BI101 INTRODUCTION TO BIOLOGY

Credits: 3: 0 : 0
Marks: (40 + 60)

Unit – 1: Biodiversity and Evolution of Life
Salient features of - fungi, algae, protozoa and chordate.
Viruses: types and structure of both plant and animal viruses—life cycle of phage and HIV—diseases of both plant and animal viruses.
Bacteria: classification—reproduction mode—beneficial and harmful effects.
Microscopy - Principle and working methodology of compound microscope
Structure of prokaryotic and eukaryotic cell— cell division

Unit II- Anatomy / morphology of plants
Plant morphology: brief outline on root, stem, leaf, flower, fruit and seed of angiosperms.
Plant anatomy: tissue and tissue systems— anatomy of monocot and dicot roots and stems—anatomy of leaf.

Unit III - Anatomy of animals
Human anatomy: overview of the following systems: integumentary—skeletal—muscular—respiratory—circulatory—lymphatic—nervous—endocrine—excretory, reproductive system in animals

Unit – IV : Physiology of plant
Cell as a physiological unit—transport of water and mineral nutrients—translocation of solutes; photosynthesis: photophosphorylation—C4 and C3 pathway—Photorespiration (C2 cycle); mode of nutrition; chemosynthesis; respiration; plant growth.
Reproduction in angiosperms—Germination of seeds.

Unit V- Animal and Human Physiology
Frog’s egg - Cleavage—gastrulation in frog embryo—organogenesis in frog.
Overview of digestion—respiration—circulation—excretion—physiological co-ordination in humans

Text Book :

BI102 BIOLOGY LAB

Credits 0:0:2
Marks (50+50)

6 experiments each from Botany and Zoology will be notified by the HOD from time to time.
BI102 BIOLOGY LAB

Credits 0:0:2 Marks (50+50)

Botany :

1. Anatomy of plant parts : to identify & write notes on the following slides :
   i. T.S. of dicot plant stem, leaf, and root
   ii. T.S. of monocot plant stem and root

2. Plant physiology : to describe the experimental set up on
   i. Photosynthesis
   ii. Respiration
   iii. Osmosis
   iv. transpiration

3. Cell biology and genetics : to describe,
   i. the model of DNA/photograph of DNA
   ii. the types of RNA as seen in photograph
   iii. callus/plantlets in tissue culture (Real specimens or photographs)

Zoology :

1. Study of parts of a compound microscope and dissection microscope.
2. Demonstration of frog-buccal cavity, viscera and digestive system.
3. Demonstration of blood circulation in the wing of a live cockroach.
4. Study of prepared slides of entamoeba, scolex of tape worm, mature proglottis, red blood corpuscles, white blood corpuscles.
6. Test of urea in urin of a mammal.
7. Human anatomy :
   a. upper and lower jaw with dentition
   b. models/actual bones-humerus, radius ulna, femur, tibia, fibula, vertebrae, pelvic girdle.