DPP EXERCISE NEET INORGANIC CHEMISTRY

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COORDINATION COMPOUND



Plot No. 38, Near Union Bank of India, Rajeev Gandhi Nagar, Kota, Rajasthan – 324005 Mob. : 9214233303

1.	The total number of electrons donated by ligands to platinum ion in [Pt(en),Cl,] is			is
	(1)8	(2)10	(3) 12	(4) 14
Ans.	(3)			
2.	Out of following which	ligand is a π acid ligand ?		
	(1)CO	$(2) \mathrm{NH}_{3}$	(3) Cl-	$(4) H_2 O$
Ans.	(1)			
3.	Which of the following i	s not an ambidentate ligand	?	
	(1) CN-	(2) NO_2^{-}	(3) SCN-	$(4) \mathrm{NH}_{3}$
Ans.	(4)			
4.	Oxidation number of plat	inum in cis-platin		
	(1) Zero	(2) +2	(3)+4	(4)+6
Ans.	(2)			
5.	Aq. solution of KCl.MgC	$Cl_2.6H_2O$ will give test of		
	(1) K^+ and Mg^{2+} only	(2) K^+ and Cl^- only	(3) K^+ , Mg^{2+} and Cl^-	(4) Mg^{2+} and H_2O only
Ans.	(3)			
6.	Which of the following c	omplex is homoleptic?		
	$(1) \operatorname{H}_{2}[\operatorname{PtCl}_{6}]$	(2)Li[AlH ₄]	$(3) [Ni(CO)_4]$	(4) All of these
Ans.	(4)			
7.	Which of the following	is not a polydentate ligand	?	
	(1) Oxalate ion	(2) Ethylenediamine	(3) Thiocyanato	(4)EDTA
Ans.	(3)			
8.	Which of the following i	s not a bidentate ligand?		
	(1) acac	(2) ox	(3) en	(4) dien
Ans.	(4)	0 1 4 4 9		
9.	Which of the following is	s flexidentate?		(4) C1-
Ans	(1)	(2) en	(3)EDIA	(4) CI
Alls.	(5) The complex compound	in which metal is not preser	t in zero oxidation state?	
	(1) Mn.(CO)	(2)[Ni(CO)]	(3) [Cr(C.H.)]	(4) K[PtCL(C H)]
Ans.	(4)	()[()4]	(-)L(- <u>6</u> - <u>6</u> /2J	()

DPP-1

DPP - 2

1.	The IUPAC name of $[Ni(CN)_4]^{2-}$ is					
	(1) Tetracyanonickel (II) ion		(2) Tetracyanonickelate (II) ion			
	(3) Tetracyanonickel (0) ion		(4) Tetracyan	onickelate (0) ion		
Ans.	(2)					
2.	IUPAC name of K[BF ₄]	IUPAC name of $K[BF_4]$				
	(1) Potassium tetrafluoroborate		(2) Tetrafluoroboron (1	II) potassium		
	(3) Potassiumtetrafluor	idoborate (III)	(4) Tetrafluoridoboron	(III) potassium		
Ans.	(3)					
3. Structural formula of tetra aqua dichlorido chromium(III) chloride						
	$(1)[(H_2O)_4Cl_2Cr]Cl_2$	$(2) [Cl_2(H_2O)_4Cr]Cl_3$	(3)[Cr(H ₂ O) ₄ Cl ₂]Cl	$(4) [Cr(H_2O)_4Cl_3]$		
Ans.	(3)					
4.	IUPAC name of H ₂ [PtC	l ₆] is				
	(1) Dihydrogen hexach	oridoplatinum (IV)	(2) Hexachloridoplatini	ic (IV) acid		
	(3) Dihydrogen hexachloridoplatinic (IV) acid		(4) Hexachloridoplating	(4) Hexachloridoplatinum (IV) acid		
Ans.	(2)					
5.	Naming of ligand in [M	$[(en)_2]^{n+}$ starts with				
	(1) Di	(2) Bi	(3) Bis	(4) Any of these		
Ans.	(3)					
6.	The complex $Hg[Co(CNS)_4]$ is correctly named as :					
	(1) Mercury tetrathiocyanato cobaltate (II) (2) Mercury cobalt tetrasulphocyano(II)					
	(3) Mercury tetrasulphocyanide cobaltate(II) (4) Mercury sulphocyanato cobalt (II)					
Ans.	(1)					
7.	The compound $Na_2[Fe(0)]$	$CN)_5NO^+$ is called -		• 1		
	(1) Sodium pentacyanon (3) Sodium nitrosoferro	itrosonium ferrate (II)	(2) Sodium nitroprus (4) 1 & 2 both	russide		
Ans.	(3) Sourdin introsorerroo	yannee	(4) 1 & 2 both			
8	Name of Na [AlF] is -					
0.	(a) Cryolite		(b) Tri sodium hexa flu	loroaluminium		
	(c) Sodium hexafluoro aluminium(III)		(d) Sodium hexafluoroaluminate (III)			
	The correct answer is :-					
	(1) Only a	(2) a and d both	(3) Only d	(4) a and c both		
Ans.	(2)	()		()		
9.	Chemical Name of "Tur	n bull's blue" is :-				
	(1) Ferrous ferricyanide		(2) Potassium ferrocyanide			
	(3) Potassium cyanide		(4) Potassium ferricyanide			
Ans.	(1)					
10.	0. The correct name of the compound $[Cu(NH_3)_4]$ (NO ₃) ₂ , according to IUPAC system is:-					
	(1) Cuprammonium nitra	te	(2) Tetraamine copper	(2) Tetraamine copper (II) dinitrate		
	(3) Tetraammine copper	(II) nitrate	(4) Tetraammine coppe	er (I) dinitrate		
Ans.	(3)					

		DPP	- 3		
1.	Primary and secondary valencies of Cu in $[Cu(NH_3)_4]SO_4$ is				
	(1)4,4	(2)2,4	(3)4,1	(4)4,2	
Ans.	(2)				
2.	Aqueous solution of Coo secondary valency of met	$Cl_3.6NH_3$ upon addition with all in this complex is	h AgNO ₃ produces 3 moles	s white precipitate. Primary and	
	(1)3,6	(2) 2, 6	(3) 3, 3	(4) 6, 4	
Ans.	(1)				
3.	The hybridisation of Ni ir	n [Ni(CO) ₄] is			
	(1) sp ³	(2) dsp^2	(3) sp^2	$(4) sp^{3}d$	
Ans.	(1)				
4.	Which of the following is	/are inner orbital complex ?			
	$(1) [Fe(CN)_6]^4$	(2) $[Cr(NH_3)_6]^{3+}$	$(3) [Mn(CN)_6]^{3-}$	(4) All of these	
Ans.	(4)				
5.	Which one of the following	ng is paramagnetic in nature	e?		
	$(1) \operatorname{Ni}(\operatorname{CO})_4$	(2) $Ni(CN)_4]^{2-}$	$(3) K_4[Fe(CN)_6]$	$(4) [FeF_6]^4$	
Ans.	(4)				
6.	Number of unpaired elect	trons present in $[Ni(H_2O)_6]^{2+}$			
	(1) Two	(2) One	(3) Four	(4) Three	
Ans.	(1)				
7.	The spin magnetic mome	nt of iron in K ₃ [Fe(CN) ₆]			
	(1) $\sqrt{3}$ BM	(2) $\sqrt{5}$ BM	(3) √15 BM	(4) $\sqrt{24}$ BM	
Ans.	(1)				
8.	$[Fe(H_2O)_6]^{3+}$ and $[Fe(CN)$	$_{6}$] ^{3–} differ in			
	(1) Oxidation number	(2) Coordination number	(3) Structure	(4) Magnetic nature	
Ans.	(4)				
9.	The spin only magnetic n	noment of [MnBr ₄] ^{2–} is 5.9 B	.M. Geometry of the comple	ex ion is	
	(1)Tetrahedral	(2) Octahedral	(3) Square planar	(4) Pentagonal pyramidal	
Ans.	(1)				
10.	In the formation of octal metal.	hedral complex, ligands app	proach towards	and orbital of central	
	(1) $d_{xy}, d_{x^2-y^2}$	(2) $d_{x^2-y^2}, d_{z^2}$	$(3) d_{xy}, d_{yz}$	(4) d_{z^2}, d_{xz}	
Ans.	(2)				
11.	Correct order of power lig	gands in spectrochemical ser	ries		
	$(1) I^{-} < Br^{-} < CI^{-}$	$(2) C_2 O_4^{2-} < H_2 O < NCS^{-}$	$(3) \mathrm{NH}_{3} < \mathrm{CN} - <\mathrm{CO}$	(4) All of these	
Ans.	(4)				

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12. Which of the following statements are incorrect ?						
	(1) If $\Delta_0 < P$, high spin state is more stable					
	(2) NO_2 is a strong li	igand				
	(3) Colour of a comp	(3) Colour of a complex depends upon nature of metal ion only				
	(4) $\Delta_0 > \Delta_t$					
Ans.	(3)					
13.	According to crystal	According to crystal field theory, five d-orbitals of an octahedral complex split to give				
	(1) Two orbitals with	(1) Two orbitals with lower energy and three orbitals with higher energy				
	(2) Three orbitals wi	ith lower energy and two or	bitals with higher energy			
	(3) One orbital with	lower energy and four orbit	tals with higher energy			
	(4) Four orbitals with	h lower energy and one orb	ital with higher energy			
Ans.	(2)					
14.	Which is a diamagnet	tic complex ?				
	(1) $[Fe(H_2O)_6]^{3+}$	$(2) [Fe(H_2O)_6]^{2+}$	(3) $[Fe(CN)_6]^{3-}$	$(4) [Fe(CN)_6]^{4-}$		
Ans.	(4)					
15.	The hybridization of '	Cr' in the complex $[Cr(NO_2)]$	$_{4}(NH_{3})_{2}^{-}$			
	(1) $sp^{3}d^{2}$	(2) sp^3d	(3) d^2sp^3	(4) sp^3		
Ans.	(3)					

		DP	PP - 4	
1.	The geometry of $[Ni(CO)_4]$ and $[PdCl_4]^{2-}$ respectively are			
	(1) Both are tetrahedra	1	(2) Both are square p	lanar
	(3) Square planar and t	etrahedral	(4) Tetrahedral and se	quare planar
Ans.	(4)			
2.	Write the increasing o	rder of the value is CFSE (Δ_0) for the following specie	2S
	I. [Co(NH ₃) ₆] ³⁺ II. [I	$Rh(NH_3)_6]^{3+}$ III. [In	$(NH_3)_6]^{3+}$	
	(1) III < II < I	(2) I < II < III	(3) II <i <iii<="" th=""><th>(4) I < III < II</th></i>	(4) I < III < II
Ans.	(2)			
3.	Which of the followin	g will have greatest molar c	onductance at infinite di	lution?
	$(1) [Pt(NH_3)_5Cl] Cl_3$	(2) $[Pt(NH_3)_4Cl_3] Cl_3$	(3) [Pt(NH ₃) ₂ Cl ₄]	(4) [Pt(NH ₃) ₆]Cl ₄
Ans.	(4)		, , , , , , , , , , , , , , , , , , ,	
4.	Which of the following	g is the high spin complex ?		
	(1) [Cr(gly) ₂]	$(2) [CoBr_{2}Cl_{2}(SCN_{2})]^{3-1}$	$(3) [Fe(CN)_{a}]^{3-}$	(4) Na[PtBrCl(NO ₃) ₂ (NH ₃) ₂]
Ans.	(2)			
5.	The coordination num	ber and magnetic moment of	the complex $[Cr(C_2O_4)_2($	NH,),]-respectively is
	(1)6,3.87BM	(2)4, 3.87 BM	(3) 6, 3.46 BM	(4) 4, 1.73 BM
Ans.	(1)			
6.	If the value of C.F.S.E.	. for "Ni" is Δ_0 then it is for P	d should be	
	$(1) 1.1 \Delta_0$	$(2) 0.5 \Delta_0$	$(3) 1.5 \Delta_0$	$(4) 2 \Delta_0$
Ans.	(3)		U	
7.	The value of 'spin only	y' magnetic moment, follows	the correct order ?	
	(1) $[Fe(CN)_6]^4 > [CoC]$	$_{4}]^{2-}>[MnCl_{4}]^{2-}$	(2) $[MnCl_4]^{2-} > [Fe(C)]^{2-}$	$(2N)_{6}^{4} > [CoCl_{4}]^{2}$
	(3) $[Fe(CN)_6]^4 > [MnC]^4$	$[l_4]^{2-} > [CoCl_4]^{2-}$	(4) $[MnCl_4]^{2-} > [CoC_4]^{2-}$	$l_4^{]2-} > [Fe(CN)_6^{]4-}$
Ans.	(4)			
8.	The complex compour	nd bearing square planar geor	metry is	
	$(1) \operatorname{Ni}(\operatorname{CO})_4$	(2) Ni(CN) ₄] ^{2–}	$(3) Mn(CN)_{6}]^{3-}$	(4) $[MnCl_4]^{2-}$
Ans.	(2)			
9.	The complex compoun	d having maximum magnetic	moment is	
	$(1) [CoF_6]^{3-}$	(2) $Cr(NH_3)_6]^{3+}$	$(3)[FeF_6]^{3-}$	(4) $[Mn(CN)_6]^{4-}$
Ans.	(3)			
10.	Which of the following	g has primary valency "2"?		
	(1) [Co(NH ₃) ₅ Cl]Cl	$(2) [Co(NH_3)_4Cl_2]Cl$	$(3)[Co(NH_3)_3Cl_3]$	$(4) [Co(H_2O)_4Cl_2]Cl$
Ans.	(1)			
11.	If Δ_0 is the crystal field then ligand is called we	stabilisation energy of a ligat eak ligand if	nd and P is the energy req	uired for electron pairing in an orbital,
	$(1)\Delta_0 > P$	$(2) \Delta_0 < P$	$(3) \Delta_0 = P$	(4) Unpredictable
Ans.	(2)			

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12.	Which octahedral co ligands ?	ordination compound will	show maximum conductiv	vity in aqueous solution if all NH	3 act as
	(1) CoCl ₃ .6NH ₃				
	(2) CoCl ₃ .5NH ₃				
	(3) CoCl ₃ .4NH ₃				
	(4) All will have sam	e conductivity as every com	pound has got 3Cl		
Ans.	(1)				
13.	In case of high spin s	situation			
	$(1)\Delta_0 = P$	$(2) \Delta_0 > P$	$(3)\Delta_0 < \mathbf{P}$	$(4) \Delta_0 . P = 1$	
Ans.	(3)				
14.	Which is diamagnetic	c complex ?			
	$(1)[Fe(H_2O)_6]^{3+}$	$(2) [Fe(H_2O)_6]^{2+}$	$(3) [Fe(CN)_6]^{3-}$	$(4) [Fe(CN)_6]^4$	
Ans.	(4)				

		DPI	P - 5			
1.	The complex [Cr(H,O),Cl]Br and [Cr(H,O),Br]Cl show					
	(1) Linkage isomerism	(2) Ionisation isomerism	(3) Hydrate isomerism	(4) Co-ordination isomerism		
Ans.	(2)					
2.	Which of the following	octahedral complexes do not	show geometrical isomeri	sm?		
	$(1)[Co(NH_3)_3Cl_3]$	(2) [PtCl ₂ (NH ₃) ₄]	(3) [Pt(NH ₃) ₂ Cl ₂]	(4) $[Co(en)_3]^{3+}$		
Ans.	(4)					
3.	Coordination isomerism	n exhibited by				
	(1) $[Cr(en)_2Cl_2]NO_2$	$(2) [Co(NH_3)_5Br]SO_4$	(3) [Pt(NH ₃) ₄] [CuCl ₄]	$(4) [Co(NH_3)_5Cl]Cl_2$		
Ans.	(3)					
4.	Which one of the follow	ring complexes will have six	isomers?			
	(1) [Co(en)NH ₃ Cl ₂]Cl	(2) [Cr(H ₂ O) ₄ Cl ₂]Cl	$(3) [Co(ox)_3]^{3-}$	(4) $[Co(en)_2Br_2]Cl$		
Ans.	(4)					
5.	Which of the following does not show optical activity ?					
	(1) [Co(NH ₃) ₄ Cl ₂]	$(2) [Co(ox)_3]^{3-}$	$(3) [Co(ox)_2(NH_3)_2]Cl$	(4) $[Co(en)(NH_3)_2(H_2O)_2]Cl_2$		
Ans.	(1)					
6.	How many isomers are possible in $[Cr(en)_2Br_2]$?					
	(1)2	(2) 3	(3)6	(4) 1		
Ans.	(2)					
7.	Which of the following will show optical activity?					
	(1) Cis – $[Co(NH_3)_2(en)_2]$	$(1) \operatorname{Cis} - [\operatorname{Co}(\operatorname{NH}_3)_2(\operatorname{en})_2]^{3+}$		$[1)_2]^{3+}$		
	$(3) [Co(NH_3)_6]^{3+}$		(4) Trans – $[Co(H_2O)_4Cl_2]$	<u>]</u> +		
Ans.	(1)					
8.	Number of geometrical isomers possible for [MABCDEF] are					
	(1)6	(2) 10	(3) 15	(4) 12		
Ans.	(3)					
9.	[Ni(gly) ₂] show two stereoisomers. Those are					
	(1) Geometrical		(2) Optical			
	(3) Does not show isomerism		(4) Both (1) and (2)			
Ans.	(2)					
10.	$CFSE(\Delta_0)$ for metal ion	in d ⁷ configuration in presen	ce of strong ligand field is			
	$(1) - 0.6 \Delta_0$	$(2) - 0.8 \Delta_0$	$(1) - 1.6 \Delta_0$	$(4) - 1.8 \Delta_0$		
Ans.	(4)					

		DP	P -6			
1.	Which of the following complex is most stable ?					
	$(1)[M(NH_3)_6]^{2+}$	(2) $[M(NH_3)_6]^{3+}$	(3) $[Men_2(NH_3)_2]^{3+}$	$(4) [M(en)_3]^{3+}$		
Ans.	(4)					
2.	Which reagent can be u	used to identify Ni ²⁺ ion ?				
	(1) Resorcinol	(2) Dimethyl glyoxime	(3) Diphenyl benzidine	(4) Potassium ferrocyanide		
Ans.	(2)					
3.	Which of the following	is not organometallic comple	ex?			
	(1) Grignard reagent	(2) Ferrocene	(3) Trans-platin	(4) Diethyl zinc		
Ans.	(3)					
4.	Wilkinson catalyst is					
	(1)NiCl ₄	$(2)(Ph_{3}P)_{3}RhCl$	(3)AlCl ₃ +TiCl ₄	$(4) \operatorname{Fe}(\operatorname{CO})_5$		
Ans.	(2)					
5.	Stability of the complex	depends on				
	(1) Oxidation state	(2) Nature of ligand	(3) Geometry of complex	(4) All of these		
Ans.	(4)					
6.	π bonding is not involve	ed in				
	(1) Ferrocene	(2) Dibenzene chromium	(3) Zeise's salt	(4) Grignard reagent		
Ans.	(4)					
7.	Which of the following is correct statement ?					
	(1) $[Ti(H_2O)_6]^{3+}$ is color	ured complex				
	(2) $[Si(H_2O)_6]^{4+}$ is color	urless complex				
	(3) $d-d$ transition is n	ot possible in $[Si(H_2O)_6]^{4+}$ co	omplex			
	(4) All of these					
Ans.	(4)					
8.	Ligand to form a compl	ex which is used to treat hard	l water			
	$(1) \mathrm{NH}_{3}$	(2) ox	(3) en	(4) EDTA		
Ans.	(4)		······································			
9.	How many nydrogen bo	(2) One	(2) Error			
A	(1) Zero	(2) One	(3) Four	(4) Five		
ANS.	(2)					
10.	In which of the following	process OMC is formed with	n the help of other OMC :			
	(1) $SnCl_4$ + Butyl lithium –	\longrightarrow Bu ₄ Sn + 4LiCl				
	$(2)C_2H_5I+4Pb/Na (alloy)$ —	\rightarrow (C ₂ H ₅) ₄ Pb+4NaI+3Pb				
	$(3) \operatorname{Ni} + 4\operatorname{CO} \longrightarrow [\operatorname{Ni}(\operatorname{CO}$)) ₄]				
	(4) $K_2[PtCl_4]+CH_2=CH_2-$	$\downarrow K_{2}[PtCl_{4}]+CH_{2}=CH_{2}\longrightarrow K[PtCl_{3}(C_{2}H_{4})]+KCl$				
Ans.	(1)					