Reg. No .....

Name **23U341**

B. Sc. DEGREE END SEMESTER EXAMINATION : NOVEMBER 2023

SEMESTER 3 : COMPLEMENTARY FOR ZOOLOGY AND BOTANY

COURSE : **19U3CPCHE3.2 : BIO-INORGANIC AND HETEROCYCLIC CHEMISTRY**

(For Regular - 2022 Admission and Improvement/Supplementary - 2021/2020/2019 Admissions)

Time : Three Hours Max. Marks: 60

PART A

Answer All (1 mark each)

1. What is meant by genetic code?
2. Give an example for coupled biochemical reaction.
3. The Compound obtained by heating succinaldehyde with phosphorous pentoxide is ----------
4. What is DDT?
5. Name the metal present in chlorophyll.
6. Name two solid organic nitrogenous fertilizers.
7. What does DNA stand for?
8. What is the product obtained when Pyridine reacts with Hydrogen in the presence of Pd or Raney Nickel?

(1 x 8 = 8)

PART B

Answer any 6 (2 marks each)

9. What is the base pairing principle with respect to DNA? How does it guide replication of DNA?
10. Give two examples of metalloporphyrins with their functions.
11. How does DNA differ from RNA with respect to (a) sugar and (b) bases
12. Explain the structure of energy rich molecules.
13. Which is the major photosynthetic pigment in plants? Give its structure.
14. Explain Friedel-Craft's acylation of furan.
15. What are the advantages of Biopesticides?
16. Explain the biological importance of protein chain in hemoglobin?

(2 x 6 = 12)

PART C

Answer any 4 (5 marks each)

17. Explain the structure and function of 2,4 - D and 2,4,5 - T.
18. Draw the oxygen binding curves for hemoglobin and myoglobin and explain them.
19. What is Pyridine? Write its molecular formulae. Draw the resonance structures of Pyridine.
20. Discuss the general structure of nucleic acids.
21. Write a note on the role of DNA in biosynthesis of proteins.
22. Differentiate between exergonic and endergonic reactions with examples.

(5 x 4 = 20)

PART D
Answer any 2 (10 marks each)

23. Give any one method for the preparation of a) Furan, b) Pyridine, c) Indole and d) Pyrimidine.
24. Describe the classification of Pesticides.
25. Explain the structure and functions of following metalloproteins.
    a) Cytochromes b) Ferredoxins
26. Write a note on a) Cytochrome oxidase b) Vitamin B12 c) Nitrogenase with its structure and functions.

(10 x 2 = 20)