

2025

M.Sc. 1st Semester Examination

**BIOTECHNOLOGY AND
BIOINFORMATICS**

Paper : BTIE406A0

**[Biochemistry of Macromolecules
and Secondary Metabolites]**

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. State the significance of gluconeogenesis.
2. Why non-covalent bonds are called as 'dance of life'?
3. Write the weak forces that stabilizes the protein structure.
4. Write the structural difference between amylose and amylopectin.

P.T.O.

(2)

Group - B

Answer any *two* questions : 4×2=8

5. State the effect of competitive inhibitors on K_m and V_{max} .
6. Describe the metabolic significance of pentose phosphate pathway.
7. Describe β -oxidation of fatty acid.
8. State the role of vitamin in metabolism with an example.

Group - C

Answer any *one* question : 8×1=8

9. Write short notes on : 4×2
 - (i) Glycolysis
 - (ii) Deamination and transamination
10. What is coenzyme? Explain the roles of pH and temperature affecting the activity of enzymes. Write a short note on Michaelis-Menten Equation. 2+4+2

Internal Assessment - 5 marks
