

A-0990

Total Pages : 3

Roll No.

MSCCH-603

M.Sc. Chemistry (MSCCH)

**Bio-Inorganic, Bio-Organic and
Bio-Physical Chemistry**

Examination February, 2026

Time : 2:00 Hrs.

Max. Marks : 70

Note :- This paper is of Seventy (70) marks divided into Two (02) Sections 'A' and 'B'. Attempt the questions contained in these Sections according to the detailed instructions given therein. *Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.*

Section-A

Long Answer Type Questions (2×19=38)

Note :- Section 'A' contains Five (05) Long-answer type questions of Nineteen (19) marks each. Learners are required to answer any *two* (02) questions only.

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(1)

P.T.O.

1. Write notes on the following :
 - (a) Metalloporphyrin
 - (b) Cytochrome P-450
 - (c) DNA polymerization
2. Describe the structure, classification, and general functions of lipids in living organisms.
3. Explain the following :
 - (a) Transition state theory
 - (b) How catalyst lower the energy of activated transition state ?
 - (c) Active site of an enzyme
4. What are the different methods of determination of the shape of particles of biopolymers ?
5. Discuss the techniques and methods of immobilization of enzymes.

Section–B

Short Answer Type Questions (4×8=32)

Note :- Section 'B' contains Eight (08) Short-answer type questions of Eight (08) marks each. Learners are required to answer any *four* (04) questions only.

1. Write a note on the synthesis of ATP.
2. How enzymes can be used as a target for drug design ?
3. Describe the structure, source, and biological functions of pyridoxal phosphate (PLP).
4. Explain the mechanism of enzyme action in cleavage and condensation reactions.
5. Discuss the different types of protein structure.
6. Write a note on the toxicity of metals.
7. What are essential and trace metals ? Give the role of iron and manganese in Biological System.
8. Describe the mode of action of the nitrogenase enzyme complex involved in biological nitrogen fixation.
