

SIXTH SEMESTER B.A./B.Sc. DEGREE EXAMINATION, MARCH 2020

(CUCBCSS—UG)

Chemistry

CHE 6B 09—INORGANIC CHEMISTRY—IV

Time : Three Hours

Maximum : 80 Marks

Part A*Question No. 1–10 answer all in one word/sentence**Each question carries 1 mark.*

1. Give an example for tridentate ligand.
2. Draw the structure of Trans-dichloro tetra-ammine cobalt (III) ion.
3. Write the composition of Brass.
4. What is Wilkinson catalyst ?
5. What is kroll process ?
6. Draw the structure of KMnO_4 .
7. Write the IUPAC name of the complex $[\text{P} + (\text{IV})(\text{NH}_3)_4 \text{Br}_2] \text{Br}_2$.
8. Draw the structure of Myoglobin.
9. What is the role of calcium ion in biological systems ?
10. Name three Zinc containing enzymes.

(10 × 1 = 10 marks)

Part B*Question No. 11–22 answer any ten.**Each question carries 2 marks.*

11. Explain sodium-potassium pump.
12. Write short note on spectrochemical series.
13. What is intramedullary rod ?
14. Discuss briefly structural isomerism in co-ordination compounds.
15. Discuss briefly catalytic properties of transition metals.

16. What are the causes of Lanthanide contraction ?
17. What is 18 electron rule ?
18. Write short note on zone refining.
19. Discuss the structure of Iron Pentacarbonyl, $\text{Fe}(\text{CO})_5$.
20. What are the uses of $\text{K}_2\text{Cr}_2\text{O}_7$?
21. What are the factors affecting stability of complexes ?
22. What are the general properties of actinides ?

(10 × 2 = 20 marks)

Part C

*Question No. 23–30 answer any five.
Each question carries 6 marks.*

23. What are the limitations of VBT of Co-ordination compounds ?
24. Write short note on Ellingham diagram.
25. How is Titanium extracted from its ore ?
26. Discuss the applications of complexes in quantitative analysis.
27. Give the importance of metals in medicine.
28. Analyse the biochemical functions of haemoglobin and myoglobin.
29. Discuss the preparation and properties of ferrocene.
30. Write short note on open hearth process.

(5 × 6 = 30 marks)

Part D

*Question No. 31–34 answer any two.
Each question carries 10 marks.*

31. Discuss classification of steel. What are the uses of alloy steels ?
32. Discuss Geometrical Isomerism in co-ordination compounds.
33. Discuss the electronic configuration and general characteristics of Lanthanides. Also compare with Actinides.
34. (a) Write short note on chlorophyll and photosynthesis.
(b) Discuss the toxicity of Lead and Arsenic.

(2 × 10 = 20 marks)