

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





YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD

DEPARTMENT OF CHEMISTRY

SHORT TERM COURSE

PREPARATION OF HOUSEHOLD CHEMICALS

2022-23

Index

Total Students: 43 Class: M. Sc. II Duration: 03 Months Course Code: CCE-06

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Il Be One with the downtrodden and the underprivileged Il Shri Shiyaji Education Society Karad, Board For Higher Education's

YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD

Vidyanagar, KARAD - 415 124 Dist. Satara (Maharashtra)

2 02164 - 271356, Fax: 02164-271356, e-mail: ychavan@bsnl.in, prinyccsk@gmail.com

Reacredited B Level by NAAC, Bangalore
AN ISO 9001-2008 CERTIFIED COLLEGE REG. NO.: RQ91/5237

Department of Chemistry Certificate course

In

"PREPARATION OF HOUSEHOLD CHEMICALS"

Year 2022-23 Board of Studies (BOS)

Date: 07 /11/2022

Certificate Course in "PREPARATION OF HOUSEHOLD CHEMICALS" will start in the Department of Chemistry, Yashwantrao Chavan College of Science, Karad. As per the decision made by the CDC and IQAC, a BOS of Chemistry compositions is as follows,

Board of Studies (BOS) members

Sr. No.	Name of the Member	Designation	Sign
1	Principal Dr. S. B. Kengar	Chairman	June.
2	Dr. G. G. Potdar	IQAC Coordinator	pille
3	Prof. Dr. S. H. Burungale	Head of the Department	Johnson
4	Mrs. S. B. Shete	Course Coordinator	shetess



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DEPARTMENT OF CHEMISTRY

Year 2022-23

Syllabus Approved Letter

The IQAC Committee has approved the syllabus of the short-term course to be conducted by the Department of Chemistry.

Sr. NO.	Name of The Course	Type of the Course
1.	Preparation of Household Chemicals	Short-term Course

Course Co-Ordinator

Coordinator

HOD Principal

Head Yashwantrau Chavan College of Scien

Department of Chemistry Yashwantrao Chavan College of Science, Karad

Internal Quality Assurance Cell (IQAC),
Yashwantrao Chavan College
of Science, Karad

(2)

Yashwantrao Chavan College of Science, Vidyanagar, Karad

(AFFILIATED TO SHIVAJI UNIVERSITY, KOLHAPUR)

Department of Chemistry

Certificate course

In

"PREPARATION OF HOUSEHOLD CHEMICALS"

Course Code: CCE-06



Sr No	Course	Class Enrolled	Title of Course	
1	Dr. Kishor Sambhaji	M. Sc. II	Short-term course on	
1	Jagadhane Jagadhane	171. 50. 11	Preparation of household	
			chemicals – M. Sc	
			II	

Syllabus Structure (UG)

Month	Credits (I credit = 20H)	Total marks
3	2	50

Course outcome:

- > To inspire the students towards entrepreneurship to survive independently for atmanirbhar Bharat which translates to 'self-reliant India',
- It is expected of the students to realize the subject's fundamentals, basic principles, concepts, and modern advances.
- To enhance comprehension of concepts, the practical course is related to the theory courses.

Program outcome:

- To promote student's entrepreneurship
- > Students will become familiar with basic concepts of the Preparation of household chemicals.
- To prepare students for further studies helping in their brightcareer in the subject.

Program specification outcome:

- > To develop skills required in various industries.
- To make the student knowledgeable with respect to the subject and its practicable applicability.



SYLLABUS

Course Code: CCE-06

Contact Hrs.: 24

UNITI

Introduction to Common Household Chemicals

Household chemicals: Outline of the history of the industry, Principles of Household Chemicals, Materials needed to make Household Products, and Manufacturing Processes in the Industry.

household products' roles in daily life.

UNIT II

Cleaning agents: Introduction, synthesis, and applications of Natural cleaning agents, cleaning action, Floor cleaner, Toilet Cleaner, Bathroom Cleaner, Kitchen Cleaner

UNIT III

The technology of Soap: Soap chemistry; selecting raw materials for the soap organization; hard fat- and oil-producing soaps; chemical reactions in soaps; Soaps, both hard and soft.

UNIT IV

Detergents and Surfactants: Introduction, Different terms used in cleaning products; Ingredients used to make detergents; the way detergents wash varieties of detergents the use of surfactants.



Recommended Books:

- 1. Small-scale industries and household industries in developing economy by Shetty M.C. (Unit I)
- 2. Manufacture of perfume cosmetics and detergents by Prasad Giri Raj (Unit V)
- 3. Industrial chemistry by B. K. Sharma (Unit I and II)
- 4. Flavors & Essential oils, Industries SBP Board (Unit III)
- 5. Perfumes soaps & cosmetics by Poucher. (Unit III)
- 6. Manufacture of perfumes, cosmetics and detergents by Giriraj Prasad (Unit IV)
- 7. Manufacture of perfumes, cosmetics, and detergents by Prasad. (Unit IV)

Learning Outcomes:

UNIT I

Introduction to Common Household Chemicals

- 1. Basic knowledge of household chemicals should be taught to the students.
- 2. Students should define household products and the different ways that they are made.
- 3. The preparations, reactions, and histories of common household chemicals should be explained by students.

UNIT II

Cleaning agents

- 1. The principles of various cleaning agents should be taught to the students.
- 2. Students should identify cleaning agents that are natural for floors, toilets, bathrooms, and kitchens.
- 3. The preparations and reactions of natural cleaning solutions for floors, toilets, bathrooms, and kitchens should be explained by students.

UNIT III

The technology of Soap

- 1. Students need to be learning soap technology.
- 2. Students should define liquid soap, hard soap, and soft soap.
- 3. Students should describe how soap is prepared and how liquid soap reacts.

UNIT IV

Detergents and Surfactants

- 1. Fundamentals of detergents and surfactants should be taught to the students.
- 2. Students need to define surfactants and detergents.
- 3. The preparations and different kinds of detergents and surfactants should be explained to the students.

Practical Course: Preparation of various household Products

Contact Hrs.: 48

- 1. Preparation of sanitary acid
- 2. Preparation of liquid soap
- 3. Preparation of white phenyl
- 4. Solid soap manufacture
- 5. Extraction of active principle of herbal products: Babul, Chandan, haldi, Jasmin, Reetha, and Neem.
- 6. Practical based on the preparation of various cosmetic products by using herbal principles: Shampoo and Mouth wash.

Project course: Project on household Chemicals

Yashwantrao Chavan College of Science, Karad Department of Chemistry

Short-term Course - Preparation of Household Chemicals (2022-23)

Course Code	Short Term	Course:	Preparat	Course: Preparation of Household Chemicals
Prepared by	Mrs. S. B. Shete		Date	2022-23
Target Gro	Target Group: M.Sc. II		,	
D::.	 Basic (10+2) knowledge of science faculty 	enowledge of	science f	àculty
requisites	 Good analytical skills 	al skills.		
requisites	 Basic knowledge regarding laboratory concepts. 	lge regarding	laborator	y concepts.
Course Outcomes	tcomes			
At the end	At the end of the course, the students should be able to:	nts should be	able to:	
CO1	To inspire the students towards entrepreneurship to surviv atmanirbhar Bharat which translates to 'self-reliant India',	s towards entr hich translate	epreneur s to 'self-	To inspire the students towards entrepreneurship to survive independently for atmanirbhar Bharat which translates to 'self-reliant India',
C02	To Understand the importance of chemicals day to day life	portance of ch	nemicals	day to day life
CO3	It is expected of the students to concepts, and modern advances.	udents to real advances.	ize the su	It is expected of the students to realize the subject's fundamentals, basic principles, concepts, and modern advances.
C04	To enhance comprehe courses.	nsion of conc	epts, the	To enhance comprehension of concepts, the practical course is related to the theory courses.

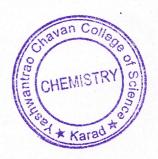


YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD Department of Chemistry

Notice

Date: 08/11/2022

All the Students of the B. Sc. III are hereby informed that the Department of Chemistry is going to run a short-term course entitled"PREPARATION OF HOUSEHOLD CHEMICALS" Interested Candidates enrol their names to Mrs. S. B. Shete (course Co-ordinator) on or before 30th November 2023.



YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD

Department of Chemistry

Short Term Course

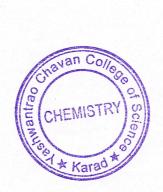
"Preparation of Household Chemicals"

Year 2022-23

.Name of the Enrolled Students

Roll No.	Name of Student
4201	Anuse Digvijay Dipak
4202	Bhingardeve Pratik Dhondiram
4203	Bhise Sangram Madhukar
4204	Chopdar Supriya Vijay
4205	Desai Pratiksha Manikrao
4206	Dugane Dhananjay Sadashiv
4207	Gangurde Kamlesh Gulab
4208	GhashiSwaliyaYusufali
4209	Gotal Jayesh Tanaji
4210	Gurav Pradnya Laxman
4211 · •	Jadhav Priyanka Mahadev
4212	Jadhav Shrutika Amrut
4213	Jagadale Priyanka Shamrao
4214	Jagtap Vaishnavi Prakash
4215	Kadam Esha Ramesh
4216	Kanase Digvijay Atul
4217	Karale Akshata Ananda
4218	Khawale Akash Sunil
4219	Kumbhar Prasad Pandurang
4220	Mahamuni Arati Vilas
4221	Mohite Tejashri Tanaji
4222	Mohite Viraj Ramchandra
4223	More Komal Pratap
4224	Mulla Dastagir Rafik
4225	Naikawadi Samir Shoukat
4226	Nikam Akshay Ashok
4227	Patil Amruta Ramesh
4228	Patil Mahek Sunil
4229	Patil Pooja Tanaji

4230 Patil Pratiksha Atmaram 4231 Patil Satyajit Dhanaji 4232 Patil Shubham Jaysing 4233 Rakate Nikita Ramesh 4234 Salunkhe Komal Sunil 4235 Salunkhe Rutuja Dhanaji 4236 Shant Sanika Sadashiv 4237 Shete Avadhut Ajit 4238 Shewale Sujata Shivaji 4239 Shinde Shubham Shivaji 4240 Takale Ajit Surendra
4231 Patil Satyajit Dhanaji 4232 Patil Shubham Jaysing 4233 Rakate Nikita Ramesh 4234 Salunkhe Komal Sunil 4235 Salunkhe Rutuja Dhanaji 4236 Shant Sanika Sadashiv 4237 Shete Avadhut Ajit 4238 Shewale Sujata Shivaji 4239 Shinde Shubham Shivaji
4232 Patil Shubham Jaysing 4233 Rakate Nikita Ramesh 4234 Salunkhe Komal Sunil 4235 Salunkhe Rutuja Dhanaji 4236 Shant Sanika Sadashiv 4237 Shete Avadhut Ajit 4238 Shewale Sujata Shivaji 4239 Shinde Shubham Shivaji
4233 Rakate Nikita Ramesh 4234 Salunkhe Komal Sunil 4235 Salunkhe Rutuja Dhanaji 4236 Shant Sanika Sadashiv 4237 Shete Avadhut Ajit 4238 Shewale Sujata Shivaji 4239 Shinde Shubham Shivaji
4234 Salunkhe Komal Sunil 4235 Salunkhe Rutuja Dhanaji 4236 Shant Sanika Sadashiv 4237 Shete Avadhut Ajit 4238 Shewale Sujata Shivaji 4239 Shinde Shubham Shivaji
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4237 Shete Avadhut Ajit 4238 Shewale Sujata Shivaji 4239 Shinde Shubham Shivaji
4238 Shewale Sujata Shivaji 4239 Shinde Shubham Shivaji
4239 Shinde Shubham Shivaji
4240 Takale Aiit Surandra
Taxate All Sulendra
4241 Taware Achal Vinayak
4242 Thorat Sayali Sunil
4243 Thorawade Ankita Amar



YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD Department of Chemistry

Short Term Course

"Preparation of Household Chemicals"

Year 2022-23

Theory Time Table

Dec. 2022 to Jan.2023

Lect. time	Friday	Saturday
9.40 - 10.30	KSJ	AVM



Yashwantrao Chavan College of Science, Karad

Department of Chemistry

Short Term Course

"Preparation of Household Chemical"

Year 2022-23

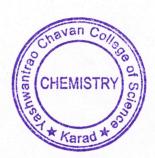
Date: 13/03/2023 Marks: 30 Day: Monday Time: 11 am to 12:30 pm									
Day: Monday	Time: 11 am to 12:30 pm								
Q.1) Multiple Choice Questions: (Marks: 1*5= i) Which of the following is the unit of concentration?									
i) Which of the following is the unit	of concentration?								
a) Normality	b) Molarity								
c) Molality	d) All of these								
ii) Metal ion acts as.									
a) Lewis base	c) Lewis's acid								
b) Lewis base and base	d) None								
iii)is the base according to Bro	onsted theory concept as well as Lewis's concept.								
a) NH ₃	b) NaOH								
c) C ₆ H ₅ OH	d) CH ₃ OH								
iv) $HNO_3 + NH_3 \longrightarrow NH_4^+ + NO_3$	³ in this reaction the conjugate base of nitric acid is								
a) NO ₃ -	b) NH ₄ ⁺								
c) NH ₁	d) HNO								
v) Equivalent weight of NaOH is									
a) 40	b) 50								
c) 30	d) 60								
Q.2) Answer the following question	ns (Any Two): (Marks: 2*5=10)								
i) Explain Bronsted-Lowry concept	of acid & Base.								
ii) Who will you prepare 1 litre of 0.	1 N NaOH Solution from 0.5 N NaOH Solution?								
iii) Explain in detail the concept of r	molarity.								

iv)Explain in detailthe concept of Normality.

Q.3) Explain in detail (Any Three):

(Marks:3*5=15)

- i) Explain the Arrhenius theory of acids and bases with a suitable example.
- ii)Explain Lewis theory of acids and bases with a suitable example.
- iii) ExplainBronsted-Lowry concept of acid & Base.
- iv) Who will you prepare 1 litter 0.1 N NaOH Solution from 0.5 NNaOH Solution?
- v) Explain in detail the concept of molarity.
- vi)Explain in detailthe concept of Normality.



Yashwantrao Chavan College of Science, Karad

Department of Chemistry

Short Term Course

"Preparation of Household Chemicals"

Year 2022-23

Practical Exam

Marks: 40

Instructions:

- 1. You are advised to express the results in tabular form
- 2.Draw neat labeled/circular diagrams wherever necessary
- 3. Take the signature of the examiner on experimental results

SECTION-A

[30 Marks]

- Q.1 Preparation of soap
- Q.2 Preparation of liquid soap
- Q.3 Preparation of Phenyl
- Q.4 Preparation of washing powder

SECTION - B

Oral

[10 Marks]



Yashwantrao Chavan College of Science, Karad Department of Chemistry

Short-term Course - Preparation of Household Chemicals(2022-23)

Mark list

exam (Out of 30) of 30) 21 22 22 25 25 21 21 20 21 24 25 25
19 27
21 28
21 26
17 24
21 25
71 76

8	84		88		08	8 8	58	8 8	. 00	76	67	95	00	87		81	85	00	2	98	08	67	0/	01	98	87	85	84
40	40		40		40	40	40	40	40	2	40	40	40	04		40	40	40		40	40	40	01	2	40	40	40	40
20	25		27		19	20	24	20	27		28	24	35	<u></u>		20	24	25		27	28	26	24	35	67	26	20	25
25	19		21		21	22	21	. 21	25		19	21	22	1		21	21	25		19	21	21	17	21	17 6	71	25	19
Jadhav Shrutika Amrut	Jagadale Priyanka	Silailifao	Jagtap Vaishnavi	Prakash	Kadam Esha Ramesh	Kanase Digvijay Atul	Karale Akshata Ananda	Khawale Akash Sunil	Kumbhar Prasad	Pandurang	Mahamuni Arati Vilas	Mohite Tejashri Tanaji	Mohite Virai	Ramchandra	ייייייייייייייייייייייייייייייייייייייי	More Komal Pratap	Mulla Dastagir Rafik	Naikawadi Samir	Shoukat	Nikam Akshay Ashok	Patil Amruta Ramesh	Patil Mahek Sunil	Patil Pooja Tanaji	Patil Pratiksha Atmaram	Dotil Cottonia Miliai alli	ratii Salyajii Dhanaji	Patil Shubham Jaysing	Kakate Nikita Ramesh
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35	4235 Salunkhe Rutuja	21	19	40	80
	Dhanaji				
4236	Shant Sanika Sadashiv	22	20	40	82
4237	Shete Avadhut Ajit	21	24	40	85
4238	Shewale Sujata Shivaji	21	20	40	81
4239	Shinde Shubham Shivaji	25	27	40	92
4240	Takale Ajit Surendra	19	28	40	87
4241	Taware Achal Vinayak	21	20	40	81
4242	Thorat Sayali Sunil	25	27	40	92
4243	Thorawade Ankita Amar	19	28	40	87





Principal
Yashwantrao Chavan College of Science
Karad

Yashwantrao Chavan College of Science, Karad

Average Attainment

Attainment level

Remark

Target

Level 5

Target achieved

Department of Chemistry

Short-term Course - Preparation of Household Chemicals (2022-23)

CO & PO attainment

Short term	Course
Chemical risk management	Course Title
93.00	% of students above 60 % of Final exam marks
ω.	Level of attainment Final exam
2.4	80% of attainment Level in Final exam (I)
75.00	% of students above 80 % of mid-course exam marks
2	Level of attainment
0.4	20% of attainment Level in mid-course exam (II)
2.8	Attainment of course(I+II)

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



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

YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD

Department of Chemistry

Short-Term Course - "Preparation of Household Chemicals"

Year 2022-23

Attendance Dec-2022

Department of Chemistry Yashwantrao Chavan College of Science, Karad

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Department of Chemistry
Yashwantrao Chavan College of
Science, Karad

YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD Department of Chemistry

Short-Term Course - "Preparation of Household Chemicals"

Year 2022-23

Attendance Jan-2023

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Department of Chemistry

Short-Term Course - "Preparation of Household Chemicals"

Year 2022-23

Attendance Feb-2023

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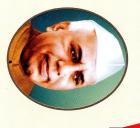
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Short Term Course

Certificate of Completion

Chemistry during the academic year 2022-2023	of Household Chemicals	of Class M.Sc. II	This is to certify that Mr./Mi
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Short Term Course

Certificate of Completion

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Course Co-ordnator Shitish

Head of the Depa