

**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**



**B.Sc. DEGREE EXAMINATION – CHEMISTRY**

**SIXTH SEMESTER – APRIL 2022**

**UCH 6501 – COORDINATION CHEMISTRY**

Date: 15-06-2022

Dept. No.

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

**PART – A**

Answer **ALL** questions

**(10 x 2 = 20)**

1. Define EAN.
2. What are polydentate ligands? Give an example.
3. Differentiate high and low spin complexes.
4. Define “Term Symbol”.
5. What are Vaska’s complexes? Give an example.
6. Describe electron transfer reactions.
7. What is Ziegler Natta catalyst? Mention its use.
8. List the differences between polynuclear and bridging carbonyls.
9. Write about *in vivo* and *in vitro* nitrogen fixation.
10. What do you mean by chelate therapy?

**PART – B**

Answer any **EIGHT** questions

**(8 x 5 = 40)**

11. Write the limitations of VBT.
12. Explain the optical isomerism found in coordination complexes with suitable example.
13. Describe Sidgwick theory of coordination complexes with suitable example..
14. Write notes on Nephelauxetic effect.
15. Discuss the computation of CFSE.
16. Differentiate oxidative and reductive elimination reactions.
17. Explain the thermodynamic stability of complexes.
18. How will you apply template effect in the synthesis of macrocyclic ligands
19. Discuss the role of Wilkinson catalyst in alkene hydrogenation.
20. Describe the structure of ferrocene.
21. Discuss the biological role of carboxy peptidase.
22. Explain the structure and functions of myoglobin.

**PART – C**

Answer any **FOUR** questions

**(4 x 10 = 40)**

23. Discuss the geometry of tetrahedral complexes using VBT.
24. Derive ground state term symbol in complexes.
25. (i) Explain the following terms **(3+3)**  
(a) Jahn- Teller distortion      b) Spectrochemical series  
(ii). Describe d- orbital splitting in octahedral complexes. **(4)**
26. Give a brief account on substitution reaction in square planar complexes.
27. Discuss the structure and bonding in metal carbonyls.
28. Write notes on (i). Radiopharmaceuticals      (ii). Superoxide dismutase

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