

SAINIK SCHOOL GOPALGANJ

ASSIGNMENTS

CHAPTER-Coordination Compounds

CLASS-XII

. A chelating agent has two or more than two donor atoms to bind to a single metal ion. Which of the following is not a chelating agent?

- a. Thiosulphato
- b. Oxalato
- c. Glycinato
- d. Ethane-1,2-diamine

3. IUPAC name of $[\text{Pt}(\text{NH}_3)_2\text{Cl}(\text{NO}_2)]$ is

- a. Platinum diamminechloronitrite
- b. Chloronitrito-N-ammineplatinum (II)
- c. Diamminechloridonitrito-N-platinum (II)
- d. Diamminechloronitrito-N-platinite (II)

4. In the complex $[\text{E}(\text{en})_2(\text{C}_2\text{O}_4)]\text{NO}_2$ (where en) is ethylenediamine) _____ are the coordination number and the oxidation state of the element 'E' respectively.

- a. 6 and 2
- b. 2 and 2
- c. 4 and 3
- d. 6 and 3

5. The sum of coordination number and oxidation number of the metal M in the complex $[\text{M}(\text{en})_2(\text{C}_2\text{O}_4)]\text{Cl}$ (where en) is ethylenediamine) is

- a. 9
- b. 6
- c. 7
- d. 8

6. Some salts containing two different metallic elements give test for only one of them in solution, such salts are

- a. double salts

- b. normal salts
- c. complex salts
- d. None of these

7. An example of a sigma bonded organometallic compound is

- a. Grignard reagent
- b. Ferrocene
- c. Cobaltocene
- d. Ruthenocene

8. Iron carbonyl, $\text{Fe}(\text{CO})_5$ is

- a. Tetranuclear
- b. Mononuclear
- c. Dinuclear
- d. Trinuclear

9. The type of isomerism shown by the complex $[\text{CoCl}_2(\text{en})_2]$ is

- a. Geometrical isomerism
- b. Coordination isomerism
- c. Linkage isomerism
- d. Ionization isomerism

10. Oxalate ion is

- a. **Monodentate**
- b. **Didentate**
- c. **Tridentate**
- d. **Tetradentate**

VSA type

11. What is the coordination number of the metal ion in $[\text{Pt}(\text{NH}_3)_2\text{C}_2\text{O}_4]$?

12. Give the chemical formula of potassium hexacyanoferrate(ii).

13. Fe^{3+} complexes are more stable than Fe^{2+} complexes, why ?

14. Write IUPAC name of the linkage isomer of $[\text{Cr}(\text{H}_2\text{O})_5\text{SCN}]^{2+}$.

15. Name the central atom present in Haemoglobin and CHLOROPHYLL.

16. What is meant by the term ligand? Give example of bidentate, tetradentate and hexadentate ligands.
17. Illustrate with examples the terms ambidentate ligand , chelate and chelating ligand.
18. Using valence bond theory, of complexes, explain the geometry and diamagnetic nature of the ion $[\text{Co}(\text{NH}_3)_6]^{3+}$.
19. $[\text{NiCl}_4]^{2-}$ is paramagnetic while $[\text{Ni}(\text{CO})_4]$ is diamagnetic although both are tetrahedral, explain.
20. Magnetic moment of $[\text{MnCl}_4]^{2-}$ is 5.92 B.M. Explain giving reason.