No. of Printed Pages : **2**

21CHE4C11L

Sl. No.

M.Sc. IV Semester Degree Examination, Sept./Oct. - 2024

CHEMISTRY

DSC - 11 : Bioinorganic and Organometallic Chemistry

(NEP)

Time : 3 Hours Maximum Marks : 70

Note : *Answer **any five** of the following questions with question No.**1** compulsory each question carries **equal** marks.*

1. (a) With neat diagram, explain the transportation of Na^+/K^+ ions across the cell membrane. **5+5+4**

(b) Discuss the structural features of carboxy peptidase. Outline its mechanism of Action.

(c) Write a note on Chelation therapy.

2. (a) Write notes on hemerythrin and hemocyanins. **5+5+4**

(b) Discuss the effects of Metal-Ion Concentrations in biological systems.

(c) Write a note on Cytochrome.

3. (a) Explain *Invivo* and *Invitro* nitrogen fixation. **5+5+4**

(b) What is Homeostasis ? Explain calcium homeostasis.

(c) Explain role of Magnesium in biological system.

4. (a) Explain the utility of Ziegler-Natta catalysis. **5+5+4**

(b) Write a note on oxidative addition and reductive elimination reactions.

(c) Explain water gas shift reactions.

5. (a) Explain the working principle of hydrogen storage materials and molecular materials. **5+5+4**

(b) Discuss polymers with organometallic moieties as pendent groups.

(c) Write a detailed note on ferrocene based condensation polymers.

P.T.O.

6. (a) Discuss CO binding to myglobin and haeamoglobin. **5+5+4**
(b) Explain the role of Chlorophyll in photosynthesis.
(c) What are the Hammerhead ribozyme ?

7. (a) With example explain substitution in carbonyl complexes. **5+5+4**
(b) Write a note on inorganic pigments and fullerides.
(c) Explain hydrogenation of Olefins.

8. (a) What are protein tuning of active sites ? Explain. **5+5+4**
(b) Discuss Wacker's process.
(c) Explain potassium and sodium Homeostasis.

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