

## 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

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Department of Chemistry
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Chavan 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 Cocoordinator on or before 30<sup>th</sup> November 2023.

Chavan College Of Society CHEMISTRY CHEMISTRY

HOD

Head Chemistry
Department of Chemistry
Department of Chevan College of

#### YASHWANTRAO CHAVAV 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-	G30	G30	G30
9.40	SDJ	GBD	AVM
9.40-	G30	G30	G30
10.30	UPL	SDK	RSP

Feb. 2024 Practical Time Table

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

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

CHEMISTRY COINTRICT OF CHEMISTRY

Department of Chemistry
Yashwantrao Chavan College of
Science, Karad

Head

#### 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

Name of the Student	Sign
Chalwade Avinash Anil	Avinasty
Chavan Radhika Rajendra	Phavan,
Ubale Snehal Anil	Rebale:
Deshmukh Shivani Pradip	B
Gholap Ankita Kisan	GALO
Shivadas Neha Tanaji	N.T. Shivadas
Ingawale Dhanashri Kisan	<u>GRWGE</u>
Jadhav Apurva Rajendra	A.R. Jodhav
Jadhav Gargi Santosh	G&ladbav_
Jadhav Pooja Dhanaji	PD todhal
Jagtap Sanket Dipak	SOUT
kamble Avinash Kumar	familie
Shinde Pooja Maruti	anthinas
More Rohit Satish	Ance
Padaval Yogesh Gajanan	Maderal
Patil Komal Chandrashekhar	Pattil
Patil Pratiksha Mansing	P.m. Patil
TandleJoshva Santosh	fondale
Yadav Rushikesh Ganesh	Findale Fierry
Patwekar Mohommadsajid Abdulkadar	Pus
	Chavan Radhika Rajendra Ubale Snehal Anil Deshmukh Shivani Pradip Gholap Ankita Kisan Shivadas Neha Tanaji Ingawale Dhanashri Kisan Jadhav Apurva Rajendra Jadhav Gargi Santosh Jadhav Pooja Dhanaji Jagtap Sanket Dipak kamble Avinash Kumar Shinde Pooja Maruti More Rohit Satish Padaval Yogesh Gajanan Patil Komal Chandrashekhar Patil Pratiksha Mansing TandleJoshva Santosh Yadav Rushikesh Ganesh Patwekar Mohommadsajid

Chavan College of Scientific Karad \*

Department of Commission Yau.... ntrao chavan College of Science, Karad

#### Yashwantrao Chavan College of Science, Karad **Department of Chemistry Short Term Course**

#### INSTRUMENTAL TECHNIQUES IN CHEMISTRY M Sc-I Year-(2023-24)

				r-(2023-2							
		Atte	endance	e Dec.20	023						
Roll. No.	Name of the Student										
4201	Chalwade Avinash Anil	Apries	L	Magaz	Amas	Trings	( Arivasi	Bignest	Mina,	Dinash	-
4202	Chavan Radhika Rajendra	Charif	Charac.	Chair	Plana	Chavan	@havar	Plane	( avar	Plavan	
4203	Ubale Snehal Anil	Calcula Calcula	Male	Signe	Signic	S Jack	a sold	and of	A CONTRACTOR OF THE CONTRACTOR	all the second	
4204	Deshmukh Shivani Pradip	PS	23	28	128	28	DS	128	03	ny	
4205	Gholap Ankita Kisan	Coff	CAM	cate	lest	CAK	anto	bat	BAIC	CALC	
4206	Shivadas Neha Tanaji	Jude	N. Taliko	Winder	Dindo	Lindas	Shide	H.T. dahada	Minder	P. Bulde	
4207	Ingawale Dhanashri Kisan	A Count	Burk	Butte	Strille	Baidle	Bank	So wite	Quite	Rolle	
4208	Jadhav Apurva Rajendra	o Tools	Tuck	Tolly.	R. Joseph	O Tolka	& Xulla	Tollar	A.R. Techto	A.A. Toolha	Ŋ
4209	Jadhav Gargi Santosh	Michael	Madra	(Aladad)	Mackey	Madra	(S)Lodfal	Madra	Adadra	Media	
4210	Jadhav Pooja Dhanaji	Help	Wedler .	Diddled.	00 de drei	DO Jedhed	ontalle	OT July	Nedha	6 Delcales	*
4211	Jagtap Sanket Dipak	50A	SOF	SDA	SDP	SPE	SDA	SDE	SDA	SW	
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4218	TandleJoshva Santosh	Jarobe	Jardot	Sandale		andale	7	4	prinda		?
4219	Yadav Rushikesh Ganesh	Perry	Leisy	Pary	Resset .	Brug	Resey	Reey &	Feary.	Reella	
4220	Patwekar Mohommadsajid Abdulkadar	PM	m	Pry	Pm	Ph	fry	Puz :	Pry 1	Pm	
									11.		

#### 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

		7 1 1 1 1 1	uante	Jan.20	4-					
Roll. No.	Name of the Student							,		
4201	Chalwade Avinash Anil	Thank	Minda	Kiras	Ninash	Pinast	Ni was	Winask	Chrones	Wiyas
4202	Chavan Radhika Rajendra	(Phova D	Phavan	Phovon.	Phovun	Phaven	Phoun	Phova	Phavo D.	
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4204	Deshmukh Shivani Pradip	N	13	128	28	128	ps	DS.	<b>D</b> 8	123
4205	Gholap Ankita Kisan	BALO	CoAt	RAPO	GAC	BAR	Coft	COALC	GAL	GAL
4206	Shivadas Neha Tanaji	Mandal	Minde	Minda	divide	Dudge	Dintol	A dinder	Mireday	Jodes
4207	Ingawale Dhanashri Kisan	Stute	State	Bath	Stark	Some	Shire	Bride	Stutte	Staire
4208	Jadhav Apurva Rajendra	A.R.Jada	A.R. Todhal	o R Jadhav	R. Vallay	otochov	Didlay	0.700	o toolbo	- A Trolle
4209	Jadhav Gargi Santosh	Maltali	Black	Machae	Madrail	Sadifa	Main	Mad Red	(Malha)	Bladha
4210	Jadhav Pooja Dhanaji	N. Jak	200	CO Color		C Bal	O May	20 pm	A STAN	S JAN
4211	Jagtap Sanket Dipak	SOR	508	-807	500	SDR	SOOR	6000	CDE	2001
4212	kamble Avinash Kumar	Server	*due	headhre.	e carre	Mag	Mary	Marris	escrip.	some of
4213	Shinde Pooja Maruti	gretind	Maride .	and inde	Mahinde		while	mhinde	andinde	ambade
4214	More Rohit Satish	B		P	P	B	@	P		
4215	Padaval Yogesh Gajanan	Partie	Ypadeal	Dodes	realed	( Padarol	Padwal.	Gadwal	budual	(ondial
4216	Patil Komal Chandrashekhar	Boil	Activ		The state of the s	The	and the same	(E)	ALL Y	NED
4217	Patil Pratiksha Mansing	them	'm Publ	mifath	m Potta	math	m Path	neal	- 201	OV.
4218	TandleJoshva Santosh	andok	andal		anolde	Sandale	canode	Sandal	andate	Am Path
1219	Yadav Rushikesh Ganesh	Reey	Ley	Redy	Perry 2	Ruy	Pury	Resy &	Reary 1	Joen
4220	Patwekar Mohommadsajid Abdulkadar	gm	Pras	Pm!	Phs	Pun	Ph	Pm	Pine !	Piac

# 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

				1.00.20						
Roll. No.	Name of the Student	7 <sub>2</sub> 8								
4201	Chalwade Avinash Anil	Linnage	Curasy	( June Blan	Alinas	Die Ass	Kunash	Kyloady	K. Lucian	Kinak
4202	Chavan Radhika Rajendra	Charal	Chavon	Paral	Davar	Plant	Marian	Playor	Plavan	Morun
4203	Ubale Snehal Anil	SAME	Sed 2	(deals)	Walter.	Made:	a lake	Wale.	a Mark	Chale
4204	Deshmukh Shivani Pradip	ns	D8	08	NS.	128	NB	DS.	Ps	ns
4205	Gholap Ankita Kisan	an	-GH	BAD	OFF	bat	BAL	lon	Cott	6AL
4206	Shivadas Neha Tanaji	Mirke	Dividus	Minde	Direct	Mindal	Sindag	Minder.	Mudos	A Cold
4207	Ingawale Dhanashri Kisan	Butte	Brite R. Fredher	State	Book	Boute	Boote	a soft	Boots	Rutte
4208	Jadhav Apurva Rajendra	O.R. Market	R. S. Sudden	A.R. Todlar	A.D. Todla	Todlage	~ Acher	Todha	adhai	D.R. Todhod
4209	Jadhav Gargi Santosh	o North	( Strake	(Badha	Madra	Modra	& Scaling	Modro	Station	Section
4210	Jadhav Pooja Dhanaji	THE STATE OF THE S	or deltas	a Likelled	Walded .	2. Dibley	P.W.Jadlav	A Jedley	O Deledhed	Madal
4211	Jagtap Sanket Dipak	500	800	. SDE	S100	SOR	BOD	500	SDA	80P
4212	kamble Avinash Kumar	March 9	Manuel	Chr.S.	earline.	Market .	- Silve	Canine	Scrow's	acre!
4213	Shinde Pooja Maruti	ardire	andinde	Amhinda	Andricale	Modirale	2 red inde	Amelicale	Modural	Marching
4214	More Rohit Satish	D	OF DE				2		P	P
4215	Padaval Yogesh Gajanan	Freder	1 Andres	Padio	Pudicol	Paderal	Jeudwol	(pudice)	Bateal	Pado
4216	Patil Komal Chandrashekhar		No.	STATE OF THE PERSON OF THE PER		AND .	NO THE REAL PROPERTY.	Sept	THE STATE OF THE S	AND THE
4217	Patil Pratiksha Mansing	mist		p.m.Pel	Empate	Fivn Patr	m Part	PmPatt	Pm Robil	empate
4218	TandleJoshva Santosh	3 rdel	Sordale	ancho	andel	andale	Surchale	anto	Condole	
4219	Yadav Rushikesh Ganesh	kuy.	Levy	Levy	Levy	Levey	Coup	Perly	Rely	Recey
4220	Patwekar Mohommadsajid Abdulkadar	fu	9m	Pm	fm	Kns	Pm	Im	Pus	Pian

## 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 $\lambda$ of $\sigma$ to $\sigma$ 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) Photovaltaliccell 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 comsumtion burner, only samples of particular droplet size will enter the burner.
a)True b) False
11.In flame emmisoin photometers the measurments of is used for qualitative analysis.
a)Colour b) Intensity c) Velosity 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 –liner 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 –liner 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
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## 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: 24/02/2020 Marks:

Date: 24/02/2020	Marks:30
Time: 11.00am to 12.00pm	111111111111111111111111111111111111111
Instructions	
1) All questions are compulsory	
2) Each question carries two marks	
1. Which of the following is not a detector used in Flame emission photometers?	
a) Photovaltaliccell b) Photronic cell c) Photoemissive cell d) Chroma	
2. Phototubes are more sensitive than photovoltaic cells.	atogram
a) True b) False	
3. Which of the following is not application of Flame emission photometers?	
a) Analysis of biological fluids  b) Determination of Na. K in soi	
a) Analysis of biological fluids b) Determination of Na ,K in soi	l.
c) Determination metals such as Mn, Cu. d) analysis of complex mixture	
4. Total comsumtion burner, only samples of particular droplet size will enter the burn	ner.
a)True b) False	
5.In flame emmisoin photometers the measurments of is used for qualitative analysts	sis.
a)Colour b) Intensity c) Velosity d) Frequency	
6.Laminar flow burner used in flame photometers is also known as	
a) Tubulent b)Premix c)Total consumption burner d) Nozzle mix bu	rner
7. Which of the following advantage of prism monochromators?	
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c) Dispersion is non-overlapping d) Dispersion occurs in a linear manner	
o. which of the following advantage of grating monochromators?	
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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?	
10. The $\lambda$ of $\sigma$ to $\sigma$ transition lies in the  d) None of these	
a) IR region b) UV region c) visible region d) none of these	
11 Which of the following is not an advantage of the following is not advantage of	
11. Which of the following is not an advantage of a photovoltaic cell used in Flan photometers?	ne emission
a) Portable b) No external supply c)Robust in construction d) Does not sho	w fatigue
12. Select the wavelength range corresponding to UV Visible region.	
a) 400-800nm b) 200-800nm c) 600-800nm d) 200-400	nm
13. The number of double bonds present in carotene is	
a) 5 b) 10 c) 11 d) 18	
14. Which of the following technique is associated with molecular emission?	
a) UV-VISIBLE spectroscopy b) IR spectroscopy	
c) Fluorescence spectroscopy d) X-ray diffraction	
15. The Primary band in aromatic compounds are observed at	
a) 241 b) 215 c) 255 d) 184	
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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				1,001
	Content				
2.	Gratification				
	about Lecture				
3.	Gratification				
	about Practical				
4.	Hands on				
	Training				
5.	Knowledge get				
	from the course		1		
6.	The course if				
	beneficial for				
	Students and	1			
	Parents				

Name of the Student: Jadhav Poota Dhanati'
Class: M.SC-T
Signature: Podedhav

## 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	di Seri yangai ya	1		
6.	The course if				
	beneficial for				
	Students and				
	Parents				

Name of the Student: Jadhau Gargi Santosh

Class: MSC-I

Signature: Shadhov

#### 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)-246

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.SCI

Signature:

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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	1			
	about Lecture				
3.	Gratification	1			
	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 Chemisty (organic)

Signature:

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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: Jaytop Sanket

Class:

M.sc-I Analytical chemistry.

Signature:

# Yashwantrao Chavan College of Science, Karad Department of Chemistry Short term Course - - "INSTRUMENTAL TECHNIQUES IN CHEMISTRY" (2023-24)

Sr. No.	Name of the Student	Mid term	Final	Practical	Total
	Chalwade Avinash Anil	70	30	1 I actical	IOIAI
		+7	67	40	68
7	Chavan Radhika Rajendra	24	25	40	68
3	Deshmukh Komal Vishwanath	24	25	40	68
4	Deshmukh Shivani Pradip	24	24	40	88
2	Gholap Ankita Kisan	23	24	40	87
	Ghorpade Shubhangi Sameer	24 .	24	. 40	88
	Ingawale Dhanashri Kisan	25	25	40	06
<b>∞</b>	Jadhav Apurva Rajendra	25	24	40	68
6	Jadhav Gargi Santosh	24	24	40	88
10	Jadhav Pooja Dhanaji	25	25	40	.06
	Jagtap Sanket Dipak	23	23	40	98
[2	kamble Avinash Kumar	24	24	40	88
13	Mane Ashish Suresh	24	24	40	88
4	More Rohit Satish	23	24	40	87
15	Padaval Yogesh Gajanan	26	24	40,	06
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 Mohommadsajid	22	20	35	77

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

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# Yashwantrao Chavan College of Science, Karad

# Department of Chemistry

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

# CO & PO attainment

emark	Target achieved	ainment of rse(I+II)	
ent Re		Att	3
Target Attainment Remark level Level 5 Target achieved		20% of attainment Level in mid-course exam (II)	9.0
Average Attainment	3	Level of a	C
		% of students above 80 % of mid-course exam marks	75.00
		80% of attainment Level in Final exam (I)	2.4
CO & PO attainment		Level of attainmentFinal exam	3
00		% of students above 60 % of Final exam marks	95.00
		Course Title	Chemical risk management
		Course	Short term

	For internal exam
evel	Level   Less than 60% of students scoring more than average
	marks
evel	Level 60% - 80% of students scoring more than average
	marks
evel	Level more than equal to 80% of students scoring more
~	than average marks

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



Science

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#### 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

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Chavan College CHEMISTRY & Karac + A

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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.

Reaccredited B<sup>++</sup> Level by NAAC, Bangalore.
 An ISO 9001 : 2015 Certified College



1958



# Short Term Course Certificate of Completion

This is to certify that Mr./Mss. More Rout satish	
of Class has Completed Short Term Course (3 Months) in	
Instrumental techniques in chemistry. conducted by the dep	partment of
during the academic year 2023 - 2024	

Course Co-ordnator

Head of the Department

IQAC Co-ordinator

Principal

Course Co-ordnator

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

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# Short Term Course Certificate of Completion

This is to certij	fy that Mr./Malss.	Jagtap	Sanket	Dipak	
of Class	Sc-1 has	s Completed Short	t Term Course (3	Months) in	
Instrume	ntal tech	niques in c	hemistry	conducted by the	department of
	during the	academic year 20	23 - 2024		

Head of the Department

**IQAC** Co-ordinator

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# Short Term Course Certificate of Completion

This is to certify that Mr./Miss. Ubale Snehal Anil	
of Class has Completed Short Term Course (3 Months) in	
Instrumental techniques in chemistry conducted by the depart	rtment of
during the academic year 2023 - 2024	

Course Co-ordnator

Head of the Department

IQAC Co-ordinator

Principal

Course Co-ordnator

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# Short Term Course Certificate of Completion

This is to certify that Mr./Miss. 100	thav Apurva	Rajen	dra
of Class M. Sc. 1 has Comp	oleted Short Term Cour	se (3 Months	) in
Instrumental Technia	jues in chemi	istry co	nducted by the department of
during the acader	nic year 2023 - 2024	,	
		<b>N</b>	^

Head of the Department

IQAC Co-ordinator

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# Short Term Course Certificate of Completion

This is to certify that M	r./Missshinde	Pooja Ma-	ruti
of Class M. Se. 1	has Completed Sh	ort Term Course (3 Mc	onths) in
Instrumental	Techniques i	n chemistry	_ conducted by the department of
d	uring the academic year	2023 - 2024	
	λ	· 1	9/

Course Co-ordnator

Head of the Department

IQAC Co-ordinator

Principal

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This is to certify that Mr./Mi	iss. JADHAY POO	CLANAHO ALO		
of Class MoSCo-I	has Completed Short	Term Course (3 Mon	nths) in	_
Instrumental T	eehniques in	chemistre	conducted by the department of	of
chemistry during	the academic year 202	2-2024		
		$\lambda$	9/1	
SW	I howany	IQAC Co-o	rdinator	

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This is to certify that Mr./Miss. TANDLE JOSHYA SANTOSH
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-ordnator Head of the Department IQAC Co-ordinator Principal

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This is to certify that N	Ar./Miss. KAMBLE A	YINASH KUMAR	
M.CCT	has Completed Short T	erm Course (3 Months) in	
Instrumental	techniques in e	conducted conducted	d by the department of
chemistry	during the academic year 2020	3-2024	
Course Co-ordnator	Head of the Department	IQAC Co-ordinator	Principal

 $\scriptstyle\rm II$  Be one with the downtrodden and the underprivileged  $\scriptstyle\rm II$ 

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This is to certify that Mr./Miss. CHAVAN RADHIKA RAJANDRA
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 2022 - 2024
1
Light the Department IQAC Co-ordinator Principal
Course Co-ordnator Head of the Department

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This is to certify that N	Ar./Miss. GOLAP ANK	ITA KISAN	-/
of Class Mosco-I		rm Course (3 Months) in _	
Instrumental	Techniques in el	nemistry conduct	ed by the department of
chemistry	during the academic year 2013	- 2024	
	1	$\lambda$	9/1
EN.	Just the Dorpartment	IOACI Co-ordinator	Principal