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(FOR THE CANDIDATES ADMITTED DURING THE ACADEMIC YEAR 2021-22 ONLY)

SUB CODE 21PCY413

REG.NO. :

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : MAY – 2023

M.Sc. – CHEMISTRY **MAXIMUM MARKS: 70**

IV SEMESTER **TIME : 3 HOURS**

INORGANIC CHEMISTRY-III

BIOINORGANIC AND INORGANIC PHOTOCHEMISTRY

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.
MULTIPLE CHOICE QUESTIONS. (K1)

1. The elements necessary for life process are called _____.

a) Essential b) Trace c) Micro d) Macro

2. Which activates the chlorophyll in plants?

a) Na b) Mg c) Ca d) Cd

3. Metalloporphyrin's are complexes formed between _____.

a) Metal and Non-metals b) Metal and porphyrins

c) Non- metal and porphyrins d) Metal and alcohol

4. Grignard reagents reacts with carbonyl group to form _____.

a) Acid b) Alcohol c) Ethers d) Esters

5. Photochemical reactions takes place due to _____.

a) UV-Vis radiation b) F c) Only visible d) X-ray

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES (K2)

6. What is bioinorganic chemistry?

7.Write a note on important metals present in Medicine.

8. What is porphyrin ring system?

9. Write a note on homogeneous catalyst.with example.

10. Define: Insertion reaction .

SECTION – B (5 X 4 = 20 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a) Write a note on essential and trace elements in biological systems .

(OR)

b) Give an account of active and passive transport theory.

12. a) Explain binding of metal ions and complexes to biomolecules.

(OR)

b) Give an account of chemotherapy.

13. a) Write note on cytochrome.

| (OR)

b) Write the structure and photosynthetic sequence of chlorophyll.

14. a) What is olefin hydrogenation ?

(OR)

b) Write a note on Ziegler-Natta catalysis.

15. a) Give an account of CO insertion reaction and SO_2 insertion reaction.

(OR)

b) Write a note on one electron oxidative addition.

SECTION – C (4 X 10 = 40 MARKS)

ANSWER ANY FOUR OUT OF SIX QUESTIONS
(16th QUESTION IS COMPULSORY AND ANSWER ANY THREE QUESTIONS (FROM Qn. No : 17 to 21) (K4 (Or) K5)

16. Write a note on metal ion deficiency disease and its consequences.
17. Give an account of classes of toxic metal compounds
18. Explain the structure of Nucleic acid and fundamental interactions of complexes with Nucleic acids
19. Write a note on structure and work functions of Haemoglobin and myoglobin
20 Explain the olefin dimerization and metathesis
21. Explain the following
    (i) Photochemical reactions of metal carbonyls
    (ii) Photolysis of water (5+5)

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ETHICAL PAPER