BIOLOGY +2 (2024-2025)

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 relationship 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

REPRODUCTION

Chapter 1 : Sexual Reproduction in Flowering Plants

Chapter 2 : Human Reproduction

Chapter 3 : Reproductive Health

GENETICS AND EVOLUTION

Chapter 4 : Principles of Inheritance and Variation

Chapter 5 : Molecular Basis of Inheritance

Chapter 6 : Evolution

BIOLOGY IN HUMAN WELFARE

Chapter 7 : Human Health and Disease

Chapter 8 : Microbes in Human Welfare

BIOTECHNOLOGY

Chapter 9 : Biotechnology : Principles and Processes

Chapter 10 : Biotechnology and its Applications

Rationalised 2023-24

ECOLOGY

Chapter 11 : Organisms and Populations

Chapter 12 : Ecosystem

Chapter 13 : Biodiversity and Conservation

PRACTICALS

1. Two experiments
2. Slide preparation
3. Spotting
4. Investigatory project and viva based on the project
5. Record and Viva based on the experiment

LIST OF EXPERIMENTS

1. Study pollen germination on a slide.

2. Collect and study soil from different sites and study them for texture and moisture content.

3. Study the pH and Water holding capacity of soil. Correlate with the kinds of plants found in them.

4. Collect water from different water bodies around you and study them for pH clarity and presence of any living organisms.

5. Study the presence of suspended particulate matter in air at the two widely different sites.

6. Study of plant population density by quadrat method.

7. Study of plant population frequency by quadrat method.

STUDY/OBSERVATION OF THE FOLLOWING (SPOTTING)

1. Study of flowers adapted to pollination by different agencies (weed, insect)
2. Study of pollen germination on a slide.
3. Study and identify stages of gamete development i.e. t.s. testis and t.s. ovary through permanent slide.
4. Study meiosis in onion bud cell or grass hopper testis through permanent slide.
5. Study of t.s. of blastula through permanent slide.
6. Study Mendelian inheritance using seeds of different colour/size of any plant.
7. Study prepared prediqree charts of genetic traits such as rolling of tongue, blood groups, widow's peak, colour blindness.
8. Exercise on controlled pollination-emasculation, tagging and bagging.
9. To identify common diseases causing organism like Ascaris, Antamoeba, Plasmodium, ringworm. Comment of symptoms of diseases that they cause through permanent slides or specimens.
10. Study plants and animals found in xerophytic condition. Comment upon their adaptation/ecosystem.
11. Study plants and animals found in aquatic conditions. Comment upon their adaptation/ecosystem.
12. Study analogous and homologous organs in various plants and animals.