2024

(FYUGP)

(1st Semester)

BOTANY

(Major)

Paper Code : C–2 BCC–02

(Biomolecules and Cell Biology)

Full Marks : 75
Pass Marks : 40%

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer **five** questions, taking **one** from each Unit

UNIT—I

1. Discuss the different types of chemical bonds. Discuss pH and buffers. 9+3+3=15

2. Write notes on any *two* of the following : 7½×2=15

(a) Classification of carbohydrates with suitable examples

(b) Classification and structure of lipids

(c) Structure and function of fatty acids

UNIT—II

3. What are amino acids? Describe the different levels of protein structures. 5+10=15

4. Write notes on any *two* of the following : 7½×2=15

(a) Structure of DNA

(b) Structure of tRNA

(c) Structure and functions of nucleotides

UNIT—III

5. Write notes on any *two* of the following : 7½×2=15

(a) Laws of thermodynamics

(b) Redox reactions

(c) Endergonic and exergonic reactions

6. What are enzymes? Give the various classifications of enzymes. Describe the various theories on the mechanism of action. 3+3+9=15

UNIT—IV

7. What is a cell? Describe the structure and function of a plant cell with suitable diagram. 3+12=15

8. Write notes on any *two* of the following : 7½×2=15

(a) Fluid mosaic model

(b) Meiosis and its significance.

(c) Active and passive transport

UNIT—V

9. Write notes on any two of the following : 7½×2=15

(a) Structure and functions of nucleus

(b) Structure and functions of chloroplast

(c) Smooth and rough endoplasmic reticulum

10. Discuss the structural organization of mitochondria. Write a note on the semi-autonomous nature of mitochondria and chloroplast. 6+9=15

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