BIOLOGY (+1) (2025-2026)

The present syllabus reinforces the ideas introduced in the lower classes while the students learn new concepts besides getting an exposure to contemporary areas of the subject. The syllabus also aims at emphasizing the underlying principles that are common to both animals and plants as well as highlighting the relationships of biology with other areas of knowledge The format of the syllabus allows a simple, clear, consequential flow of concepts without any jarring jumps. The syllabus also stresses the connection of the study of Biology to real life problems, use of biological discoveries/innovations in everyday life-in environment, nature, medicine, health and agriculture. The updated syllabus also focuses on reducing the curriculum load while ensuring that ample opportunities and scope for learning and appreciating basic concepts of the subject continues to be available within its framework.

The prescribed syllabus is expected to

- Promote understanding of basic principles of biology
- Learning of emerging knowledge and its relevance to individual and society.
- Encourage rational/specific attitude to issues related to population, environment and development.
- Enhance awareness about environmental issues and problems and the appropriate solutions.
- Create awareness amongst the learners about variations amongst the living and developing respect for the diversities and to appreciate that the most complex biological phenomenon are also built on essentially simple processes

It is expected that the students would get an exposure to various branches of Biology in the syllabus in a more contextual and friendly manner as they study its various units.

COURSE STRUCTURE

Time : 3 Hrs (THEORY) Max. Marks : 60

UNIT I :- DIVERSITY IN THE LIVING WORLD

Chapter 1 : The Living World
Chapter 2 : Biological Classification
Chapter 3 : Plant Kingdom
Chapter 4 : Animal Kingdom

UNIT II :- STRUCTURAL ORGANISATION IN PLANTS AND ANIMALS

Chapter 5 : Morphology of Flowering Plants
Chapter 6 : Anatomy of Flowering Plants
Chapter 7 : Structural Organisation in Animals

UNIT III :- CELL : STRUCTURE AND FUNCTIONS

Chapter 8 : Cell : The Unit of Life
Chapter 9 : Biomolecules
Chapter 10 : Cell Cycle and Cell Division

UNIT IV :- PLANT PHYSIOLOGY

Chapter 11 : Photosynthesis in Higher Plants
Chapter 12 : Respiration in Plants
Chapter 13 : Plant Growth and Development

UNIT V :- HUMAN PHYSIOLOGY

Chapter 14 : Breathing and Exchange of Gases
Chapter 15 : Body Fluids and Circulation
Chapter 16 : Excretory Products and their Elimination
Chapter 17 : Locomotion and Movement
Chapter 18 : Neural Control and Coordination
Chapter 19 : Chemical Coordination and Integration

PRACTICALS

Time : 3 Hours Marks : 20

1. Experiments and spotting

2. Record of one investigatory project and Viva based on the project

3. Class record and Viva based on experiments

A. LIST OF EXPERIMENTS

Part: A

1. Study and describe the flowering plants of family solanaceas.
2. Preparation and study of T.S. of dicot and monocot roots and stems (normal).
3. Study of osmosis by potato osmometer.
4. Study of distribution of stomata in the upper and lower surface of leaves.
5. Test for the presence of sugar, starch, proteins and fats to detect them is suitable plant and animal materials.
6. Separate plant pigments through paper chromatography.
7. To study the rate of respiration in flower buds/leaf tissue and germinating seeds.
8. To test the presence of urea in urine.
9. To detect the presence of sugar in urine/blood sample.
10. To detect the presence of albumin in urine.
11. To detect the presence of bile salts in urine.

Part: B STUDY/ OBSERVATION OF THE FOLLOWING SPOTTING

1. Study parts of a compound microscope.
2. Study of the specimens and identification with reasons-
   Bacteria, Oscillatoria, Spirogyra, Rhizopus, mushroom(agaricus), Yeast, liverworts, moss, fern, Pinus, one monocotyledon and one dicotyledon and one lichen.
3. Study of specimens and identification with reasons-
   Amoeba Hydra, Liverfluke, Ascaris, leech, earthworm, prawn, silkworm, honeybee, snail. starfish, Rohu, frog, lizard, pigeon and rabbit
4. Study of mitosis in onion root tip cells and animals cells (grasshopper) from permanent slides.
5. Study of different modifications in root stem and leaves
6. Study and identify different types of inflorescences
7. Observation and comments on the experimental set up on
(a) Anaerobic respiration
(b) Apical bud removal
8. To study human skeleton and different types of joints.

9. Study of external morphology of frog through models/Charts

Prescribed Books

Biology Published by HPBOSE Dharamshala