

**A-067**

Total Pages : 3

Roll No. ....

**MSCCH-603**

**M.Sc. CHEMISTRY (MSCCH)**

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

3rd Semester Examination, 2024 (June)

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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P.T.O.

- Explain structure of the porphyrin ring with the help of the diagram ?
  - Write down the function of ferritin and transferrine ?
- Explain the cytochrome P-450 is a monooxygenase. Discuss about the special features of cytochrome P-450 and its mechanism.
- What are processes involving nucleophilic displacement ? Describe their mechanism using an appropriate example ?
- What is immobilization of enzyme ? Explain, various method of immobilization with help of suitable examples.
- What are the main theoretical models that try to explain the formation of the enzyme-substrate complex ?

### **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.

- Discuss the transition state theory.
- Define nucleic acid. What are the nitrogen bases of nucleic acid. What are the difference between purines and pyrimidines ?

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3. Write a short notes on :
  - (a) Glycosidic bond
  - (b) Ribonucleic acid
4. Discuss the process of ATP hydrolysis.
5. Why are co-enzymes necessary. Explain.
6. Give detailed notes on “use of enzymes in food industry”.
7. Discuss the structure and function of Haemoglobin and myoglobin.
8. Define the biopolymer and discuss the techniques involved in the determination of molecular mass of biopolymer.

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