

PC-494
(534) M.Sc. CHEMISTRY (FOURTH SEMESTER)
Examination JUNE 2020
Compulsory/Optional
Group -A
Paper - IV

BIO INORGANIC CHEMISTRY & SUPRA-MOLECULAR CHEMISTRY

Time:- Three Hours]

Maximum Marks : 80

Minimum Passing Marks: 29

नोट : दोनों खण्डों से निर्देशानुसार उत्तर दीजिए। प्रश्नों के अंक उनके दाहिनी ओर अंकित हैं।

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) Write the oxidation state of iron in ferretin and transferrin
- (b) Which metal ion is present in carboxy peptidase A)
- (c) The prosthetic group of carboxy peptidase contain -----
- (d) What is the main function of siderophores ?
- (e) What does osteoporosis means?
- (f) What is open enzyme?
- (g) What type of guest would a crown ether be able to bind.
- (h) What kind of binding is present in supramolecular Structure?
- (i) Which of the following is an example of a supramolecule
(i) Glucose (ii) DNA (iii) Thymine (iv) caffeine
- (j) What is photonics?

2. Answer the following questions:-

2x5 = 10

- (a) What is bio mineralization
- (b) Draw the structure of carboxy- peptidase
- (c) What is called coenzymes give example
- (d) What is pre organisation and complementary.
- (e) What do you understand by chemistry?

Section -B

Answer all:- questions.

12x5 = 60

3. Write about importance of calcium for living beings. Give brief account of its transport and regulation.

Or

Explain:-

- (i) Iron binding by transferrin.
- (ii) Mobilization of Fe^{3+} by siderophores

4. (i) What are cytochromes what are their functions.

(ii) Enlist the function of catalase and peroxidase

Or

Discuss the structure and function of vitamin B₁₂ and xanthenes oxidase

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

Or

- (i) Comment on metal complex- nucleic and interaction.
- (ii) Discuss the role of metal and metal complexes in medicine.

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

(ii) Write a note on molecular receptors

OR

Explain supra molecular reactivity and catalysis.

7. Discuss the transport processes and carrier design in context to supramolecule.

OR

Write notes an:-

- (i) Switching devices
- (ii) supramolecular photochemistry