B.Sc. Progaramme Outcome & Course Outcome
(Session : 2015-16)

B.Sc. Chemistry

Programme Outcome

To study about the different areas of science.

- To study the periodic properties of elements, geometry of molecules, characteristics of molecules.
- To study the fundamentals of reaction mechanism, aromaticity, stereochemistry, synthesis and applications of various organic compounds.
- To develop skills in different laboratory analytical works and handling instruments.

Course Outcome

1. **B. Sc Part One**

   Knowledge of Atomic structure, Basic periodic properties, Chemical bonding, Ionic solids, Noble gases, Knowledge of S,P block elements, Mechanism of organic reactions, Stereochemistry of organic compounds, Alicyclic mononuclear polynuclear aromatic ring compounds, Alkyl and aryl halides, Elementary knoeledge Computer. Ideal and non ideal solutions, Liquid crystal, Colloidal state, Chemical kinetics and catalysis.

2. **B. Sc Part Two**

   Knowledge of Transition elements, Oxidation reduction, Coordination compounds, Knowledge of Lanthanides, Actinides, Acids, Bases, Non-aqueous solvents, Hard and soft acids and bases, Alcohols and phenols, Aldehydes and ketones, Carboxylic acids and their derivatives, Organic compounds of nitrogen, Heterocyclic compounds, Amino acids, Peptides, Protein and Nucleic acids, Thermodynamics and Thermo chemistry. Phase equilibrium, Electrochemistry.

3. **B. Sc Part Three**

   Knowledge of Metal ligand bonding in transition metal complexes, Knowledge of Organometallic compounds, Bioinorganic chemistry, Hard and soft acids and bases, Organo sulphur compounds, Carbohydrates, Quantum mechanism, Fundamentals of spectroscopy, Physical properperties and Molecular structure, Solution, Dilute solution and Colligative prpperties.

B.Sc. Botany

Programme Outcome

1. Terminology , phenomenon, concept and classification of plants & scientific importance
2. Introduction and awareness of the related flora(biodiversity)
3. Practical aspect and knowledge of cell division and growth of plant
4. Introduction and concept and economic importance o lower plants
5. Basic concept of process of physiological , biochemical and technological importance

Course Outcome

B.Sc Part One

1. **Biodiversity (Microbes, Algae, Fungi,& Archegoniate):-** Understanding regarding microbes, Algae, Fungi, bryophytes, pteridophyta including general characteristics, classification morphology and anatomy reproduction and economic importance.
2. **Cytology, genetics and molecular biology:-** Knowledge of cellular organization and their role in governing cellular processes. knowledge of genetics interactions and basic genetics at molecular level.

B.Sc Part Two

1. **Diversity of seed plant and their systematic: -** Basic idea of characteristics of seed plants classification and diversity of flowering plants.
2. **structure development and reproduction of flowering plants :-** knowledge of tissues normal and abnormal embryology and internal structure of Dicot and monocot root steam and leaf .

B.Sc Part Three

1. **Plant physiology and biotechnology:-** knowledge of plant water relation, metabolism, growth regulators light and temperature effect and fundamental biotechnology
2. **Ecology and Systematic Botany:-** Knowledge of ecosystem plants communities Phytogeography ecological factors and pollution study. Introduction with hydrophytes and xerophytes plants.

B.Sc. Zoology

Programme Outcome

After completion of the program, the students will able to

1. Understand the scientific terms, concepts, facts, phenomenon and their interrelationships
2. Understand systemic position and organization of animals through study of classification
3. Know and appreciate life processes governing life from acellular, multicellular and tissue grade organization
4. Apply the subject knowledge for day to day use
5. Develop skills and abilities in practical work, handling instruments in laboratory experiments
6. Appreciate the tenets of the subject, contribution of scientists and scientific programs

Course Outcome

1. B. Sc Part One

- Understand the scientific terms, concepts, facts, phenomenon and their interrelationships.
- Classification- Classification of Invertebrate and vertebrate phyla to understand Systematic position, special features of vertebrate at structural organization level
- Cytology- Give general idea of organization at cellular level and their role in governing cellular processes
- Embryology- understand developmental process in vertebrates, to know various strategies of embryonic development among vertebrates
- Ecology and Environment- make student aware of ecology and environment at local, national and Global level.

2. B. Sc Part Two

- Comparative anatomy and Physiology- know and appreciate complexity of vertebrate structure evolved from lower to higher strata. Various Physiological processes for different habitat conditions.
- Evolution: to understand evidences and theories of evolution, Understanding variation which is the basis of evolution, causes of variation.
- To learn applied aspect of Zoology
- Study various culture methods, and apply this knowledge for economic gains.

3. B. Sc Part Three

- Endocrine and Reproductive biology – basic knowledge of endocrine glands, structure, Biosynthesis, effect of hormones, and mode of action
- Behavior- general idea of animal behavior , from simple taxis to complex behavior
- Toxicology- general idea of toxicants, metallic, non metallic, from plant and animal source. Effect of toxicant and treatment
- Genetics- knowledge of classical genetics, genetic interactions and Basic genetics at molecular level
- Biochemistry Structure of Bio-molecules, and their metabolism to understand fate of these molecules within the body and their significance
- Biotechnology – basic techniques used in biotechnology and application of biological organisms or processes for manufacture of useful products

B.Sc. Mathematics

Programme Outcome

- It provide a base for higher studies and refines the brain of students in comparison to other students as study of mathematics helps to increase the act of logical thinking.
- Students of science have greater chance of employment e.g. in finance and investment. teaching, keep up mathematical knowledge in the changing environment of technology.
- Study of mathematics enhances personal development . one learns to develop skill and time management
- Students can apply their knowledge in other branches of study as mathematics find application in every fields of knowledge.

Course Outcome

B.Sc Part One

1. Algebra and trigonometry

   Students will be able to :
   - Mapping, matrix. Eigen values and inverse of a matrix.
   - Relation between the roots and coefficients of general polynominal equation cardon method, solve cubic equation
   - Group, Sub group cyclic group, normal subgroup etc. ring field charecteritic of a ring.

2. Trignomatry
   - Apply De moiver`s theorem , hyperbolic function
   - Expantion of trignomatrical function.
   - Summation of series

3. Calculus
   - By learning the topics taught in this paper students learns how to tackle problems of successive differentiation
   - Leibnritz theorem and taylor theorem
   - Asymptotes, Curvature, Multiple point Tracing of curves
   - Integral calculus, Quadrature,Volume surface.
   - Differential Equation.

4. Vector analysis and geometry

   Students will be able to

- To define vector and gradient, divergence and curl
- vector integration, Theorems of Gausees, Green and Stokes Theorem
- geometry, Confocal conics.
- Plane sphere, Cone cylinder
- Central Conicoids

B.Sc Part Two

1. Advance Calculus

   Students will learns

- The topic taught in this paper sequence , Coninuty, taylor`s theorem
- Define partial differencial equation, Euler theorem
- Envelopes, Evolutes, Maxima Minima.
- To apply beta and gama function
- Double and triple integral.

2. Differential Equation:-

   Students will be able to

- Series solution of differential Equations
- Laplace transformation,
- partial differential Equation, Charpit method, Monge`s method
- Calculas of Variations

3. Mechanics

Students will learns

- Statics, Analytical condition of Equilibrium,Virtual work , Catenary.
- Forces in three dimentions
- Simple harmonic motion, Elastic strings.
- Dynamics,Velocities and acceleration , Kepler`s laws motion
- resisting medium.

B.Sc Part Three

1. Analysis

    - Real Analysis

        - Schwarz and Youngs theorem, Fourier series, Convergence Divergence
        - Riemann integral, improper integral and their convergence.
        - Conformal mapping

    - Complex Analysis

        - analytic function Harmonic function Mobius transformation
        - matric space, dense subsets, Compectness,Conectedness,

2. Abstract Algebra

    Students will be learn

        - Group theory , sylow`s theorem
        - Ring theory, Modules,
        - Vector Spaces
        - linear transformation
        - inner product spaces

3. Discrete Mathematics

        - Sets and propositions
        - Formal languages
        - Probability
        - Relation and function, Lattics
        - Graphs and Planer graphs, trees
        - Finite state machines, Discrete numeric function and Generatic function
        - Recurrence relation
        - Group and rings
        - Boolean Algebra

B.Sc. Physics

Programme Outcome

- The main mission of the U.G. degree program is to understanding of core knowledge in physics, including the major premises of classical mechanics, quantum mechanics, electromagnetic theory, Basic electronics, optics, special theory of relativity and modern physics.
- Students will demonstrate written and oral communication skills in communicating physics-related topics.
- Students will design and conduct an experiment (or series of experiments) demonstrating their understanding of the scientific method and processes. Students will demonstrate an understanding of the analytical methods required to interpret and analyze results and draw conclusions as supported by their data.
- Students will demonstrate a thorough understanding of the analytical approach to modelling of physical phenomena.

Course Outcome

B.Sc Part One

Mechanics, Oscillations and properties of Matter, **Electrostatic and steady current**

- Understand the definition for centre of gravity in hemisphere, hollow hemisphere etc.
- Understand the dynamics and gravitation.
- Study the behavior of rigid body dynamics.
- Study the elastic behavior and working of torsion pendulum.
- Study of bending behavior beams and analyze the expression for young's modulus
- Understand the surface tension and viscosity of fluid.
- Study the electric field using coulomb's inverse square law in electrostatics of current
- Analyze the chemical and heating effect of current
- Analyze the relations between b, h and m
- Understand the faradays laws of electromagnetic induction by Rayleigh's method
- Analyze the value of Maxwell equation.

B.Sc Part Two

Thermodynamics, kinetic theory and statistical physics, Wave, acoustic and optics

- Understand the nature law of thermodynamics and entropy.
- Analyses of zeroth law of thermodynamics and entropy.
- Understanding the low temperature physics.
- Analyses thermal conductivity and black body radiation.
- Understanding the statistical method
- Analyze waves and oscillations.
- Study the basic properties and production of ultrasonic by different methods. Understand the natural behavior of aberration in lens
- Study the theory and experiment of interference using air wedge, Newton's rings and Michelson interferometer
- Study the theory and experimental past of diffraction by Fresnel's and Fraunhofer methods.
- Study the theories for production of polarization of light.

B.Sc Part Three

Relativity, quantum mechanics, Atomic Molecular and nuclear physics, Solid state physics, Solid state devices and electronics

- Understand the negative result of Michelson Morley experiment, Galilean and Lorentz transformation.
- Learn the mathematical tools needed to solve quantum mechanics problems. This will include complex functions and Hilbert spaces.
- Analyze the ideas of basics of nucleus and their energy.
- Perform the procedures for nuclear fission and fusion Understand the basic concepts of force between atoms and bonding between molecules
- Analyze the relationship between conductors and insulators and superconductivity Understand the properties of matter and classifications - polarization Understand the properties of semiconductors.
- Analyze the relationship between semiconductors devices and understand the applications of semiconductor devices.

Principal
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