Coordination Compounds

1.Fac-mer isomerism is associated with which one of the following complexes?

(a) [M(AA)2]

(b) [MA3B3]

(c) [M(AA)3]

(d) [MA4B2]

Answer:(b) [MA3B3]

2.The complex ions [Co(NH3)5(NO2)]2+ and [Co(NH3)5(ONO)]2+ are called

(a) Ionization isomers

(b) Linkage isomers

(c) Co-ordination isomers

(d) Geometrical isomers

Answer:(b) Linkage isomers

3.Which type of isomerism is shown by the complex compounds [Co(NH3)5Br]SO4 and

[Co(NH3)5SO4]Br

(a) Ionisation

(b) Optical

(c) Linkage

(d) Coordination

Answer:(a) Ionisation

4.The diamagnetic species is

(a) [Ni(CN)4]2-

(b) [NiCl4]2-

(c) [CuCl4]2-

(d) [CoF6]3-

Answer:(b) [NiCl4]2-

5.Primary and secondary valence of Pt in [Pt(en)2Cl2] are

(a) 4, 4

(b) 4, 6

(c) 6, 4

(d) 2, 6

Answer:(d) 2, 6

6.IUPAC name of [Pt(NH3)3Br(NO2)Cl]Cl is

(a) triamminechlorodibromidoplatinum (IV) chloride

(b) triamminechloridobromidonitrochloride-platinum (IV) chloride

(c) triamminebromidochloridonitroplatinum (IV) chloride

(d) triamminenitrochlorobromoplatinum (IV) chloride

Answer:(c) triamminebromidochloridonitroplatinum (IV) chloride

7.Which of the following has square planar structure?

(a) [NiCl4]2-

(b) [Ni(CO)4]

(c) [Ni(CN)4]2-

(d) None of these

Answer:(c) [Ni(CN)4]2-

8.The geometry and magnetic behaviour of the complex [Ni(CO)4] are

(a) Square planar and paramagnetic

(b) Tetrahedral and diamagnetic

(c) Square planar and diamagnetic

(d) Tetrahedral and paramagnetic

Answer:(b) Tetrahedral and diamagnetic

9.The IUPAC name of complex ion [Fe(CN)6]3- is

(a) Hexacyanidoiron(III)ion

(b) Hexacyanatoferrate (III)ion

(c) Hexacyanidoferrate (III)ion

(d) Tricyanoiron(III)ion

Answer: (c) Hexacyanidoferrate (III)ion

10.Which of the following is a hexadentate ligand?

(a) EDTA4-

(b) (COO)22-

(c) en

(d) NH3

Answer:(a) EDTA4-

11.Mohr's salt is

(a) Fe2(SO4)3.(NH4)2SO4.6H2O

(b) FeSO4.(NH4)2.SO4.6H2O

(c) MgSO4.7H2O

(d) FeSO4.7H2O

Answer:(b) FeSO4.(NH4)2.SO4.6H2O

12.According to Werner's theory of coordination compounds

(a) Primary valence is ionisable

(b) Secondary valence is ionisable

(c) Primary and secondary valencies are lonisable

(d) Neither primary nor secondary valence is ionisable

Answer:(a) Primary valence is ionisable

13.Which one of the following is an outer orbital complex and exhibits paramagnetic behaviour :

(a) [Cr(NH3)6]3+

(b) [Co(NH3)6]3+

(c) [Ni(NH3)6]2+

(d) [Zn(NH3)6]2+

Answer:(c) [Ni(NH3)6]2+

14.The oxidation state of nickel in [Ni(CO4)] is

(a) 0

(b) 1

(c) 2

(d) 3

Answer:(a) 0

15.The ligand (NH2CH2CH2NH2) is

(a) bidentate

(b) tridentate

(c) tetradentate

(d) pentadentate

Answer:(a) bidentate