

QP CODE: 24000595



Reg No :

Name :

B.Sc DEGREE (CBCS) REGULAR / REAPPEARANCE EXAMINATIONS, MARCH 2024

Sixth Semester

CORE COURSE - CH6CRT09 - INORGANIC CHEMISTRY

Common for B.Sc Chemistry Model I, B.Sc Chemistry Model II Industrial Chemistry & B.Sc
Chemistry Model III Petrochemicals

2017 Admission Onwards

E329CF35

Time: 3 Hours

Max. Marks : 60

Part A

Answer any **ten** questions.

Each question carries **1** mark.

1. Write the IUPAC name of complex $[\text{Co}(\text{en})_3]\text{Cl}_3$.
2. What is ionisation isomerism? Give example.
3. What is chelate effect?
4. Calculate CFSE for $[\text{Cr}(\text{H}_2\text{O})_6]^{3+}$.
5. How does oxidation state of the metal ion affect crystal field splitting in complexes?
6. Give the equation for calculating spin only magnetic moment value.
7. Which type of ligands show high trans effect?
8. What are pi bonded organometallic compounds? Give an example.
9. What is the oxidation state of Fe in Ferrocene?
10. Give an example for a compound exhibiting quadruple bonding.
11. Name the protein part of Haemoglobin.
12. Write two examples for interhalogen compounds.

(10×1=10)

Part B

Answer any **six** questions.

Each question carries **5** marks.

13. Discuss Sidgwick's concept of coordination compounds.



14. What are the evidences for the existence of covalent bonds in complexes? Explain.
15. Explain the application of coordination complexes in quantitative analysis.
16. Write a short note on synergic effect.
17. Write a short note on the catalytic applications of organometallic compounds.
18. Explain the role of Calcium and Magnesium ions in biological systems.
19. Write any two methods for the preparation of diborane. Also explain the properties of diborane.
20. What are pseudohalogens? Describe the important characteristics of pseudohalogens.
21. Explain the preparation, properties and structure of XeO_3 .

(6×5=30)

Part C

Answer any **two** questions.

Each question carries **10** marks.

22. (i) What are the postulates of VB Theory? (ii) Illustrate the formation of all the possible geometries of complexes with coordination number 6.
23. Describe and justify the preferred mechanism for ligand substitution reactions in square planar complexes
24. Discuss in detail, the structure and bonding in (a) $\text{Mn}_2(\text{CO})_{10}$ and (b) $\text{Fe}_2(\text{CO})_9$.
25. What are Anticancer drugs? Explain the structure and significance of cis platin and carboplatin.

(2×10=20)