

(4)

Total Pages—4 M.Sc.-IVS—Chem (CE-513)

Or

2017

Explain the process of molecular assembly
in supramolecular chemistry.

Time : 3 hours

Full Marks : 80

Answer from **both** the Sections as per direction

The figures in the right-hand margin indicate marks

**(BIO-INORGANIC AND SUPRA
MOLECULAR CHEMISTRY)**

SECTION – A

- 1. Answer any *four* questions from the following : 4 × 4**
- (a) Explain the role of calcium in muscle contraction.
 - (b) What is the process of photosynthesis I (PSI)
 - (c) Write briefly on nitrogen fixation.
 - (d) Write the importance of vitamin B12 in human body.

(2)

- (e) Write about crown ether to be used as pillaring agent.
- (f) What are photochemical sensors ? Give examples.

Or

2. Answer *all* the following questions : 2×8

- (a) What is the importance of essential trace elements in biological system ?
- (b) Define biological calcification.
- (c) Write the need of Iron-Sulphur proteins.
- (d) Write the functions of hemoglobin.
- (e) Write the functions of magnesium enzymes.
- (f) What is meant by carboxy peptidase ?
- (g) Define supramolecule; give examples.
- (h) What do you understand by electrochemical sensors ?

(3)

SECTION – B

Answer all questions : 16×4

3. What are biological membranes ? Explain the mechanism of ion-transport across membranes.

Or

Write in detail about sodium pump.

4. Discuss the structure and functions of haemoglobin.

Or

Explain the Bio-inorganic aspects of nitrogen fixation.

5. Explain carboxy peptidase cycle.

Or

Explain cytochrome P-450 cycle.

6. Write about the supra molecular recognition by anionic substrate and coreceptor molecules.