



**2022/TDC/ODD/SEM/
BOTHCC-102T/136**

TDC (CBCS) Odd Semester Exam., 2022

**BOTANY
(Honours)**

(1st Semester)

Course No. : BOTHCC-102T

(Biomolecules and Cell Biology)

Full Marks : 50

Pass Marks : 20

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

UNIT—I

1. Answer any two of the following : 2×2=4

(a) What is buffer solution?

(b) Write a note on pH.

(c) Classify carbohydrates.

2. Answer any one of the following : 6

(a) What are the different levels of protein structure? Briefly discuss the Ramachandran Plot. 4+2=6



MBA/00/00/133 (2)

(b) Give a detailed account of structure of tRNA. Write the features of B-DNA. 4+2=6

BOTANY
UNIT—II
(Honours)

3. Answer any two of the following : 2×2=4

- (a) Give examples of polysaccharides.
- (b) Write a note on redox reactions.
- (c) Write a note on induced fit theory.

4. Answer any one of the following : 6

- (a) Write notes on : 3+3=6
 - (i) Co-factors
 - (ii) Allosteric enzymes
- (b) Give an account of Michaelis-Menten equation. 6

UNIT—III

5. Answer any two of the following : 2×2=4

- (a) Write the features of prokaryotic cells.
- (b) Differentiate between endocytosis and exocytosis.
- (c) Differentiate between active and passive transport.

J23/90

(Continued)

(3)

6. Answer any one of the following : 6

(a) Write notes on : 3+3=6

- (i) Endosymbiotic theory
- (ii) Proton-pumping ATPase

(b) Describe the fluid mosaic model of plasma membrane with suitable diagram. 4+2=6

UNIT—IV

7. Answer any two of the following : 2×2=4

- (a) Enlist at least two functions of endoplasmic reticulum.
- (b) Write the functions of cell wall.
- (c) Write a note on cytoskeleton.

8. Answer any one of the following : 6

- (a) Give a detailed account of lysosomes and their functions. 4+2=6
- (b) Write notes on : 3+3=6
 - (i) Nuclear pore complex
 - (ii) Histone proteins

J23/90

(Turn Over)



(4)

UNIT—V

9. Answer any *two* of the following : 2×2=4

(a) What are cyclin-dependent kinases (cdks)?

(b) What are the functions of cell-cycle checkpoints?

(c) Write the significance of mitosis.

10. Answer any *one* of the following : 6

(a) Write notes on : 3+3=6

(i) MAP Kinase

(ii) Difference between mitosis and meiosis

(b) Give an account of prophase—I of first meiotic division. Point out the significance of meiosis. 4+2=6

★ ★ ★