

“Dissemination of Education for Knowledge, Science and Culture”

- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha, Kolhapur's

Raje Ramrao Mahavidyalaya, Jath Dist. -Sangli

Post Graduate Department of Chemistry

A REPORT SUBMITTED

TO

Internal Quality Assurance Cell

CERTIFICATE COURSE

IN

PREPARATION OF HOUSEHOLD

CHEMICALS

2021-22

“Dissemination of Education for Knowledge, Science and Culture”

- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha, Kolhapur

Raje Ramrao Mahavidyalaya, Jath

(AFFILIATED TO SHIVAJI UNIVERSITY, KOLHAPUR)

Department of Chemistry

**CERTIFICATE COURSE
IN
PREPARATION OF HOUSEHOLD
CHEMICALS**

To be implemented from

July 2021

“Dissemination of Education for Knowledge, Science and Culture”

- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha, Kolhapur's

Raje Ramrao Mahavidyalaya, Jath

Dist. - Sangli

Post Graduate Department of Chemistry

Date -18/07/2021

To,
The Principal,
Raje Ramrao Mahavidyalaya, Jath
Tal: Jath Dist.: Sangli - 416404

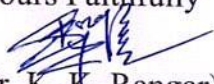
Subject: - Regarding permission to commencement of certificate
Course in Preparation of Household Chemicals.

Respected sir,

With the reference to above subject, our department is going to
conduct certificate course in **PREPARATION OF HOUSEHOLD
CHEMICALS** for M. Sc. Students in this year academic year.
So, I request you to give us permission to conduct above said course.

Thanking you,

Yours Faithfully


(Mr. K. K. Rangar)

HEAD
Department of Chemistry
Raje Ramrao Mahavidyalaya, Jath.

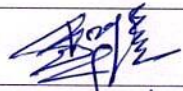

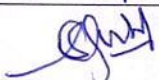
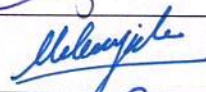
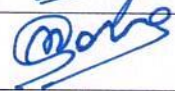

DEPARTMENT OF CHEMISTRY
CERTIFICATE COURSE IN ANALYTICAL INSTRUMENTATION


Academic year 2021-22


Date: - 18/07/2021

Notice of Meeting

The meeting of the members of BOS in Certificate Course in Analytical Instrumentation is conveyed on 24th July 2021 for the preparation of syllabus.

Name	Position	Signature
Mr. K. K. Rangar	Chairman	
Mr. R. B. Sawant	Coordinator	
Dr. S. R. Kulal	Member	
Ms. M. R. Mujawar	Member	
Dr. K. V. Gaikwad	Member	
Mr. A. A. Pawar	Member	


Mr. K. K. Rangar
HEAD
Department of Chemistry
Raje Ramrao Mahavidyalaya, Jath.



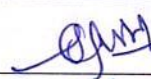
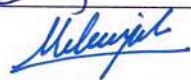



Dr. V. S. Dekhale
I/c. Principal
Raje Ramrao Mahavidyalaya, Jath
Tal-Jath, Dist-Sangli.

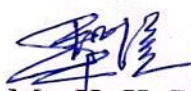
DEPARTMENT OF CHEMISTRY
CERTIFICATE COURSE IN PREPARATION OF
HOUSEHOLD CHEMICALS

Academic year 2021-22

Minutes of Meeting

The meeting of the members of BOS in Certificate Course in Preparation of Household Chemicals is held on 24th July 2021 for the preparation of syllabus. The following members are present and prepare the syllabus of above course and submitted to IQAC, Raje Ramrao Mahavidyalaya, Jath.

Name	Position	Signature
Mr. K. K. Rangar	Chairman	
Mr. R. B. Sawant	Coordinator	
Dr. S. R. Kulal	Member	
Ms. M. R. Mujawar	Member	
Dr. K. V. Gaikwad	Member	
Mr. A. A. Pawar	Member	


Mr. K. K. Rangar
HEAD
Department of Chemistry
Raje Ramrao Mahavidyalaya, Jath.

Aims:

Many common household products contain chemicals that can cause injury or death if they are not handled, stored, or used properly. Some of the household products that contain hazardous chemicals are oven cleaners, tile cleaners, toilet-bowl cleaners, liquid drain openers, antifreeze, chrome-wheel cleaners, rust removers, gasoline, motor oil, lead paint, turpentine, lacquer thinner, and muriatic acid. These safety precautions can help keep you and your family safe. To realize that chemicals and potential toxics are all around us. We can make a choice whether or not to use some of these chemicals. Understand that it is important to read the label on products. Understand that people have different philosophies about risk-taking

Objective:

1. To make availability of self-employment.
2. To develop confidence for doing job.
3. To develop skills required for job.
4. To develop knowledge of domestic chemical.
5. To develop skill of subject knowledge on applied basis.
6. To develop skills of market survey.

Learning Outcomes

1. Students will be able to identify and solve chemical problems
2. Students will be able to explore new areas of research.
3. Students will have to knows the regulations for safe handling and use of chemicals
4. Students will be able to communicate the results of their work to society.

5. Students will have to find gainful employment in industry or government, be accepted at graduate or professional schools, or find employment in school systems as instructors or administrators.
6. Students will appreciate the central role of chemistry in society and use knowledge as a basis for ethical behaviour in issues facing chemists including an understanding of safe handling of chemicals, environmental issues.

Evaluation System:

All the students will be continuously evaluated by,

a. Theory examination (Two papers)	60 M
b. Practical examination (Two papers)	40 M
<hr/>	
100 M	

Nature of Theory question papers:-

- Q.1. Multiple choice question and compulsory, containing 05 questions. (05 marks)
- From Q.2-Q.3. (To be divided into sub-questions A, B, C &/or D) **any four** questions to be solved. (25 marks)

Grades: - **A grade**= above 75, **B grade** = above 60, **C grade** = above 50

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

Paper-I:- Basic concept of household chemicals [30 Marks]

Unit I:- Basic concepts in Domestic chemicals (10 Mark)

- 1.1 Mole concepts.
- 1.2 Concentration
- 1.3 Units of concentration.
- 1.4 Normality.
- 1.5 Molarity.
- 1.6 Mole fraction.
- 1.7 Molality.
- 1.8 Percentage composition by volume.
- 1.9 Percentage composition by weight.

Unit II:- Domestic chemicals (10 Marks)

- 2.1 Introduction of House chemicals or domestic chemicals and their uses.
- 2.2 Sanitary acids
- 2.3 Phenyl
- 2.4 Liquid soaps; Lysol, Dettol, Savalon.
- 2.5 Acids -bases
- 2.6 General introduction
- 2.7 Theory
- 2.8 Types and Strength of acids
- 2.9 Cleaning action of acids and Handling and precautions
- 2.10 Antiseptic and Disinfectant

Unit III: - Titration (10 Marks)

- 3.1 General introduction
- 3.2 Types of titrations
- 3.3 Indicators (Artificial and Natural)
- 3.4 Theory and types

**Paper- II:- Mechanism, precaution and cleaning
action of household chemicals [30 Marks]**

Unit I: - Soaps and detergents

(20 Marks)

- 1.1 Introduction of Soaps
- 1.2 Theory and types
- 1.3 Raw materials
- 1.4 Types of soaps
- 1.5 Manufacture of soaps, Hot Process
- 1.6 Cleaning action of soaps
- 1.7 Introduction of Detergents
- 1.8 Raw materials
- 1.9 Types of detergents, Cationic, anionic, amphoteric and neutral
- 1.10 Preparation of teepol and deriphat.
- 1.11 Comparison between soaps and detergents.

Unit II: - Phenols

(05 Marks)

- 2.1 Introduction of Phenol
- 2.2 Methods of synthesis of Phenols
- 2.3 Physical properties
- 2.4 Chemical properties
- 2.5 Uses

Unit III: - Phenyl

(05 Marks)

- 3.1 Preparation
- 3.2 Ingredients and uses
- 3.3 Advantage and drawback of phenyl

Paper- III :- Practical

[40 Marks]

- 1) Volumetric titration
- 2) Conduct metric titration
- 3) Preparation of standard solutions
- 4) Preparation of phenyls
- 5) Preparation of dyes
- 6) Preparation of Soap
- 7) Preparation of Detergent Powder
- 8) Preparation of Liquid Soap
- 9) Preparation of Neel
- 10) Preparation and uses of Natural Indicators

REFERENCES:

- 1) Text book of Quantitative Inorganic Analysis by A. I. Vogel.
- 2) A Text book of Practical Organic Chemistry by A. I. Vogel
- 3) Practical Organic Chemistry by Mann and Saunders.
- 4) Analytical Chemistry – G. D. Christain
- 5) Treatise on Analytical Chemistry, Vol. I to VII- I. M. Kolthof