

PD-494 CV-19
(534) M.Sc. CHEMISTRY (FOURTH SEMESTER)
Examination JUNE- 2021
Compulsory/Optional
Group -
Paper - III

Name/Title of Paper- BIOINORGANIC CHEMISTRY & SUPRA-MOLECULAR CHEMISTRY

Time:- Three Hours

Maximum Marks- 080

Minimum Passing Marks-029

Note: Answer From Both the Section as Directed. The Figures in the right-hand margin indicate marks.

Section-A

(1) Answer the following questions-

1x10=10

- a. Which metal ions are responsible for secreting digestive juice?
- b. What is siderophones?
- c. What constitute a lermo protcih?
- d. What is vaska complex?
- e. What are Bio-Mimitics?
- f. Cytochrome P-450 acts on various _____ and _____
- g. Which vitamin have coenzyme activity?
- h. Which metal ion is present in xanthineoxidase?
- i. What type of binding is present in supramolellar structure?
- j. What is diionic substrate?

(2) Answer the following questions:-

2x5=10

- a. What is the basic function of fermitin?
- b. What are the function of caboxy peptidase?
- c. Explain one fundamental reaction of transition metal complexes with polynucleotide.
- d. Explain the structure of Drugs which generally used in chemotherapy against Cancer.
- e. What are supramolecular devices? Explain about electronic devices.

Section-B

12x5=60

3. (i) Explain the role of C_a^{2+} ion indifferent types of muscular contraction. How C_a^{2+} ions regulate in living Cells.

(ii) Discuss the functions of extra cellular binding protein.

Or

(i) Discuss the characteristics of metal binding sites in ferritin.

(ii) Explain the structure of siderophone which contain both phendata and hydroxamale group.

4. (i)What are metallo enzyme? Discuss the structure of Iron enzyme catalase.

(ii) Discuss the catalytic mechanism xanthine oxidase.

Or

(i) What are the biological functions coenzyme vitamin - B₁₂- Explain structure of compound A, B, C and D.

(ii) Explain the chemistry of iron enzyme catalyse.

5. Give a brief account of metal deficiency and diseases caused. Discuss the toxic effects of different metals.

Or

- (i) Discuss application of different metal complexes that binds to nucleic acid.**
- (ii) What is hydrolytic chemistry? Explain at least one hydrolysis reaction catalysed by metal and complexes.**

6.(i) Give a brief account of molecular reorganization.

(ii) Explain structure of at least one supramolecular receptors.

Or

(i) Give a brief account of supramolecular reactivity and catalysis.

(ii) Write notes on arisonic substrate.

7. (i) Discuss the transport process and carrier design in context to supramolecule.

Or

Write notes on the following:-

- (i) Self assembly**
- (ii) Switching devices**