

E 1748

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Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, OCTOBER 2015

Fifth Semester

Core Course—CHEMISTRY OF D AND F BLOCK ELEMENTS

(Common for B.Sc. Chemistry Model I and Model II, B.Sc. Petrochemicals,
B.Sc. Chemistry Environment and Water Management)

[2013 Admissions]

Time : Three Hours

Maximum : 60 Marks

Part A

Answer all questions.

Each questions carries 1 mark.

1. What is hapticity ?
2. Draw the structure of Zeise's salt.
3. State EAN rule.
4. Give the electronic configuration of Cu^{2+} ion.
5. Give two examples of anticancer drugs.
6. Name a bidentate ligand.
7. What is the denticity of EDTA ligand ?
8. Give a method for the preparation of $\text{Mn}(\text{CO})_6$.

(8 × 1 = 8)

Part B

Answer any six questions.

Each question carries 2 marks.

9. State and explain 18 e^- rule.
10. Most of the compounds of transition metals are coloured. Why ?
11. What is Chelate effect ?
12. What are metallo enzymes ? Give an example.
13. What are low nuclearity carbonyl clusture ? Give an example.
14. Give one preparation method for ferrocene.
15. Illustrate stereoisomerism in co-ordination complexes using an example.
16. Explain biological function of cytochrome.

Turn over

17. State and explain valence bond theory.
18. What is meant by poisoning and inhibition of enzyme ?

(6 × 2 = 12)

Part C*Answer any four questions.**Each question carries 4 marks.*

19. Write a note on catalytic properties of organometallic compounds.
20. Explain the structure of $\text{Re}_2\text{Cl}_8^{2-}$.
21. Compare the structures of myoglobin and Haemoglobin.
22. What are low spin and high spin complexes ? Explain with examples.
23. Explain trans effect and its application.
24. Give a short note on the magnetic properties of lanthanides.

(4 × 4 = 16)

Part D*Answer any two questions.**Each question carries 12 marks.*

25. Discuss the mechanism of oxygen transport in blood.
26. Explain the isomerism shown by co-ordination compounds.
27. (a) Write a short note on metal alkene complexes. (6)
- (b) What are carbene complexes and carbyne complexes ? Give examples. (6)
28. Write a short note on carbonyl clusters and halide clusters.

[2 × 12 = 24]