Syllabus for First year Intermediate from Academic Year 2025-26

Biology (1st Year)

A - BOTANY

UNIT I – DIVERSITY IN THE LIVING WORLD

Chapter 1 BIOLOGICAL CLASSIFICATION

1.1 Kingdom monera
1.2 Kingdom Protista
1.3 Kingdom Fungi
1.4 Kingdom Plantae
1.5 Kingdom Animalia
1.6 Viruses, viroid and Lichens

Chapter 2 PLANT KINGDOM

2.1 Algae
2.2 Bryophytes
2.3 Pteridophytes
2.4 Gymnosperms
2.5 Angiosperms

UNIT II STRUCTURAL ORGANISATION IN PLANTS

Chapter 3 MORPHOLOGY OF FLOWERING PLANTS

3.1 The root
3.2 The stem
3.3 The leaf
3.4 The inflorescence
3.5 The flower
3.6 The fruit
3.7 The seed
3.8 Semi technical description of a typical flowering plant
3.9 Solanaceae

Chapter 4 ANATOMY OF FLOWERING PLANTS

4.1 The tissue system
4.2 Anatomy of Dicotyledonous and Monocotyledonous plants

UNIT III CELL STRUCTURE AND FUNCTIONS

Chapter 5 CELL – THE UNIT OF LIFE

5.1 What is a cell?
5.2 Cell theory
5.3 An overview of cell
5.4 Prokaryotic cells
5.5 Eukaryotic cells

Chapter 6 BIOMOLECULES

6.1 How to analyse chemical compositon?
6.2 Primary and Secondary metabolites
6.3 Bio Macro molecules
6.4 Proteins
6.5 Polysaccharides
6.6 Nucleic acids
6.7 Stucture of proteins
6.8 Enzymes

Chapter 7 CELL CYCLE AND CELL DIVISION

7.1 Cell cycle
7.2 M phase
7.3 Significance of Mitosis
7.4 Meiosis
7.5 Significance of Meiosis

UNIT IV PLANT PHYSIOLOGY

Chapter 8 PHOTOSYNTHESIS IN HIGHER PLANTS

8.1 What do we know?
8.2 Early experiments
8.3 Where does photosynthesis takes place?
8.4 How many pigments are involved in Photosynthesis?
8.5 What is light Reaction?
8.6 The Electron Transport
8.7 Where are the ATP and NADPH used?
8.8 The C_4 Pathway
8.9 Photo respiration
8.10 Factors affecting photosynthesis

Chapter 9 RESPIRATION IN PLANTS

9.1 Do plants breathe?
9.2 Glycolysis
9.3 Fermentation
9.4 Aerobic respiration
9.5 The respiratory balance sheet
9.6 Amphibolic pathway
9.7 Respiratory Quotient

Chapter 10 PLANT GROWTH AND DEVELOPMENT

10.1 Growth
10.2 Differentiation, Dedifferentiation and Redifferentiation
10.3 Development
10.4 Plant growth regulators

B - ZOOLOGY

UNIT I : DIVERSITY IN THE LIVING WORLD

Chapter-1: The Living World

1.1. Diversity in the living world
1.2. Taxonomic categories

Chapter-2 : Animal Kingdom

2.1. Basis of classification

2.2. Classification of animals

UNIT II : STRUCTURAL ORGANISATION

Chapter -3 Structural Organization in Animals

3.1 Organ and Organ Systems

3.2 Frog

UNIT III: HUMAN PHYSIOLOGY

Chapter-4: Breathing and Exchange of Gases

4.1 Respiratory Organs

4.2 Mechanism of Breathing

4.3 Exchange of Gases

4.4 Transport of Gases

4.5 Regulation of Respiration

4.6 Disorders of Respiratory System

Chapter-5: Body Fluids and Circulation

5.1 Blood

5.2 Lymph (Tissue Fluid)

5.3 Circulatory Pathways

5.4 Double Circulation

5.5 Regulation of Cardiac Activity

5.6 Disorders of Circulatory System

Chapter 6: Excretory Products and their Elimination

6.1 Human Excretory System

6.2 Urine Formation

6.3 Function of the Tubules

6.4 Mechanism of Concentration of the Filtrate

6.5 Regulation of Kidney Function

Syllabus for Second Year Intermediate from Academic Year 2026-27

Biology (2nd Year)

Part - A: Botany

Unit I: Reproduction

Chapter 1: Sexual Reproduction in Flowering Plants

1.1 Flower – A Fascinating Organ of Angiosperms
1.2 Pre-fertilisation: Structures and Events
1.3 Double Fertilisation
1.4 Post-fertilisation: Structures and Events
1.5 Apomixis and Polyembryony

Unit II Genetics and Evolution

Chapter 2: Principles of Inheritance and Variation

2.1 Mendel's Laws of Inheritance
2.2 Inheritance of One Gene
2.3 Inheritance of Two Genes

Chapter 3: Molecular Basis of Inheritance

3.1 The DNA
3.2 The Search for Genetic Material
3.3 RNA World
3.4 Replication
3.5 Transcription
3.6 Genetic Code
3.7 Translation
3.8 Regulation of Gene Expression

Unit III Biology in Human Welfare

Chapter 4: Microbes in Human Welfare

4.1 Microbes in Household Products
4.2 Microbes in Industrial Products
4.3 Microbes in Sewage Treatment
4.4 Microbes in Production of Biogas
4.5 Microbes as Biocontrol Agents
4.6 Microbes as Biofertilisers

Unit IV Biotechnology

Chapter 5: Biotechnology Principles, Processes and Applications

5.1 Principles of Biotechnology
5.2 Tools of Recombinant DNA Technology
5.3 Processes of Recombinant DNA Technology
5.4 Biotechnological applications in Agriculture

Unit V Ecology

Chapter 6: Ecosystem

6.1 Ecosystem–Structure and Function
6.2. Productivity
6.3 Decomposition
6.4 Energy Flow
6.5 Ecological Pyramids

Part B - Zoology

Unit I: Reproduction
Chapter 1: Human Reproduction
1.1 The Male Reproductive System
1.2 The Female Reproductive System
1.3 Gametogenesis
1.4 Menstrual Cycle
1.5 Fertilization and Implantation
1.6 Pregnency and Embryonic Development
1.7 Parturition and Lactation

Chapter 2: Reproductive Health
2.1 Reproductive Health – Problems and Strategies
2.2 Population Explosion and Birth Control
2.3 Medical Termination of Pregnancy
2.4 Sexually Transmitted Diseases
2.5 Infertility

Unit II Genetics and Evolution
Chapter 3: Principles of Inheritance and Variation
3.1 Polygenic Inheritance
3.2. Pleiotropy
3.3. Sex Determination
3.4. Mutation
3.5. Genetic Disorders

Chapter 4: Molecular Basis of Inheritance
4.1 Human Genome Project
4.2 DNA Fingerprinting

Chapter 5: Evolution
5.1 Origin of Life
5.2 Evolution of Life Forms - A Theory
5.3 What are the Evidences for Evolution?
5.4 What is Adaptive Radiation?
5.5 Biological Evolution
5.6 Mechanism of Evolution
5.7 Hardy - Weinberg Principle
5.8 A Brief Account of Evolution
5.9 Origin and Evolution of Man

Unit III Biology in Human Welfare
Chapter 6: Human Health and Disease
6.1 Common Diseases in Humans
6.2 Immunity
6.3 AIDS
6.4 Cancer
6.5 Drugs and Alcohol Abuse

Unit IV Biotechnology
Chapter 7: Biotechnology and its Applications
7.1 Biotechnological Applications in Medicine
7.2 Transgenic Animals
7.3 Ethical Issues

Unit V Ecology
Chapter 8: Organisms and Populations
8.1 Populations

Chapter 9: Biodiversity and Conservation
9.1 Biodiversity
9.2 Biodiversity Conservation