

# B.sc. sem-3 CO & CO's

THE HNSB.LTD.SCIENCE COLLEGE, HIMATNAGAR

Course Name : B. Sc. Chemistry Semester : III  
PROGRAM CODE : SCIUG102  
COURSE CODE : SC23MJDSCCHE301

Type of course : Major Discipline Specific course

Name of course : Basic chemistry I

Total Marks : 100

Effective from June 2023 Under NEP 2020 (started from 2024-25)

Total Credits : 04	Teaching Hours per Week: 04	Theory	External 50 Marks
	Teaching Hours per Semester: 60		Internal 50 Marks

## Course Objectives:

1. To understand the core concepts of coordination compounds using CFT.
2. To understand carbohydrates and their chemistry.
3. To study and understand electronic spectroscopy.
4. To know basic principals of thermodynamics and relevant numericals.

## Course Outcome:

1. Students will have a firm foundation in the fundamentals and application of current chemical and scientific theories including those in coordination compounds, carbohydrates and thermodynamics.
2. Students will appreciate the central role of chemistry in our society and use this as a basis for ethical behavior in issues facing chemists including an understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.
3. Students will be able to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments.
4. Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems.



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Head  
Chemistry Department  
The H.N.S.B. Ltd., Science College  
Himatnagar-383001, Dist. S.K.

Course Name : B. Sc. Chemistry Semester : III

PROGRAM CODE : SCIUG102

COURSE CODE : SC23MJDSCCHE301A

Type of course : Major Discipline Specific course

Name of course : Basic chemistry II.

Total Marks : 100

Effective from June 2023 Under NEP 2020

Total Credits : 04	Teaching Hours per Week: 04	Theory	External 50 Marks
			Internal 50 Marks
Teaching Hours per Semester: 60			

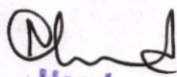
**Course Objectives:**

1. To understand the core concepts of Magnetochemistry.
2. To understand basic quantum chemistry i.e. particle and wave nature of particle, Dual nature of particle.
3. Understanding concept of aromatic substitution reactions
4. To study about the nature and physical properties of liquid.

**Course Outcome:**

1. Students will have a firm foundation in the fundamentals and application of current chemical and scientific theories based on wave mechanics, magnetic properties, Organic aromatic reactions and liquid behaviour.
2. Students will appreciate the central role of chemistry in our society and use this as a basis for ethical behavior in issues facing chemists including an understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.
3. Students will be able to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments.
4. Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems.
5. To know about the physical characteristics of liquids for various estimations.



  
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Program Name : B. Sc. ChemPMJDSCistry Semester : III  
PROGRAM CODE : SCIUG102  
COURSE CODE : SC23PMJDSCCHE301

Type of Course : Practicals Major Discipline Specific Course PMJDSC  
Name of Course : Practical's for Basic chemistry I  
Total Marks : 100

Effective from June 2023 Under NEP 2020

**GROUP A**

Total Credits : 02	Teaching Hours per Week: 04	Practicals	External 25 Marks
	Lab Teaching Hours per semester:60		Internal 25 Marks
Minimum Number Practicals to be Performed: 12			

**GROUP B**

Total Credits : 02	Teaching Hours per Week: 04	Practicals	External 25 Marks
	Lab Teaching Hours per semester:60		Internal 25 Marks
Minimum Number Practicals to be Performed: 08			


**Course Objectives:**

1. To identify the In organic components in mixtures
2. To find out of normmality of components in mixture using instruments like conductometers.

**Course Outcomes:**

1. Students will gain a comprehensive knowledge and skills in operations of instruments needed in industry.
2. To find of the concentrationof acids in binary mixtures.
2. To understand basic methods to identify the cations and anions in the prepared samples.



  
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Course Name : B. Sc. Chemistry Semester : III  
PROGRAM CODE : SCIUG102  
COURSE CODE : SC23MDCCHE303

Type of course : Multi disciplinary course MDSC  
Name of course : Simplified chemistry I

Total Mark : 50

Effective from June 2023 Under NEP 2020

Total Credits : 02	Teaching Hours per Week: 02	Theory	External 25 Marks
	Teaching Hours per Semester: 30		Internal 25 Marks


**Course Objectives:**

1. To understand the core concepts of Boron compounds.
2. To understand Heterocyclic chemistry and their application.

**Course Outcome:**

1. Students will have a firm foundation in the fundamentals and application of current chemical and scientific theories including those of boron compounds and heterocyclic Chemistries.
2. Students will be able to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments.
3. Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems.



  
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Program Name : B. Sc. Chemistry Semester : III  
PROGRAM CODE : SCIUG102  
COURSE CODE : SC23PMDCCHE303

Type of Course : Practicals Multidisciplinary (Elective) Course PMDSC  
Name of Course : Practical's for Simplified chemistry I

Total Marks : 50

Effective from June 2023 Under NEP 2020

Total Credits : 02	Teaching Hours per Week: 04	Practicals	External 25 Marks
	Lab Teaching Hours per semester: 60		Internal 25 Marks
Minimum Number Practicals to be Performed: 10			

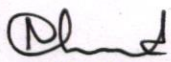
**Course Objectives:**

1. To identify the components in Inorganic mixtures.
2. Preparation of different solutions and samples.

**Course Outcomes:**

1. Students will gain a comprehensive knowledge and skills in preparation of solutions for carrying out reactions in inorganic samples.
- 2: To understand basic methods to identify the components in mixtures.



  
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Program Name : B. Sc. Chemistry

Semester : III

PROGRAM CODE : SCIUG102

COURSE CODE : SC23IKSCHE305

Type of course : Indian Knowledge System course IKS

Name of course : Basic concept of IKS

Total Mark : 50

Effective from June 2023 Under NEP 2020

Total Credits : 02	Teaching Hours per Week: 02 Teaching hours per semester: 30	Theory	External 25 Marks
			Internal 25 Marks

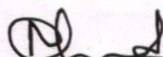
**Course Objectives:**

1. To understand importance IKS
2. To have knowledge of IKS.
3. To know about principle and application of IKS.

**Course Outcome:**

1. Students will gain a comprehensive knowledge of IKS.
2. To raise awareness among students about Indian culture .
3. Students will learn how to control and prevent pollution.



  
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Program Name : B. Sc. Chemistry

Semester : III

PROGRAM CODE : SCIUG102

COURSE CODE : SC23SECCE306

Type of course : Skill Enhancement course SEC

Name of course : Environmental Pollution

Total Mark : 50

Effective from June 2023 Under NEP 2020

Total Credits : 02	Teaching Hours per Week: 02 Teaching hours per semester: 30	Theory	External 25 Marks
			Internal 25 Marks

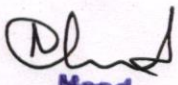
**Course Objectives:**

1. To understand importance environment and its protection
2. To have knowledge of principles of environment protection.
3. To know about types of pollutants.

**Course Outcome:**

1. Students will gain a comprehensive knowledge about natural and artificial pollutants.
2. To understand the importance of environment for our survival.
3. Students will learn how to reduce and stop environment pollution with help of various agencies.



  
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Program Name : B. Sc. Chemistry Semester : III  
PROGRAM CODE : SCIUG102  
COURSE CODE : SC23SECICHE306A

Type of course : Skill Enhancement course SEC  
Name of course : Chemical Metallurgy

Total Mark : 50

Effective from June 2023 Under NEP 2020

Total Credits : 02	Teaching Hours per Week: 02 Teaching hours per semester: 30	Theory	External 25 Marks
			Internal 25 Marks


**Course Objectives:**

1. To understand importance metals and their utility
2. To have knowledge of extraction of metals.
3. To know about types of electro metallurgical processes.

**Course Outcome:**

1. Students will gain a comprehensive knowledge about metallurgical methods.
2. To understand the importance of earth as source of metals.
3. Students will learn how to extract metals from natural resources and electrometallurgical tools..



  
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