17U610 (Pages: 2) Name: ……..…….

Reg. No…….……

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2020

(CUCBCSS-UG)

(Regular/Supplementary/Improvement)

CC15U CHE6 B09 - INORGANIC CHEMISTRY IV

Chemistry - Core Course

(2015 Admission onwards)

Time: Three Hours Maximum: 80 Marks

Section A

Answer ***all*** questions. Each question carries 1 mark.

1. Geometry of $Ni(CO)_4$ is ----------
2. The IUPAC name of the complex $K_4[Fe(CN)_6]$ is:
3. What is Ziegler Natta Catalyst?
4. The EAN of iron in potassium ferricyanide is ----------
5. The relationship between Δ_o and Δ_t is:
6. Draw the structure of oxaliplatin
7. Extra pure germanium can be prepared by----------
8. Purest form of commercial iron is ----------
9. Highest oxidation state seen among transition metal is ----------
10. The spin only magnetic momentum of a transition metal compound is about 3.87 B.M. at room temperature. The number of unpaired electron in the metal is ----------

(10 × 1 = 10 Marks)

Section B

Answer any ***ten*** questions. Each question carries 2 marks.

11. Explain why $K_2[PtCl_6]$ does not give white precipitate of AgCl with $AgNO_3$
12. Give two examples for trace metals in biological systems.
13. Most of the coordination complexes are coloured. Why?
14. Draw the structure of $Fe_2(CO)_9$ and $Fe_3(CO)_{12}$.
15. What is Wilkinson's catalyst? Give its application.
16. What is the percentage composition of German silver and gun metal?
17. Write a brief note on importance of beach sands of Kerala
18. What are alloy steels?
19. Write the electronic configuration of Cu & Pd.
20. Are Zn group of metals true transition metals.

21. Account for the variable valency of transition metals.
22. How can alumina be separated from silica in a bauxite ore associated with silica?

(10 × 2 = 20 Marks)

Section C

Answer any ***five*** questions. Each question carries 6 marks

23. Explain the factors influencing the stability of complexes.
24. Explain spectrochemical series.
25. What is sodium potassium pump? Explain with diagrams.
26. What is Lanthanide contraction? What are its consequences?
27. Discuss the following properties of transition elements.

    (a) Magnetic property (b) Catalytic Property (c) Complex formation.
28. Give the importance of Ellingham diagram in metallurgy.
29. Write a short note on application of metal complexes in qualitative analysis
30. Explain the reduction reaction taking place inside the blast furnace during extraction of iron from hametite.

(5 × 6 = 30 Marks)

Section D

Answer any ***two*** questions. Each question carries 10 marks

31. Discuss the metallurgy of Titanium.
32. Explain the role of haemoglobin and myoglobin in oxygen transport and storage in human body.
33. How ferrocene can be prepared? Explain its structure and bonding.
34. What are the different types of isomerism exhibited by co-ordination complexes? Explain.

(2 × 10 = 20 Marks)

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