

**Shri Shivaji Education Society's
Board for Higher Education Vidyanagar Karad.**



YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD

DEPARTMENT OF CHEMISTRY

SHORT TERM COURSE

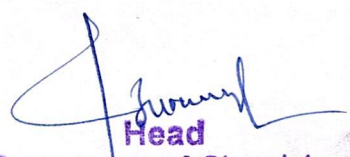
Instrumental Techniques in Chemistry

2023-24

Index

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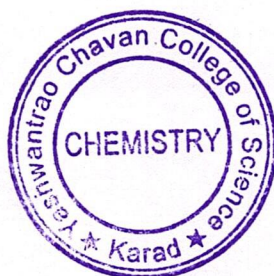


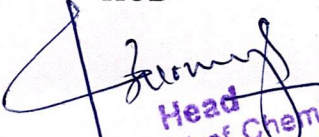

Head
 Department of Chemistry
 Yashwantrao Chavan College of
 Science, Karad

YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD.**Department of Chemistry****Short term course (2023-24)****Notice**

Date : 06 /11/2023

All the Students of the M. Sc. I are hereby informed that the Department of Chemistry is going to run a short term course entitled as "INSTRUMENTAL TECHNIQUES IN CHEMISTRY" Interested Candidates enroll their names to Dr. S. D. JADHAV, course Co-coordinator on or before 30th November 2023.



HOD

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YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD
Department of Chemistry
 Short Term Course
“Certificate Course in INSTRUMENTAL TECHNIQUES IN CHEMISTRY”
 Year 2023-24
Theory Time Table
Dec. 2023 to Jan.2024

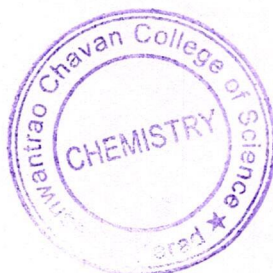
Lect. Time	THU	FRI	SAT
8.50-9.40	G30 SDJ	G30 GBD	G30 AVM
9.40-10.30	G30 UPL	G30 SDK	G30 RSP

Feb. 2024
Practical Time Table

Lect. Time	SAT
8.00-8.50	Practical Lab no. 3. AVM/SDJ/SDK/ UPL/GBD/RSP
8.50-9.40	
9.40-10.30	

- N.B. 1 Bracketed Numbers denotes Lecture Hall Numbers.**
2 All concerned should note and follow.
3. G: Lecture hall In Golden Jubilee Building

Course Coordinator

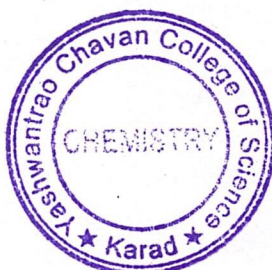


Head

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Yashwantrao Chavan College of Science, Karad
Department of Chemistry
Short Term Course
INSTRUMENTAL TECHNIQUES IN CHEMISTRY
M Sc -I Year-(2023-24)
List of Students Enrolled to Course

Roll. No.	Name of the Student	Sign
4201	Chalwade Avinash Anil	<u>Avinash</u>
4202	Chavan Radhika Rajendra	<u>Rhavan</u>
4203	Ubale Snehal Anil	<u>Ubale</u>
4204	Deshmukh Shivani Pradip	<u>DS</u>
4205	Gholap Ankita Kisan	<u>GAT</u>
4206	Shivadas Neha Tanaji	<u>N.T. Shivadas</u>
4207	Ingawale Dhanashri Kisan	<u>Ingawale</u>
4208	Jadhav Apurva Rajendra	<u>A.R. Jadhav</u>
4209	Jadhav Gargi Santosh	<u>GJadhav</u>
4210	Jadhav Pooja Dhanaji	<u>PJadhav</u>
4211	Jagtap Sanket Dipak	<u>SJagtap</u>
4212	kamble Avinash Kumar	<u>Kamble</u>
4213	Shinde Pooja Maruti	<u>Shinde</u>
4214	More Rohit Satish	<u>More</u>
4215	Padaval Yogesh Gajanan	<u>Padaval</u>
4216	Patil Komal Chandrashekhar	<u>Patil</u>
4217	Patil Pratiksha Mansing	<u>P.M. Patil</u>
4218	TandleJoshva Santosh	<u>Tandle</u>
4219	Yadav Rushikesh Ganesh	<u>Yadav</u>
4220	Patwekar Mohommadsajid Abdulkadar	<u>Patwekar</u>



[Signature]
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Department of Chemistry
Short Term Course
INSTRUMENTAL TECHNIQUES IN CHEMISTRY
M Sc-I Year-(2023-24)
Attendance Dec.2023

[illegible]

Yashwantrao Chavan College of Science, Karad
Department of Chemistry
Short Term Course
INSTRUMENTAL TECHNIQUES IN CHEMISTRY
M Sc-I Year-(2023-24)
Attendance Jan.2024

[illegible]

Yashwantrao Chavan College of Science, Karad
Department of Chemistry
Short Term Course
INSTRUMENTAL TECHNIQUES IN CHEMISTRY
M. Sc.-I Year-(2023-24)
Attendance Feb.2024

[illegible]

YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD
DEPARTMENT OF CHEMISTRY
M.Sc. - I (Analytical Chemistry)
“SHORT TERM COURSE INSTRUMENTAL TECHNIQUES IN CHEMISTRY”
Final Examination -2023-24

Date : 20/01/2020

Marks:30

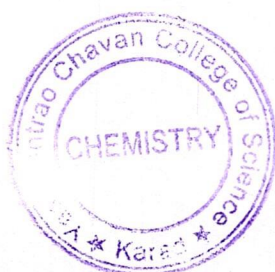
Time: 11.00am to 12.00pm

Instructions

1) All questions are compulsory

2) Each question carries two marks

1. The λ of σ to σ transition lies in the...
 a) IR region b) UV region c) visible region d) none of these
2. Which of the following is not an advantage of a photovoltaic cell used in Flame emission photometers?
 a) Portable b) No external supply c) Robust in construction d) Does not show fatigue
3. Select the wavelength range corresponding to UV Visible region.
 a) 400-800nm b) 200-800nm c) 600-800nm d) 200-400nm
4. The number of double bonds present in carotene is..
 a) 5 b) 10 c) 11 d) 18
5. Which of the following technique is associated with molecular emission?
 a) UV-Visible spectroscopy b) IR spectroscopy
 c) Fluorescence spectroscopy d) X-ray diffraction
6. Which of the following is not a detector used in Flame emission photometers?
 a) Photovoltaic cell b) Photronic cell c) Photoemissive cell d) Chromatogram
7. Phototubes are more sensitive than photovoltaic cells.
 a) True b) False
8. The Primary band in aromatic compounds are observed at
 a) 241 b) 215 c) 255 d) 184
9. Which of the following is not application of Flame emission photometers?
 a) Analysis of biological fluids b) Determination of Na, K in soil.
 c) Determination metals such as Mn, Cu. d) analysis of complex mixture
10. Total consumption burner, only samples of particular droplet size will enter the burner.
 a) True b) False
11. In flame emission photometers the measurement of ... is used for qualitative analysis.
 a) Colour b) Intensity c) Velocity d) Frequency
12. Laminar flow burner used in flame photometers is also known as
 a) Tubulent b) Premix c) Total consumption burner d) Nozzle mix burner
13. Which of the following advantage of prism monochromators?
 a) Dispersion is non-overlapping b) Dispersion occur in non-linear manner
 c) Dispersion is non-overlapping d) Dispersion occurs in a linear manner
14. Which of the following advantage of grating monochromators?
 a) Dispersion is non-overlapping b) Dispersion occur in non-linear manner
 c) Dispersion is non-overlapping d) Dispersion occurs in a linear manner
15. Which of the following molecule may show absorption in the IR region?
 a) N_2 b) H_2 c) CH_3-CH_3 d) None of these



[Signature]
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DEPARTMENT OF CHEMISTRY
M.Sc. - I (Analytical Chemistry)
"SHORT TERM COURSE INSTRUMENTAL TECHNIQUES IN CHEMISTRY"
Final Examination -2023-24

Date : 24/02/2020

Marks:30

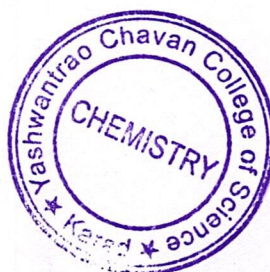
Time: 11.00am to 12.00pm

Instructions

1) All questions are compulsory

2) Each question carries two marks

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 a) Photovoltaic cell b) Photronic cell c) Photoemissive cell d) Chromatogram
2. Phototubes are more sensitive than photovoltaic cells.
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4. Total consumption burner, only samples of particular droplet size will enter the burner.
 a) True b) False
5. In flame emission photometers the measurement of ... is used for qualitative analysis.
 a) Colour b) Intensity c) Velocity d) Frequency
6. Laminar flow burner used in flame photometers is also known as
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 a) Dispersion is non-overlapping b) Dispersion occur in non-linear manner
 c) Dispersion is non-overlapping d) Dispersion occurs in a linear manner
9. Which of the following molecule may show absorption in the IR region?
 a) N₂ b) H₂ c) CH₃-CH₃ d) None of these
10. The λ of σ to σ^* transition lies in the...
 a) IR region b) UV region c) visible region d) none of these
11. Which of the following is not an advantage of a photovoltaic cell used in Flame emission photometers?
 a) Portable b) No external supply c) Robust in construction d) Does not show fatigue
12. Select the wavelength range corresponding to UV Visible region.
 a) 400-800nm b) 200-800nm c) 600-800nm d) 200-400nm
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YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD

Department of Chemistry

Short Term Course

"Certificate Course in INSTRUMENTAL TECHNIQUES IN CHEMISTRY"

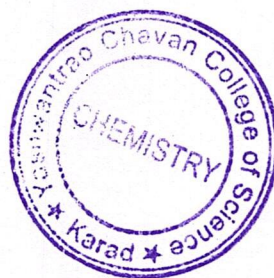
M. Sc-I (Year 2023-24)

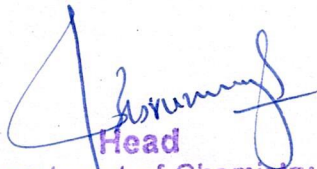
Sr. No.	Criteria	Excellent	Good	Average	Poor
1.	Curriculum Content		✓		
2.	Gratification about Lecture	✓			
3.	Gratification about Practical	✓			
4.	Hands on Training		✓		
5.	Knowledge get from the course		✓		
6.	The course if beneficial for Students and Parents	✓			

Name of the Student : Jadhav Pooja Dhangaji

Class : M.Sc-I

Signature : P.D. Jadhav




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Department of Chemistry

Short Term Course

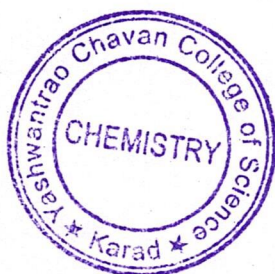
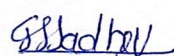
"Certificate Course in INSTRUMENTAL TECHNIQUES IN CHEMISTRY"

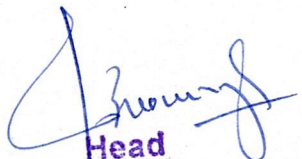
M. Sc-I (Year 2023-24) 34

Sr. No.	Criteria	Excellent	Good	Average	Poor
1.	Curriculum Content		✓		
2.	Gratification about Lecture	✓			
3.	Gratification about Practical	✓			
4.	Hands on Training		✓		
5.	Knowledge get from the course		✓		
6.	The course if beneficial for Students and Parents	✓			

Name of the Student : Jadhav Gargi Santosh

Class : MSc-I

Signature : 


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YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD

Department of Chemistry

Short Term Course

“Certificate Course in INSTRUMENTAL TECHNIQUES IN CHEMISTRY”

M. Sc-I (Year 2023-24) - 24p

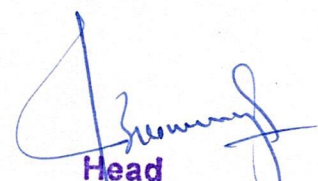
Sr. No.	Criteria	Excellent	Good	Average	Poor
1.	Curriculum Content	✓			
2.	Gratification about Lecture		✓		
3.	Gratification about Practical			✓	
4.	Hands on Training		✓		
5.	Knowledge get from the course	✓			
6.	The course if beneficial for Students and Parents	✓			

Name of the Student : Patil Komal Chandrashekhar

Class : M.Sc I

Signature : Patil




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YASHWANTRAO CHAVAV COLLEGE OF SCIENCE, KARAD

Department of Chemistry

Short Term Course


"Certificate Course in INSTRUMENTAL TECHNIQUES IN CHEMISTRY"

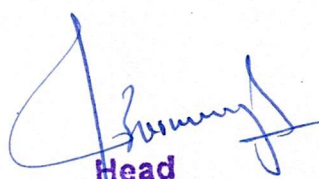
M. Sc-I (Year 2023-24)

Sr. No.	Criteria	Excellent	Good	Average	Poor
1.	Curriculum Content	✓			
2.	Gratification about Lecture	✓			
3.	Gratification about Practical	✓			
4.	Hands on Training	✓			
5.	Knowledge get from the course	✓			
6.	The course if beneficial for Students and Parents	✓			

Name of the Student : More Rohit Satish

Class : M.Sc.I Chemistry (Organic)

Signature : 


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YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD

Department of Chemistry

Short Term Course

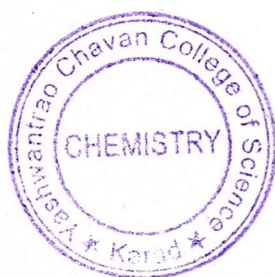
"Certificate Course in INSTRUMENTAL TECHNIQUES IN CHEMISTRY"

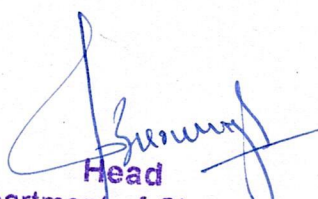
M. Sc-I (Year 2023-24)

Sr. No.	Criteria	Excellent	Good	Average	Poor
1.	Curriculum Content	✓			
2.	Gratification about Lecture	✓			
3.	Gratification about Practical	✓			
4.	Hands on Training	✓			
5.	Knowledge get from the course	✓			
6.	The course if beneficial for Students and Parents	✓			

Name of the Student : Jagtap Sanket

Class : M.Sc-I Analytical chemistry.

Signature : SDF Jagtap


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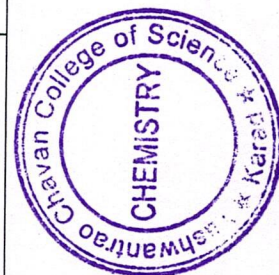
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Department of Chemistry

Short term Course - - "INSTRUMENTAL TECHNIQUES IN CHEMISTRY" (2023-24)

Mark List

Sr. No.	Name of the Student	Mid term	Final	Practical	Total
1	Chalwade Avinash Anil	24	25	40	89
2	Chavan Radhika Rajendra	24	25	40	89
3	Deshmukh Komal Vishwanath	24	25	40	89
4	Deshmukh Shivani Pradip	24	24	40	88
5	Gholap Ankita Kisan	23	24	40	87
6	Ghorpade Shubhangi Sameer	24	24	40	88
7	Ingawale Dhanashri Kisan	25	25	40	90
8	Jadhav Apurva Rajendra	25	24	40	89
9	Jadhav Gargi Santosh	24	24	40	88
10	Jadhav Pooja Dhanaji	25	25	40	90
11	Jagtap Sanket Dipak	23	23	40	86
12	kamble Avinash Kumar	24	24	40	88
13	Mane Ashish Suresh	24	24	40	88
14	More Rohit Satish	23	24	40	87
15	Padaval Yogesh Gajanan	26	24	40	90
16	Patil Komal Chandrashekhar	23	25	40	88
17	Patil Pratiksha Mansing	24	24	40	88
18	Patil Saurabh Vikas	24	24	40	88
19	Patil Swayam Vikas	25	26	39	88
20	Patwekar Mohommasajid Abdulkadar	22	20	35	77

Result Analysis	% of students above 60% of final Exam marks+ Practical Exam	% of students above 80% of mid course Exam marks+ Practical Exam
	95%	75%



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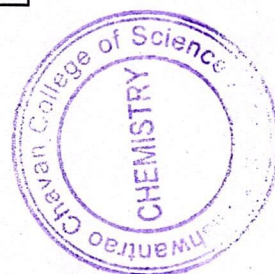
Short term Course - "INSTRUMENTAL TECHNIQUES IN CHEMISTRY" (23-24)

CO & PO attainment

Course code	Course Title	% of students above 60 % of Final exam marks	Level of attainmentFinal exam	80% of attainment Level in Final exam (I)	% of students above 80 % of mid-course exam marks	Level of attainment	20% of attainment Level in mid-course exam (II)	Average Attainment	Target Attainment level	Remark
Short term	Chemical risk management	95.00	3	2.4	75.00	3	0.6	3	Level 5	Target achieved

By using below attainment levels 1,2,3 for the Percent of students in B	
For internal exam	
Level 1	Less than 60% of students scoring more than average marks
Level 2	60% - 80% of students scoring more than average marks
Level 3	more than equal to 80% of students scoring more than average marks

Programme outcome level	Target Attainment
Level 1	0.5-1.0
Level 2	1.0-1.5
Level 3	1.5-2.0
Level 4	2.0-2.5
Level 5	2.5-3.0



(Signature)
Head of Chemistry

Yashwantrao Chavan College of Science, Karad

YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD

DEPARTMENT OF CHEMISTRY
“SHORT TERM COURSE INSTRUMENTAL TECHNIQUES IN CHEMISTRY”
Practical Examination -2023-24

Date :

Marks:40

Time:

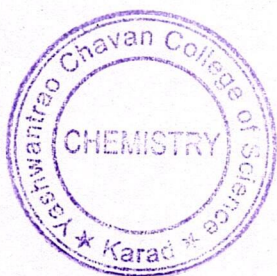
Instructions

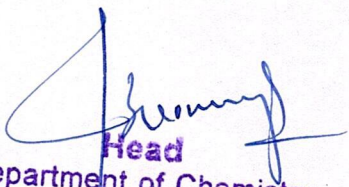
1. All questions are compulsory.
2. Figure to the right indicates full marks.

Q.1 Spectroscopic analysis of potassium permanganate solution. 15

Q.2 To determine concentration of dye using UV-Visible spectroscopy. 15

Q.3 Oral 10

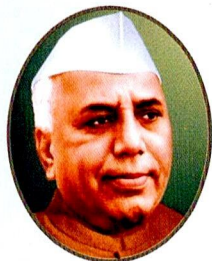



Head
Department of Chemistry
Yashwantrao Chavan College of
Science, Karad

Estd.:

1958

|| Be one with the downtrodden and the underprivileged ||

Shri Shivaji Education Society, Vidyanagar, Karad
Board for Higher Education's, Vidyanagar Karad's**Yashwantrao Chavan College of Science, Karad**

- Vidyanagar, Karad - 415 124.
- Reaccredited B++ Level by NAAC, Bangalore.
- An ISO 9001 : 2015 Certified College



Short Term Course

Certificate of Completion

This is to certify that Mr./Miss. More Rohit Satish
of Class M. Sc. I has Completed Short Term Course (3 Months) in Instrumental Techniques in Chemistry. conducted by the department of Instrumental Techniques in Chemistry.
during the academic year 2023 - 2024

Course Co-ordinator

Head of the Department

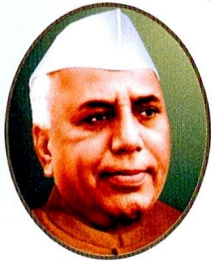
IQAC Co-ordinator

Principal

Estd.:

1958

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Board for Higher Education's, Vidyanagar Karad's**Yashwantrao Chavan College of Science, Karad**

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Short Term Course

Certificate of Completion

This is to certify that Mr./Miss. Jagtap Sanket Dipak
of Class M. Sc-1 has Completed Short Term Course (3 Months) in Instrumental Techniques in Chemistry conducted by the department of Instrumental Techniques in Chemistry during the academic year 2023 - 2024


Course Co-ordinator


Head of the Department


IQAC Co-ordinator


Principal

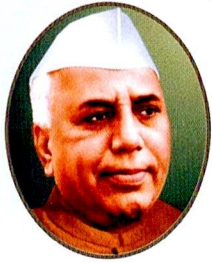
Estd.:

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Shri Shivaji Education Society, Vidyanagar, Karad
Board for Higher Education's, Vidyanagar Karad's

Yashwantrao Chavan College of Science, Karad



- Vidyanagar, Karad - 415 124.
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- An ISO 9001 : 2015 Certified College



Short Term Course Certificate of Completion

This is to certify that Mr./Miss. Ubale Snehal Anil
of Class M. Sc.-I has Completed Short Term Course (3 Months) in _____
Instrumental Techniques in Chemistry conducted by the department of _____
during the academic year 2023 - 2024

Course Co-ordinator

Head of the Department

IQAC Co-ordinator

Principal

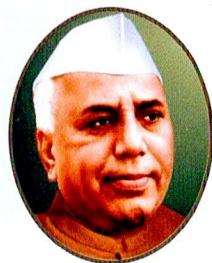
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Short Term Course Certificate of Completion

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of Class M. Sc. I has Completed Short Term Course (3 Months) in Instrumental Techniques in chemistry conducted by the department of Instrumental Techniques in chemistry during the academic year 2022 - 2024


Course Co-ordinator


Head of the Department


IQAC Co-ordinator


Principal

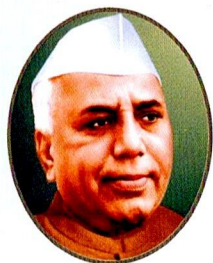
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|| Be one with the downtrodden and the underprivileged ||

Shri Shivaji Education Society, Vidyanagar, Karad
Board for Higher Education's, Vidyanagar Karad's

Yashwantrao Chavan College of Science, Karad



- Vidyanagar, Karad - 415 124.
- Reaccredited B++ Level by NAAC, Bangalore.
- An ISO 9001 : 2015 Certified College



Short Term Course Certificate of Completion

This is to certify that ~~Mr.~~/Miss. Shinde Pooja Maruti
of Class M. Sc. I has Completed Short Term Course (3 Months) in _____
Instrumental Techniques in chemistry conducted by the department of _____
_____ during the academic year 2023 - 2024

Course Co-ordinator

Head of the Department

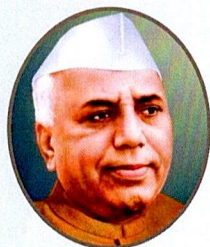
IQAC Co-ordinator

Principal

Estd.:

1958

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Short Term Course

Certificate of Completion

This is to certify that Mr./Miss. JADHAV POOJA DHANAJI
of Class M. Sc - I has Completed Short Term Course (3 Months) in _____
Instrumental Techniques in chemistry conducted by the department of
chemistry during the academic year 2022 - 2024


Course Co-ordinator


Head of the Department


IQAC Co-ordinator


Principal

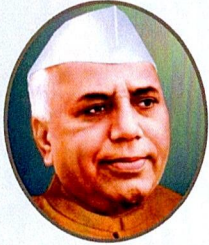
Estd.:

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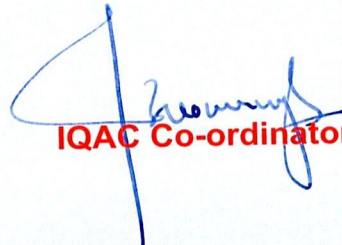


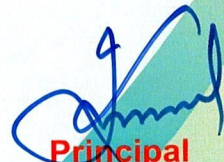
Short Term Course Certificate of Completion

This is to certify that Mr./Miss. TANDLE JOSHVA SANTOSH
of Class M.Sc-I has Completed Short Term Course (3 Months) in _____
Instrumental Techniques in chemistry conducted by the department of
chemistry during the academic year 2022 - 2024


Course Co-ordinator


Head of the Department


IQAC Co-ordinator


Principal

Estd.:

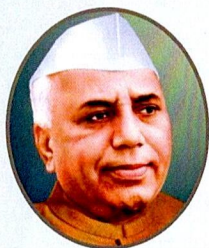
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Short Term Course Certificate of Completion

This is to certify that Mr./Miss. KAMBLE AVINASH KUMAR
of Class M₀SCo-I has Completed Short Term Course (3 Months) in _____
Instrumental Techniques in chemistry conducted by the department of
chemistry during the academic year 2023 - 2024


Course Co-ordinator


Head of the Department


IQAC Co-ordinator

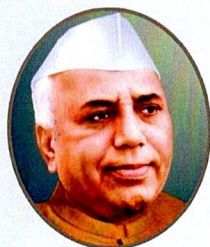

Principal

Estd.:

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**Short Term Course**
Certificate of Completion

This is to certify that Mr./Miss. CHAVAN RADHIKA RAJANDRA
of Class Ms Sc.-I has Completed Short Term Course (3 Months) in _____
Instrumental Techniques in chemistry conducted by the department of
chemistry during the academic year 2023 - 2024

Course Co-ordinator

Head of the Department

IQAC Co-ordinator

Principal

Estd.:

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**Short Term Course**
Certificate of Completion

This is to certify that Mr./Miss. GOLAP ANKITA KISAN
of Class Mo.Sco-I has Completed Short Term Course (3 Months) in _____
Instrumental Techniques in chemistry conducted by the department of
chemistry during the academic year 2023 - 2024

Course Co-ordinator
Head of the Department
IQAC Co-ordinator
Principal