Pharmacy UGET
Syllabus

PHYSICS

I.   MECHANICS:
   - i   Dynamics & Statics
   - ii   Friction
   - iii   Collisions & Centre of Mass
   - iv   Circular Motion
   - v   Centripetal Acceleration
   - vi   General Physics & Properties of Matter

II   WAVE AND SOUND:
   - i   Waves
   - ii   Sound and Velocity of sound
   - iii   Musical note and Noise
   - iv   Stationary waves in air columns & strings

III   GEOMETRICAL OPTICS

IV   PHYSICAL OPTICS

V   ELECTROSTATICS:
   - i   Electric Field
   - ii   Capacitance & Capacitors

VI   CURRENT ELECTRICITY:
   - i   Ohm's Law and its applications, Kirchhoff's Law
   - ii   Magnetic effect of current
   - iii   Electromagnetic Induction.

VII   MODERN PHYSICS:
   - i   Photoelectric effect – Atomic Physics
   - ii   Nuclear Physics
   - iii   Solid State Electronics

CHEMISTRY

I. **INORGANIC CHEMISTRY;**
    1. Atomic structure
    2. Periodic table
    3. Oxidation number
    4. s-block elements
    5. p-block elements
    6. d-Block elements
    7. Chemical bonding
    8. Coordination compounds
    9. Metallurgy
    10. Industrially important compounds
    11. Noble gases

II **PHYSICAL CHEMISTRY:**

    1. States of Matter
    2. Chemical Equilibrium
    3. Surface chemistry
    4. Catalysis
    5. Chemical kinetics
    6. Electrochemistry
    7. Theory of dilute Solutions
    8. Colligative property
    9. Colloids
    10. Solid state

III **ORGANIC CHEMISTRY:**
    1. Aim and scope of organic chemistry
    2. Composition of organic compounds
    3. Classification and nomenclature of organic compounds
    4. Isomerism
    5. Hydrocarbons
    6. Haloalkanes
    7. Aldehydes, ketones and carboxylic acids
    8. Alcohols and phenols
    9. Amines
    10. Carbohydrate
    11. Oils and fats
    12. Amino acids and Proteins.

BOTANY

1. **<u>MOLECULAR BIOLOGY</u>**

   i) Nucleic Acids   ii) The Gene   iii) Genetic Code   iv) Genetic Control

2. **<u>BIOTECHNOLOGY</u>**

   i) Introduction, Scope of Biotechnology, Genetic Engineering.

   ii) Recombinant DNA Technology and its Applications

   iii) A brief Account of - a DNA Fingerprinting

                                  b Gene Therapy

                                  c Human Genome Project

                                  d Monoclonal antibodies

   iv) Hazards and Safe guards of genetic engineering.

3. **<u>PLANT HISTOLOGY AND ANATOMY</u>:**

   i.   Introduction, Meristems, Permanent Tissues

   ii   Components of Vascular Bundles, Definition of Terms

   iii Secondary Growth in Dicot Stem

4. **<u>WATER RELATIONS OF PLANTS</u>;**

   i   Fundamental Concepts. Absorption of Water. Ascent of Sap.

   ii Loss of Water in Plants. Translocation of Solutes.

5. **<u>BIOENERGETICS</u>:**

   Photosynthesis, Respiration.

6. **<u>GROWTH AND GROWTH REGULATORS IN PLANTS</u>**

7. **Biosystematics**

8. **Cell biology**

9. **Kingdom Monera**

10. **Kingdom Protista**

11. **Kingdom Metaphyta**

12. **Pteridophyta**

13. **Gymnosperms**

14. **Angiosperms**

ZOOLOGY

1   **Genetics**

   i   Mendelian Genetics

   ii   Deviations from Mendelian Laws,

   iii   Genetic disorders.

2. **Biodiversity**

   i   Definition and types

   ii   Benefits of Biodiversity, Biodiversity Depletion

3. **Human Health and Diseases.**

   i   Body Defence and Immunity.

   ii   Digestion, Circulation, Respiration, Excretion,

   iii   Nevous system

   iv   Microbes in human welfare

4. **Continuity of Life.**

Gametogenesis, Fertilization

Human Reproduction

Sexually Transmitted Diseases.

5. **Biomolecules**

MATHEMATICS SYLLABUS

1. **Algebra:** Matrices: Definition, Addition, Subtraction and Multiplication of matrices Determinants: Determinants of order two and three, Properties of determinants (without Proof). Inverse of square Matrices, Adjoint of square matrix, Solution of linear equation by Matrix method, Cramer's rule, Characteristic equation, Statement of Cayley-Hamilton Theorem

2. **Trigonometry:** Relation between Sides and angles of a triangle, solution of triangles. Inverse trigonometry functions

3. **Analytical Geometry:** Points, Straight line, Types of straight lines, Parallel and Perpendicular straight lines, Angle between two lines, Perpendicular distance from a point to theline, distance between parallel lines. Three-dimensional geometry.

4. **Circle:** General equation of circle, finding centre and radius of the circle, Parabola Equation.

5. **Differential calculus:** Function, Limit, Differentiation, Differentiation of sum, Product, Quotient, Composite, Parametric, exponential, trigonometric andLogarithmic function. Successive differentiation

6. **Integral calculus:** Partial fractions, Definition of integration, integration by substitution and integration by parts, Properties of definite integrals.

7. **Differential equations:** Definition, order, degree, variable separable, homogeneousdifferential equation, linear differential equation, exact differential equation.

8. **Probability**