

Exam. Code : 206601
Subject Code : 4754

M.Sc. Bio-Informatics 1st Semester (Batch 2021-23)
BASIC CONCEPTS IN BIOLOGY

Paper : BI-511

Time Allowed—3 Hours] [Maximum Marks—75

Note :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The **FIFTH** question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. (a) Make a well labeled diagram of a plant and an animal cell.
- (b) Explain diffusion and osmosis. 10+5
2. Write a note on the following :
 - (a) Chloroplast
 - (b) Nucleus
 - (c) Endoplasmic reticulum. 5×3

SECTION—B

3. (a) Explain the phases and regulation of cell cycle.
- (b) Compare A and Z isoforms with double helix of DNA. 6+9
4. Differentiate between mitosis and meiosis. 15

SECTION—C

5. Write a note on the following :
 - (a) Chemical structure of ketoses
 - (b) Polysaccharides
 - (c) Open and closed forms of sugars. 5×3
6. (a) Describe the quaternary structure of proteins.
- (b) Differentiate between a helix and pleated sheet of protein. 7.5×2

SECTION—D

7. Describe the following :
 - (a) Chromosome theory of inheritance
 - (b) Concept of alleles
 - (c) Complementation Tests. 5×3
8. Differentiate between the following :
 - (a) Codominance and incomplete dominance
 - (b) Genomic imprinting and penetrance
 - (c) Sex linked and sex limited characters. 5×3