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(CBCS)

(1st Semester)

BOTANY

(Honours)

Paper Code : 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 **one** question each from _any_ **five** Units

UNIT—I

1. (a) What are biomolecules? Write a note on nomenclature and classification of carbohydrates. 2+13=15

_Or_

(b) Write notes on the following : 7½+7½=15

(i) Secondary level of protein structure

(ii) Structure of DNA

(Turn Over)

UNIT—II

2. (a) Define bioenergetics. Write a note on the structure of ATP and its role as an energy currency molecule.   2+13=15

Or

(b) Write short notes on the following :
     7½+7½=15

(i) Laws of thermodynamics

(ii) Endergonic and exergonic reactions

UNIT—III

3. (a) What are enzymes? Describe the types of enzymes and their mechanism of action.   2+13=15

Or

(b) Write short notes on the following :
     7½+7½=15

(i) Lock and key hypothesis

(ii) Michaelis-Menten equation

UNIT—IV

4. (a) Define cell. Write down the structure of a prokaryotic cell with labelled diagram.
     2+13=15

Or

(b) Write notes on the following : 7½+7½=15

   (i) Cell as the basic unit of structure and function

   (ii) Characteristics of eukaryotic cell

UNIT—V

5. (a) Write down the structure and function of plant cell wall. 15

Or

(b) Write notes on the following : 7½+7½=15

   (i) Endocytosis and exocytosis

   (ii) Fluid-mosaic model of plasmic membrane

UNIT—VI

6. (a) What is cytoskeleton? Write an account on the structure and function of micro-tubules and microfilaments. 2+13=15

Or

(b) Write notes on the following : 7½+7½=15

   (i) Structure and function of nucleus

   (ii) Structure and function of mitochondria

UNIT—VII

7. *(a)* What is reductional cell division? Write different phases of mitosis with suitable diagrams. 15

<p align="center">*Or*</p>

(b) Write notes on the following : 7½+7½=15

(i) Phases of eukaryotic cell cycle

(ii) Regulation of cell cycle

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