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(FOR THE CANDIDATES ADMITTED DURING THE ACADEMIC YEAR 2022 ONLY) **SUB CODE 22PCY413**

REG.NO. :

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

END-OF-SEMESTER EXAMINATIONS : MAY-2024

MSc CHEMISTRY **MAXIMUM MARKS: 50**

SEMESTER-IV **TIME : 3 HOURS**

INORGANIC CHEMISTRY-III-BIOINORGANIC CHEMISTRY

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.(K1)

1. Which of the following is not an accessory pigment?

(a) Chlorophyll (b) Hemogloboin (c) Myoglobin (d) Carotenoid

2. Choose the cytosolic enzyme _____

(a) Carboxase (b) Urease (c) Zymase (d) Peptidase

3. What is the hybridization observed in metallo porphyrin system?

(a) Sp (b) Sp^3 (c) dSp^3 (d) Sp^2

4. Which of the following is an nucleic acid?

(a) DNA (b) Ribase (c) Sorbitol (d) All the above

5. Choose the anticancer medicine_____

(a) Gabatin (b) NexproRD (c) Cisplatin (d) Tropan

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

6. Define-Photosynthesis.

7. Distinguish between nitrogenase and Hydrogenase.

8. Define- Coenzymes.

9. Expand-MRI and DNA .

10. Differentiate between Chemotherapeutic index and therapeutic index.

SECTION – B (5 X 3 = 15 MARKS)

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

11. a) List and explain the uses of metals and non-metals in biological system

(OR)

b) Describe the structure and function of sodium potassium pump

12. a) Compare carboxy peptidase and carbonic anhydrase

(OR)

b) Describe the structure and function of Xanthine oxidase

13. a) Compare between-Ferridoxins and Rubredoxins

(OR)

b) Describe the structure of Vitamin B12.

14. a) List and explain the binding of metal ions and complexes to biomolecules.

(OR)

b) Describe the Radio diagnostic agents

15. a) Compare between Bleomycin and Doxorubicin

(OR)

b) Describe the Bioinorganic chemistry of platinum anticancer drugs

SECTION – C (5 X 5 = 25 MARKS)

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

(K4 (Or) K5)

16. a) Analyze the essential and trace elements in biological system.

(OR)

b) Defend the structure-function relationship of in-vivo and in-vitro nitrogen fixation.

17. a) Discuss the structure and function of Superoxide dismutase.

(OR)

b) Summarize the active site structure and mechanism of action of- Carboxy peptidase-A and Carbonic anhydrase .

18. a) Point out the structure and function of Hemeoglobin .

(OR)

b) Discuss the structure and function of Non-heme iron-sulphur proteins .

19. a) Outline the binding interactions of tris-phenanthroline metal complexes with DNA.

(OR)

b) Analyze the chelating agents and therapy based on in vivo chelation of radio nucleotides .(K4)

20. a) Discuss the computer aided drug of Bleomycin and Doxorubicin

(OR)

b) Defend the applications of Coordination complexes in medicine.