

DEPARTMENT OF CHEMISTRY

PROGRAMME: B.SC.

Statements of Programme Specific Outcomes (PSOs)

By the end of the course, the students will be able to:

- Join school as Chemistry teacher.
- Prepare for competitive exams like MPSC, UPSC, GATE, CAT.
- Analyze and grasp abstract ideas to apply them to important practical problems.
- Develop strong analytical skills and a broad-based background in the Chemical sciences to join Indian industry.

Statement of Course Outcomes (COs)

B.Sc. Sem-I Paper-CH 101: (Inorganic Chemistry)

By the end of this course, Students will be able to:

- Understand the basic structure of atom.
- Understand the concept nature of chemical bond.
- Overview of periodic table and S,P block elements.

B.Sc. Sem-I Paper-CH 102: Physical Chemistry

By the end of this course, Students will be able to:

- Understand the various states of matter.
- Overview of solid, liquid and gaseous state of matter.
- Understand the concept of different types of surface phenomenon and catalytic property.

B.Sc. I Sem-I Paper- CH-103: Laboratory Course

By the end of this course, Students will be able to:

- Students will be able to investigate different metal salts by using inorganic qualitative analysis.
- Students are able to understand various properties of liquids i.e. surface tension, refractive index, viscosity

B.Sc. Sem-II CH – 201: Paper- I (Organic Chemistry)

By the end of this course, Students will be able to:

- Understand the concept structure and bonding in organic compounds.
- Understand the concept of stereochemistry.
- Understand different types of reaction mechanism.
- Understand alkanes, alkenes.
- Understand the aromaticity of organic compounds.

B.Sc. Sem-II CH – 202: Paper- II (Physical Chemistry)

By the end of this course, Students will be able to:

- Understand the thermodynamics of chemical reactions.
- Understand the concept of chemical kinetics.

- Understand the concept of phase equilibria.

B.Sc. Sem-II CH-203: Laboratory Course

By the end of this course, Students will be able to:

- Students will be able to analyse organic compounds by organic qualitative analysis method.
- Students will be able to synthesize simple molecule like benzamide and benzaldehyde.
- Students will be able to use various techniques useful for analysis such as calorimetry, conductometry.

B.Sc. Sem-III CH – 301: Paper- I (Inorganic Chemistry)

By the end of this course, Students will be able to:

- Understand the concepts of molecular orbital theory.
- Understand the properties of d and f block elements.
- Understand the role of non aqueous solvents.
- Understand concepts of errors and evaluation in chemical analysis.

B.Sc. Sem-III CH-302 : Paper- II (Organic Chemistry)

By the end of this course, Students will be able to:

- Understand the structure and chemical bonding in aryl, alkyl halides, aldehydes.
- Understand the structure and chemical bonding in alcohols and phenols..
- Understand chemical reactions of acids, alcohols, phenols etc.

B.Sc. Sem-III CH- 303: Laboratory Course

By the end of this course, Students will be able to:

- Perform volumetric analysis for the estimation of Zn, Fe and alkali content in given sample.
- identify given organic compound by organic qualitative analysis.

B.Sc. Sem-IV CH – 401: Paper- I (Inorganic Chemistry)

By the end of this course, Students will be able to:

- Understand the properties of coordination compounds.
- Overview of organometallic chemistry.
- Understand the importance of essential elements in living organism.
- To understand the Concept of hard and soft acid base theory.

B.Sc. Sem-IV CH – 402: Paper- II (Physical Chemistry)

By the end of this course, Students will be able to:

- Understand second law of thermodynamics.
- Use spectroscopy for chemical analysis.
- Understand electrochemistry of reversible and irreversible cells.
- Understand the nuclear properties of atom.

B.Sc. Sem-IV CH-403: Laboratory Course

By the end of this course, Students will be able to:

- Perform gravimetric analysis of Ni, Ba.
- To estimate amount of constituents present in given solution by conductometer, potentiometer.

B.Sc. Sem-V CH- 501:Paper- I (Organic Chemistry)

By the end of this course, Students will be able to:

- Understand heterocyclic chemistry.
- Understand the theory behind the organic qualitative analysis.
- Understand the chemistry of organomagnesium and organozinc compound.

B.Sc. Sem-V CH- 502:Paper- II (Physical Chemistry)

By the end of this course, Students will be able to:

- Understand quantum chemistry and its application.
- Understand molecular orbital theory.
- Understand photochemistry and Raman spectroscopy

B.Sc. Sem-V CH- 503: Laboratory Course

By the end of this course, Students will be able to:

- Perform estimation of different functional groups present in organic compound.
- Perform analysis based on viscosity,colorimetry,refractometry.

B.Sc. Sem-VI CH – 601: Paper- I (Inorganic Chemistry)

By the end of this course, Students will be able to:

- Understand metal-ligand bonding in co-ordination compounds.
- Understand electronic spectra of transition metal complexes.
- Understand separation techniques used in analysis and purification.
- Understand the importance of inorganic polymers.

B.Sc. Sem-VI CH- 602: Paper- II (Organic Chemistry)

By the end of this course, Students will be able to:

- Understand the theory behind Nuclear magnetic resonance spectroscopy..
- Understand structure and properties of biomolecules.
- understand the importance of synthetic dyes, synthetic drugs and synthetic polymers .