

BI101 INTRODUCTION TO BIOLOGY

Credits: 3: 0 : 0

Marks: (40 + 60)

Unit – 1: Biodiversity and Evolution of Life

Systematics : diversity in living organisms–systems of classification–taxonomic systems–nomenclature methods.

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.

Evolution : origin of life – theories of evolution.

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 :

- 1) Biology (Zoology), higher secondary first and second year, Tamil nadu text book corporation, First edition, 2004 & 2005.
- 2) Biology (Botany), H.S.C- first and second year Tamil nadu text book corporation, first edition, 2004 & 2005.

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

Karunya University

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.
5. Models and specimens of mammalian brain/model, eye model, ear model, mammalian kidney-nephron model, heart model.
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.