

2025

M.Sc. 1st Semester Examination

BIOTECHNOLOGY

Paper : BITC401X1

[Biochemistry and Metabolism]

Full Marks : 25

Time : One Hour

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

Answer any *two* questions : $2 \times 2 = 4$

1. What are the regulatory enzymes of glycolysis?
2. What is collagen triple helix? Which vitamin is required for collagen synthesis?
3. Name two essential fatty acids and why these are essential?
4. What is anaplerotic reaction?

Group - B

Answer any *two* questions : $4 \times 2 = 8$

5. Write a note on electron transport chain. What is cytochrome oxidase?

3+1

P.T.O.

(2)

6. Write a note on urea cycle. Give its significance.
7. Briefly describe how one molecule of glucose is converted to acetyl CoA.
8. Briefly describe the key features of DNA double helix. What do you mean by melting temperature of DNA.

3+1

Group - C

Answer any *one* question : $8 \times 1 = 8$

9. Explain β -oxidation of fatty acids and its regulation. Discuss pentose phosphate pathway highlighting its oxidative and non-oxidative phases. $3+2+3$
10. Give example of oxidoreductase type enzyme. What is Michaelis constant? How is it related with enzyme kinetics? Briefly explain about the allosteric enzyme activity. $2+1+2+3$

Internal Assessment : 5 marks
