

Chemistry course outcomes

B.Sc MPC / BZC CHEMISTRY Programme Specific Outcomes

On the successful completion of three years of B.Sc Chemistry course the students will be able to

- Have sound knowledge about fundamentals and applications of chemical and scientific theories.
- Understand the fact that every branch of science is related to chemistry.
- Easily assess the properties of all elements discovered.
- Apply appropriate techniques for the qualitative and quantitative analysis of chemicals in laboratories and in industries.
- Be familiar with different branches of chemistry like analytical, organic, inorganic, physical, bio chemistry and drug chemistry.
- Understand the causes of environmental pollution and can open up with new methods for control.
- Develop analytical skills and problem solving skills requiring applications of chemical principles.
- Acquire the ability to synthesize, separate and characterize compounds using laboratory and instrumental techniques.
- Provide theoretical background and develop practical skills for analyzing materials using modern analytical methods and instruments.
- Become professionally skilled for higher studies.
- Gain in depth knowledge that helps himself/herself to qualify for higher academics and competitive exams.

B.Sc MPC / BZC CHEMISTRY COURSE OUTCOMES

CHEMISTRY - PAPER-I

SEMESTER –I

On the successful completion of the course the students will be able to

- Understand how the concept of valency can account to predict the formula of the compound.
- Understand general trends in chemistry behind p-Block elements.
- Gain the knowledge of bond polarity , electronic effects of organic compounds.
- Acquire the Knowledge of states of matter , nature of solutions.
- Equipped with concepts of principles theories and practical applications of chemistry
- Demonstrate with the knowledge of special arrangement,properties of stereo isomers.

CHEMISTRY- PAPER-II

SEMESTER –II

On the successful completion of the course the students will be able to

- Develop interest and understanding about the basic concepts of the structures, chemical properties of inorganic molecule entities-P-block, Zero-block, and d-block elements.
- Gain knowledge in classification, nomenclature, nucleophilic substitutions for halogen compounds.
- Learn about Hydroxyl compounds, Carbonyl compounds, Loss of electrochemistry.
- Boost their career and employment opportunities with the help of theory of qualitative analysis.
- Understand the CIP rules, R-S Nomenclature, colligative properties and were able to calculate problems based on solution concepts.

CHEMISTRY PAPER-III

SEMESTER –III

On the successful completion of the course the students will be able to

- Learn about fundamental concepts of f-block elements coordination compounds.
- Apply knowledge and understand reactions of Metal carbonyls, OMC and applications of RMgX.
- Demonstrate an understanding of various thermodynamic terms, parameters and loss.
- Gain skill and knowledge in evaluation analytical data carbanion applications.
- Learn about Phase rule-Heterogeneous system. Nomenclature and reactivity of Carboxylic acids and Nitrogen compounds.

CHEMISTRY PAPER-IV

SEMESTER –IV

On the successful completion of the course the students will be able to

- Learn the importance of carbohydrates, amino acids their structures synthesis and properties The students can apply their learnt knowledge of Chemical Kinetics Rate of reactions, Rate loss and different order Reactions.
- Learn about essential elements their biological significance and toxicity of heavy metals.
- Gains skill and knowledge for CFT Properties of Complex compounds and pearson concept.
- Gain the knowledge of photochemistry – laws, Quantum yield – Jablonski diagram.
- Learn about Colloids, Surface chemistry and Isotherms.

CHEMISTRY PAPER – V

SEMESTER –V

On the successful completion of the course the students will be able to

- Have an insight into crystal field splitting, applications of co-ordination compounds & Boranes –Carboranes.
- Have first hand information about Amines, Heterocyclic Compounds- nomenclature, preparations & properties.
- Discuss the physical chemistry part of chemical kinetics-rate of reaction, rat law, Order of reactions, characteristics, rate constant, half life time.

- Work on EMR, molecular spectroscopy, IR, UV-VISIBLE & Rotational spectroscopy.
- Promote themselves for higher studies through the knowledge of Photochemical reactions, laws of photochemistry, Quantum yield, Jablonski diagram.

CHEMISTRY PAPER – VI

SEMESTER –V

On the successful completion of the course the students will be able to

- Understand the fundamental principles of Chromatography, classification, principles – Rf values.
- Understand about Electro Analytical Techniques-Interfacial methods, bulk methods.
- Gain knowledge on general features of Absorption Spectroscopy, colorimetry and Spectrophotometry.

CHEMISTRY PAPER – VI I

SEMESTER –VI

On the successful completion of the course the students will be able to

- Understand and learn about Inorganic Reaction Mechanism-Lability & Inertness, Trans Effect & biological importance of elements.
- Gain knowledge of Haemoglobin structure, functions, Chlorophyll structure & its importance.
- Understand core criteria of Pearson Theory –HSAB Concept stability applications.
- Understand the basic idea of Biomolecules –Carbohydrates, Amino acids-proteins structure, classification, preparations & properties.
- Demonstrate an understanding of various thermodynamic functions, parameters, laws, Carnot theorem, Entropy & Gibbs Function. Gain basic idea on Proton Magnetic Resonance spectroscopy and Mass Spectroscopy.

CHEMISTRY PAPER – VIII

SEMESTER –VI

On the successful completion of the course the students will be able to

- Get the basic idea of medicinal chemistry, ADME for drugs. Introduction and terminology on diseases and drug metabolism.
- Understand the concept of enzymes and receptors Which will be helpful for drug action receptor theory.
- Get the basic idea of structure- activity relations of drug molecules.
- Learn about synthesis and therapeutic activity of drugs, chemo therapeutics, metabolic disorders.
- Familiarise himself/herself with knowledge of molecular messengers and health promoting drug concepts.