

2025

M.Sc. 1st Semester Examination

BIOCHEMISTRY

Paper : BICC405X1

(Cell and Molecular Biology)

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 is the importance of 5'-capping in matured m-RNA molecule?
2. Define SOS repair of DNA.
3. What is c-AMP? Mention its role.
4. Mention the role of r-RNA in translation.

**Group - B**

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

5. Compare the Prokaryotic and Eukaryotic DNA polymerases.

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6. Briefly discuss the initiation of translation in prokaryotes.
7. Describe the process of gene regulation occur in lac operon.
8. Write a brief note on nucleotide excision repair.

**Group - C**

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

9. What is cellular signaling? Describe one major type of signaling pathway involving IP3 and DAG as second messengers.  $2+6$
10. Discuss about the passive and active transport. Write the different types of phospholipids and their functions.  $4+4$

**Internal Assessment : 5 marks**

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