

C 21087

(Pages : 2)

Name.....

Reg. No.....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH 2017

(CUCBCSS—UG)

Chemistry

CHE 6B 09—INORGANIC CHEMISTRY

Time : Three Hours

Maximum : 80 Marks

Part A

(Q. No. 1-10 answer all in one word/sentence)

1. Give the composition of German Silver.
2. What is zone refining ?
3. Hg is a liquid metal. Why ?
4. All transition elements are metals. Why ?
5. Give an example for anionic ligand.
6. Write the IUPAC name of the complex :  
 $[\text{Cr}(\text{NH}_3)_6][\text{Co}(\text{CN})_6]$  Hexaamminechromium(III)Hexacyanocobaltate(III)
7. What is Wilkinsons catalyst ?
8. Draw the structure of a mononuclear carbonyl of Fe.
9. Name the metal present in Haemoglobin.
10. Draw the structure of carboplatin.

(10 × 1 = 10 marks)

Part B

(Q.No. 11-22 Answer any ten. Each carries 2 marks)

11. Explain the term ore.
12. Discuss oxidative refining of metals ?
13. What is electrometallurgy ?
14. Draw the structure of  $\text{K}_2\text{Cr}_2\text{O}_7$ .
15. Transition elements form a large number of complexes. Give reason.
16. Discuss the position of transition metals in the periodic table.
17. What are co-ordination compounds ? How do they differ from double salts ?

Turn over

18. Explain the hybridization expressed by  $[\text{Fe}(\text{H}_2\text{O})_6]\text{Cl}_3$ .
19.  $[\text{CoF}_6]^{3-}$  is paramagnetic while  $[\text{Co}(\text{NH}_3)_6]^{3+}$  is diamagnetic. Why?
20. Give one method of preparation of ferrocene.
21. Discuss the toxicity of lead.
22. Name the trace metal ions in human body.

(10 × 2 = 20 marks)

### Part C

(Q.No. 23-30 Answer any five. Each carries 6 marks)

23. Write a note on the classification of steel.
24. Write a note on Ellingham diagrams.
25. Explain the magnetic properties of transition metals.
26. Compare any *three* important characteristics of 1<sup>st</sup> transition series with those of 2<sup>nd</sup> and 3<sup>rd</sup> transition series.
27. Discuss the splitting of d orbitals in square-planar complexes.
28. Discuss Sidgwick's Effective Atomic Number rule.
29. Write a note on "Structure and bonding in  $\text{Ni}(\text{CO})_4$ ".
30. Discuss sodium-potassium pump.

(5 × 6 = 30 marks)

### Part D

(Q.No. 31-34 Answer any two. Each carries 10 marks)

31. Discuss the extractive metallurgy of nickel.
32. (a) Why do some lanthanides exhibit unusual oxidation states? Discuss this on the basis of their electronic configuration.  
(b) How do transition elements differ from inner transition elements? Explain.
33. Discuss the structural isomerism in co-ordination compounds.
34. Draw the structure of haemoglobin. Explain the oxygen binding mechanism.

(2 × 10 = 20 marks)