUBHASH	7	7	76	90	A
35	* SALUNKHE SANIKA RAJARAM	7	6	74	87	A
36	MANE RUSHIKESH ASHOK	7	6	76	89	A
37	PATIL SURAJ RAJENDRA	5	4	74	83	A
38	PATIL OMNKAR RAMCHANDRA	5	4	70	79	A
39	* MALI TRIUPTI MUKUND	8	8	70	86	A
40	SAKATE SHASHIKANT SHUBHASH	4	4	74	82	A
41	BHOSALE GAURAV GANPATRAO	4	4	62	70	A
42	DESAI PRANAV PANDURANG	4	4	68	76	A

Course Coordinator

Head

Head
Department Of Chemistry
P. V. P. Mahavidyalaya,
K.Mahankal,Dist-Sangli

CERTIFICATE

Shikshan Prasarak Sanstha's

Padmabhushan Vasantraodada Patil Mahavidyalaya, Kavathe Mahankal.

DEPARTMENT OF CHEMISTRY

CAREER ORIENTED COURSE IN

"INTRODUCTION TO NANOTECHNOLOGY"

This is certify that Mr. /Miss ..... from B. Sc. III is actively participated and completed successfully the career oriented course in Introduction to the nanotechnology with .. Grade organized and arranged by Department of Chemistry

COURSE COORDINATOR

HEAD OF DEPARTMENT

01 NOV 2023