ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

SOLUTION-64(CLASS-12)

TOPIC- COORDINATION COMPOUNDS

SUBTOPIC- PART-1

SUBJECT – CHEMISTRY **F.M. - 15**

DURATION – 30 mins **DATE – 07.11.20**

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1. When 0.1 mol$CoCl_3(NH_3)_5$ is combined with excess $AgNO_3$, then 0.2 mol$AgCl$ is obtained. The conductivity of the solution suits the

a. 1:3 electrolyte
b. 1:1 electrolyte
c. 3:1 electrolyte
d. 1:2 electrolyte

Answer: (d)

2. 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

Answer: (a)

3. IUPAC name of $[Pt(NH_3)_2Cl(NO_2)]$ is

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

Answer: (c)

4. In the complex $[E(en)_2(C_2O_4)]NO_2$ (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

Answer: (d)

5. The sum of coordination number and oxidation number of the metal M in the complex $[M(en)_2(C_2O_4)]Cl$ (where (en) is ethylenediamine) is

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

Answer: (a)

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

Answer: (c)

7. An example of a sigma bonded organometallic compound is

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

Answer: (a)

8. Iron carbonyl, $Fe(CO)_5$ is

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

Answer: (b)

9. The type of isomerism shown by the complex $[CoCl_2(en)_2]$ is

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

Answer: (a)

10. Which of the following elements do not form a complex with EDTA?

a. Ca

b. Mg
c. Be
d. Sr

Answer: (c)

11. **For the correct assignment of electronic configuration of a complex, the valence bond theory often requires the measurement of-**

a. Molar conductance b. Optical activity c. Magnetic moment d. Dipole moment

Answer: (c)

12. A complex of certain metal has the magnetic moment of 4.91 BM whereas another complex of the same metal with same oxidation state has zero magnetic moment. The metal ion could be-

a. Co^{2+} b. Mn^{2+} c. Fe^{2+} d. Fe^{3+}
Answer: (c)

13. The tetrahedral $[CoI_4]^{2-}$ and square planar $[PdBr_4]^{2-}$ complex ions are respectively-

a. Low spin,high spin b. High spin,low spin c. Both low spin d. Both high spin
Answer: (b)

14. On treatment of $[Ni(NH_3)_4]^{2+}$ with concentrated HCl, two compounds I and II having the same formula, $[NiCl_2(NH_3)_2]$ are obtained, I can be can be converted into II by boiling with dilute HCl. A solution of I reacts with oxalic acid to form $[NI(C_2O_4)(NH)_2]$ whereas II does not react. Point the correct statement of the following-

a. I cis, II trans; both tetrahedral b. I cis, II trans; both square planar

c. I trans, II cis: both tetrahedrald.All of these

Answer: (b)

15. **Which one of the following can show optical isomerism?**

a. CCl_4 b. $K_3[Cr(C_2O_4)_3]$ c. $K_3[Fe(CN)_6]$d.None Of The Above

Answer: (b)

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