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**GIET UNIVERSITY, GUNUPUR – 765022**  
M. Sc. (Fourth Semester) Examinations, May – 2021  
**CHPE 404 – BIO-INORGANIC AND SUPRAMOLECULAR CHEMISTRY**  
**(Chemistry)**

Time: 2 hrs

Maximum: 50 Marks

(The figures in the right hand margin indicate marks.)

**PART – A****(2 x 10 = 20 Marks)**Q.1. Answer **ALL** the questions

- a. What is meant by sodium pump?
- b. Drawing the structure of chlorophyll
- c. What is the function of cytochrome P450?
- d. What are metalloproteins?
- e. Write down the chemical equation of photosynthesis
- f. What are the applications of carboxypeptidase
- g. What is meant by supra molecules?
- h. What do you understand by supra molecular catalysis?
- i. How does supra molecular devices is suitable for sensors
- j. Mention the importance of iron-sulphur proteins

**PART – B****(6 x 5 = 30 Marks)**Answer ANY FIVE questions

Marks

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| 2. Explain the role of inorganic elements in biological systems                           | (6) |
| 3. Describe the structure and work function of Haemoglobin                                | (6) |
| 4. Describe crown ether complexes of Na <sup>+</sup> acted as ionophore                   | (6) |
| 5. Explain the bio-inorganic aspects of nitrogen fixation                                 | (6) |
| 6. Write short notes on superoxide dismutase  | (6) |
| 7. Describe the structure and function of Vitamin B <sub>12</sub>                         | (6) |
| 8. Describe the molecular recognition of supra molecules                                  | (6) |
| 9. Illustrate the supra molecular devices in terms of photochemical and binding mechanism | (6) |

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