



**2022/TDC/ODD/SEM/
BTCHCC-101T/298**

TDC (CBCS) Odd Semester Exam., 2022

BIOTECHNOLOGY

(Honours)

(1st Semester)

Course No. : BTCHCC-101T

(Biochemistry and Metabolism)

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 do you mean by peptide bond?
How is it formed?

(b) Name two aromatic amino acids.

(c) What do you mean by secondary
structure of protein? Give one example.



(2)

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

(a) Discuss the structure of tertiary protein.
How is tertiary structure stabilised? 2+4=6

(b) Write about the properties of amino acids with examples.

UNIT—II

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

(a) Differentiate between homo- and heteropolysaccharides with examples.

(b) Write a note on cellulose.

(c) Write the polysaccharide components of bacterial cell wall.

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

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

(i) Disaccharides

(ii) Glycoproteins

(b) Discuss the role of polysaccharides in living system. Add a note on mucopolysaccharides. 3+3=6

(3)

UNIT—III

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

(a) Differentiate between nucleoside and nucleotide.

(b) What is glycolipid? Give examples.

(c) What do you mean by denaturation of DNA?

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

(a) Write about the chemical composition of nucleic acid. Discuss the structural features of A-DNA, B-DNA and Z-DNA. 3+3=6

(b) Write notes on the following : 3+3=6

(i) Cholesterol

(ii) Phospholipids

UNIT—IV

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

(a) What is cofactor? Give example of cofactor.

(b) What is prosthetic group? Give an example.

(c) What do you mean by enzyme active site?



(4)

8. Answer any one of the following : 6

(a) Classify enzymes with examples.

(b) Write about the mechanism of enzyme action with the help of suitable models.

What is transition state? 5+1=6

UNIT—V

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

(a) Write the final product of glycolysis. Write the fate of this product.

(b) Where does respiratory electron transport chain reaction take place? Write the importance of ETS.

(c) Define gluconeogenesis. What is the importance of gluconeogenesis?

10. Answer any one of the following : 6

(a) Give an explanatory note on oxidative phosphorylation.

(b) Write notes on the following : 3+3=6

(i) Glycogenolysis

(ii) β -oxidation of fatty acid

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