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(FOR THE CANDIDATES ADMITTED DURING THE ACADEMIC YEAR 2024 ONLY)

SUB CODE 24UCY101

REG.NO. :

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

END-OF-SEMESTER EXAMINATIONS: NOV-2024

B.Sc CHEMISTRY **MAXIMUM MARKS: 75**

SEMESTER I **TIME: 3 HOURS**

PART - III

INDRGANIC CHEMISTRY-II COORDINATION CHEMISTRY

SECTION A (10X1=10MARKS)

ANSWER THE FOLLOWING QUESTIONS

1.An alkaline earth metal is (K1)

a) Palladium b) Calcium

c) Lead d) Copper

2. According to MOT ,the molecular orbitals are (K1)

a) Polycentric b) Monocentric c) Accentric d) Cannot be predicted

3. Alkenes are (K1)

a) Bent b) Pyramidal

c) Tetrahedral d) Plannar

4. Select the compound containing acidic hydrogen (K1)

a) Ehene b) Ethane c) Ethyne d) Butane

5. Electrophiles are (K1)

a) Rich in electrons b) Neutral

c) More affinity to nucleus d) Less affinity to nucleus

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES

6. What is hydrogen bonding (K2)

7. Define: Hybridisation (K2)

8. What are alkanes (K2)

9. Write a note on alkynes (K2)

10. Define: Huckel's rule (K2)

SECTION B (5X5=25MARKS)

ANSWER EITHER (A) OR (B) IN EACH OF THE FOLLOWING QUESTIONS

11. a) Write a note on characteristics of ionic compounds (K3)

(OR)

b) Explain ion dipole – dipole interactions

12. a) Write a note on bond order and magnetic properties (K3)

(OR)

b) Give an account on sp, sp^2 and sp^3 hybridisation

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13. a) Write a note on homolytic and heterolytic fission (K3)

(OR)

b) Explain electrophiles and nucleophiles with examples

14. a) Write a note on 1,2 and 1,4 addition of butadiene (K3)

(OR)

b) Write any two reactions of alkynes

15. a) Write a note on arenium ion mechanism (K3)

(OR)

b) What are non-benzenoid aromatic compounds

SECTION C (5X8=40MARKS)

ANSWER EITHER (A) OR (B) IN EACH OF THE FOLLOWING QUESTIONS

16. a) Write a note on crystal lattice energy and its determination by Born-Haber cycle (K4)

(OR)

b) Explain Fajan's rule and their applications in explaining melting points and solubility properties

17. a) Write a note on molecular orbital theory (K5)

(OR)

b) Explain the following

(i)Basic principles involved in analysis of cations and anions

(ii)Interfering anions

18. a) Discuss structure, sources and preparation of alkanes (K4)

(OR)

b) Write a note on mechanism of E1 and E2 elimination reactions

19. a) Explain preparation and synthetic utility of ethyl magnesium iodide (K5)

(OR)

b) Explain nomenclature, classification and stability of dienes (K5)

20. a) Write a note on orientation and reactivity of monosubstituted benzene

(OR)

b) Write a note on (i) Mechanism of nitration of benzene (ii) Friedel craft's alkylation and acylation of benzene