ECAT Chemistry Chapter 17 Transition Elements Online Test

Sr	Questions	Answers Choice
1	In the electronic configuration of Cr one electron from 4s sub-shell is transfered to 3d sub-shell because	A. The 3rd orbital is of lower energy than 4s B. The 4s orbital is of equal energy to 3d orbital C. The half filled d-subshell is more stable than incomplete d-sub shell D. 6 unpaired electrons make Cr more paramagnetic
2	Which element does not belong to 3d transition series	A. Ti B. V C. Mn D. Te
3	Which element does not belong to 4d series	A. Y B. Zr C. Mo D. Zn
4	Which element belong to 5d series	A. V B. Nb C. Pd D. Hf
5	IIB elements (Zn, Cd, Hg) and III B elements (Sc, Y and La) are	A. Non typical transition element B. Typical transition element C. Normal elements D. Inner transition element
6	$CuSO_4$. $5H_2O$ is used to prepare	A. Transition complex B. Fehling's 'A' sol C. Fehling's 'B' sol D. Fehling's sol
7	d-block elements closely resemble in their physical and chemical properties. Which statement is incorrect	A. They show variable valency B. Their ions and compounds are coloured C. They are good conductors of heat and electricity D. Their compounds are diamagnetic
8	$Fe^{+3}$and $Mn^{2+}$are strong paramagnetic because the number of unpaired electrons in each is	A. 4 B. 5 C. 6 D. 7
9	All 3d series elements show variable oxidation states. The one shown by all 3d elements is	A. +2 B. +3 C. +4 D. +5
10	The colour of a transition metal complex is due to d-d transition The colour of the complex is the complementary of the colour absorbed. Thus $[Ti(H_2O_6]^{3+}$abosrbs yellow light and transmits blue and red colours therefore the solution of titanium complex appears	A. Blue B. Red C. Yellow D. Mixture of blue and red or violet
11	A transition metal complex can be recognized by various terms. Which is not the proper term	A. Central metal ion B. Coordination number C. Ligand D. Geometry of complex
12	Potassium hexacyanoferrate (II) has the formula	A. K₄[Fe(CN)₆] B. K₃[Fe(CN)₆] C. K₂[Fe(CN)₆] D. K [Fe(CN)₆]
13	The geometrical shape of a transition complexion is related to the state of hybridizing of the central atom. What is trigonal bipyramidal	A. sp³ B. dsp² C. dsp³ D. d²sp³
14	Steel may be manufacture by two processes which two are correct	A. Open hearth process and besemer process B. Open hearth process and Haber process C. Bassemer process and Haber process D. Contact process and Haber process
15	Which is not a bidentate ligand	A.

16	Which of the following is a non-typical transition elements	A. Cr B. Mn C. Zn D. Fe
17	Which of the following is a typical transition metal	A. Sc B. Y C. Ra D. Co
18	f-Block elements are also called	A. Non typical transition elements B. Outer transition elements C. Normal transition elements D. Inner transition elements
19	Which is used to identify Cu^{2+}ions	A. Nitric acid B. Sulfuric acid C. NaOH D. HCl
20	Group VIB of transition elements contains	A. Zn, Cd, Hg B. Fe, Ru, Os C. Cr, Mo, W D. Mn, Te, Re
21	Which is the formula of tetra-ammine chloro-nitro platinum (IV) sulphate	A. [Pt(NH₃)₄ (NO₂)] SO₄ B. [Pt NO₂Cl(NH₃) ₄] SO₄ C. [Pt Cl(NO₂) (NH₃) ₄] SO₄ D. [Pt (NH₃)₄ (NO₂) Cl] SO₄
22	The percentage of carbon in different types of iron products is in the order of	A. Cast iron > wrought iron > steel B. Wrought iron > steel > cast iron C. Cast iron > steel > wrought iron D. Cast iron = steel > wrought iron
23	The colour of transition metal complexes is due to	A. d-d transitions of electrons B. Para magnetic nature of transition elements C. Ionization D. Loss of s-electrons
24	Coordination number of Pt in $[PtCl(NO_2)(NH_3)_4]^{2+}$is	A. 2- B. 4 C. 1 D. 6
25	The total number of d-bock transition element is	A. 10 B. 14 C. 40 D. 30
26	Transition metals form complexes due to the participation of partially filled	A. f-orbitals B. d-orbitals C. s-orbitals D. p-orbitals
27	The colour of the transition metal compounds is due to	A. p-d transition B. d-d transition C. s-p transition D. None of these
28	$Cu^{2+}$with d^9electronic configuration appears	A. Yellow B. Pink C. Blue D. Green
29	The less reactivity of transition metal is due to	A. High heats of sublimation B. High ionization energies C. Low heats of salvation D. All these
30	$[Cu[NH_3)_4]^{+2}$will form _____ structure	A. Square planar B. Tetrahedral C. Octahedral D. Trigonal bipyramidal
31	The Mn^{3+}has _____ color	A. Violet B. Green C. Red/brown D. No color
32	Out of 110 known elements, transition elements are	A. 40 B. 60 C. 50 D. 80

33	Most transition elements show	A. Diamagnetic behavior B. Ferromagnetic behavior C. Paramagnetic behavior D. None of these
34	$[Zn(NH_3)_4]^{3+}$possess geometry	A. Square plannar B. Hexagonal C. Tetrahedral D. None of these
35	Bell metal is an alloy of Sn and	A. Copper B. Iron C. Zinc D. Magnesium
36	The color of Cr^{3+}ion is	A. Violet B. Blue C. Pink D. Green
37	Bronze is an alloy of Cu and	A. Zn B. As C. Sb D. Sn
38	Interstitial compounds have	A. Half formula B. Fixed formula C. Indefinite formula D. None
39	The amount of Ni in stainless steel is	A. 3% B. 4% C. 5% D. 8%
40	Which metal is used for catalytic hydrogenation of oils	A. Cu B. Pt C. Ni D. Pd
41	The geometry of $[Co(NH_3)_6]^{3+}$is	A. Tetrahedral B. Square planar C. Octahedral D. None of these
42	The formula of curprite is	A. Cu₂S B. Cus C. Cu₂O D. CuCO₃
43	The oxidation state of Fe in $[Fe(CN)_6]^{3-}$is	A. +2 B. +3 C. +4 D. -3
44	The oxidation number of Ni in $[Ni(CO)_4]$ is	A. +1 B. 0 C. +4 D. -4
45	Which of the following is used as disinfectant	A. K₂Cr₂O₇ B. KMnO₄ C. K₂MnO₄ D. K₂CrO₄
46	Corrosion may be prevented by	A. Allcying B. Paints C. Metallic coatings D. All
47	Stainless steel contains Cr upto	A. 12% B. 18% C. 10% D. 5%
48	A phtotographic plate is coated with an emulsion of silver nitrate and	A. AgCl B. AgI C. AgBr D. NaNO₃
49	Which of the following is a transition element	A. Sr B. Sn C. Cr D. Pb
		A. Hydrogenation

50	Titanium is used as a catalyst in	B. Dehydrogenation C. Polymerization of P.E. D. Oxidation of ammonia
51	Which of the following d-block elements can show the highest oxidation number in its compounds	A. Chromium B. Copper C. Nickel D. Manganese
52	Platinum (IV) chloride combines with ammonia to form compounds in which the coordination number of the platinum is 6. A formula unit on one of the compound contains a cation and only two chloride ions. What is the formula of this compound	A. Pt(NH₃)₆Cl₄ B. Pt(NH₃)₅Cl₄ C. Pt(NH₃)₄Cl₄ D. Pt(NH₃)₃Cl₄
53	The free spaces between the metal atoms and its crystal lattice are called	A. Valance spaces B. Empty spaces C. Interstices D. None
54	Electronic configuration of $Cu^{+2}$is	A. 4S², 3d⁹ B. 4s⁻¹, 3d¹⁰ C. 4S⁰, 3d⁹ D. None of these
55	Which of the following acts as ligand	A. NH₃ B. NH₂-- CH₂--CH₂-- NH₂ C. C₂O²⁻₄ D. All these
56	Which of the following is not related to transition metals	A. They have a high tensile strength B. They are ductile C. They are malleable D. They have low melting points
57	Which is in differnet phase form other metals	A. Ni B. Hg C. Cd D. Na
58	$[Co(NH_3)_6]^{3+}$will form _____ structure	A. Square planar B. Tetrahedral C. Octahedral D. Trigonal bipyamidal
59	What is the name of the comlex $[Ni(CO)_4]$	A. Tetracarbonylnickel (o) B. Tetracabonylnickel C. Tetracabonylnickel (II) D. Tetracabonylnickel (IV)
60	The coordination number of iron in $[Fe(H_2O)_6]^{3+}$is	A. 2 B. 3 C. 4 D. 6
61	Potassium chromate has formula	A. KClO₃ B. K₂CO₃ C. K₂CrO₄ D. K₂Cr₂O₇
62	An oxidixing agent	A. K₂Cr₂O₇ B. H₂SO₄ C. FeSO₄ D. K₂SO₄
63	Which of the following is a not typical transition element	A. Cr B. Mn C. Zn D. Fe
64	The colour of transition metal complexes is due to	A. d-d transitions of electrons B. Para magnetic nature of transition elements C. Ionization D. Loss of s-electrons
65	Coordination number of Pt in $[Pt\ Cl(NO_2)\ (NH_3)]^{2-}$is	A. 2- B. 4 C. 1 D. 6
		A. 10 B. 14

66	The total number of transition elements is	B. 14 C. 40 D. 50
67	Which one of the following has highest density	A. Zn B. Os C. Ni D. Cu
68	Elements in which f-orbitals are in the process of completion are called	A. Outer transition element B. Inner transition elements C. Non-tranistion elements D. Radioactive elements
69	What are alloys	A. A homogenous mixture of two or more elements B. A homohenous mixture of metal and a non-metal C. A homogenous mixture of two or more metals D. None of the above
70	The elements in which d or f-orbitals are incomplete are called	A. Transition elements B. Typical elements C. Actinides D. lanthanides
71	In physical and chemical properties, transition elements show	A. Similarities B. Dissimilarities C. Both of these D. Somestimes similarities, sometimes dissimilarities
72	E.D.T.A is	A. Mono-dentate B. Bi-dentate C. Polydentate D. Having three lone pairs of electrons
73	Transition elements form which type of bond	A. Ionic bonds only B. Covalent bonds only C. Ionic and covalent bonds D. Polar bonds
74	Bronze is an alloy which contains	A. 60% cu B. 70% cu C. 80% cu D. 99% cu
75	Which alloy contains 50% copper, 25% zinc and 25% nickel	A. German silver B. Gun metal C. Bell metal D. Brass
76	Potassium ferrocyanide is a	A. Mixed salt B. Double salt C. Complex salt D. Normal salt
77	Transition elements differ from s and p block elements due to their characteristic properties. What is not he characteristic property of transition elements	A. Transition elements show variable oxidation states B. Their salts are coloured C. They can be used as catalyst D. All of them are metals
78	Which is the correct electronic configuration of Cr - 24	A. 1s², 2s², 2p⁶, 3s², 3p⁶, 3d⁴, 4s² B. 1s², 2s², 2p⁶, 3s², 3p⁶, 3d³, 4s², 4p¹ C. 1s², 2s², 2p⁶, 3s², 3p⁶, 3d⁵, 4s¹ D. 1s², 2s², 2p⁶, 3s², 3p⁶, 3d⁵, 4p¹
79	Which element has 4 unpaired electrons in 3d-orbital	A. Chromium - 24 B. Manganese - 25 C. Iron - 26 D. Cobalt - 27
80	A transition element is defined as an element of 3d series	A. Which is metal B. Which has one stable ion C. Which has two stable ions D. Which has at least one stable ion with

		incomplete d-orbital
81	Bell metal is an alloy of	A. Cu, Zn, and Sn B. Cu, Zn and Ni C. Cu and Zn D. Cu and Sn
82	Addition of iron fillings to $CuSO_4$solution caused precipitation of Cu owing to the	A. Reduction of Cu²⁺ B. Oxidation of Cu²⁺ C. Reduction of Fe D. Reduction of Fe³⁺
83	Iron, once dipped in concentrated H_2SO_4, does not displace copper from copper sulphates solution, because	A. It less reactive than copper B. A layer of sulphates is deposited on it C. An inert layer of iron oxide is deposited on it D. All valence electrons of iron are consumed
84	Which of the following transition metal ions will have definite value of magnetic moment?	A. Se³⁺ B. Ti³⁺ C. Cu⁺ D. Zn²⁺
85	Which of the following metal exhibits more than one oxidation?	A. Na B. Mg C. Fe D. Al
86	Which has the largest radius?	A. CO³⁺ B. Mn³⁺ C. Fe³⁺ D. Cr³⁺
87	Rusting of iron is catalysed by	A. Fe B. O₂ C. Zn D. H⁺
88	In the manufacture of iron from haematitie,limestone is added to act as	A. Flux B. A reducing agent C. Slag D. An oxidizing agent
89	Sodium thisoulophate is used in photography because of its	A. Oxidizing behaviour B. Reducing behaviour C. Complexing behaviour D. Photochemical behaviour
90	Bessemer converter is used in the manufacture of	A. Pig iron B. Steel C. Wrought iron D. Cast iron
91	High purity copper metal is obtained by	A. Carbon reduction B. Hydrogen reduction C. Electrolytic reduction D. Thermite reduction
92	The compound which gives oxygen on moderate heating is	A. Zinc oxide B. Mercuric oxide C. Aluminium oxide D. Ferric oxide
93	The number of unpaired electrons in ferrous ion (Z - 26) is	A. 3 B. 2 C. 4 D. 5
94	German silver does not contain	A. Cu B. Zn C. Ni D. Mn
95	Non-formation of menisus by Hg in presence of $O_3$is due to the formation of	A. Mercuric oxide B. Mercurous oxide C. Mercuric chloride D. Mercurous chloride
96	Among the lanthandes the one obtained by synthetic method is	A. Lu B. Pm C. Pr D. Gd
97	The total number of rare earth elements is	A. 8 B. 32 C. 14 D. 10
		A. Zn B. Sn

98	Corrosion of iron can be prevented by coating the surface with	C. Ni D. Any of the above
99	Turnbull's blue is a compound called?	A. Ferricyanide B. Ferrous ferricyanide C. Ferrous cyanide D. Ferri - Ferro cyanide
100	Choose the correct answer of transition elements?	A. Transition elements have low melting points B. Transition elements do not have catalytic activity C. Transition elements exhibit variable oxidation states D. Transition elements exhibit inert pair effect
101	Mercury is the only metal which is liquid at 0°C. this is due to its	A. Very high ionization energy and weak metallic bond B. Low ionization potential C. High atomic weight D. High vapour pressure
102	Which of the following compounds gives red precipitate with $AgNO_3$?	A. KI B. K₂CrO₄ C. NaBr D. NaNO₃
103	Stainless steel contains ion and carbon along with	A. Ni and Cr B. Cr and Co C. Co and Mn D. Mn and Ni
104	Which of the following is not correct about transition metals?	A. Their melting and boiling points are high B. Their compounds are generally coloured C. They can form ionic or covalent compounds D. They do not exhibit variable valency
105	The equivalent weight of $KMnO_4$(formula weight = M) when it is used as an oxidant in neutral medium is	A. M B. M/2 C. M/3 D. M/5
106	The total number of inner transition elements in the periodic table is	A. 10 B. 14 C. 28 D. 30
107	The lanthanides contraction is responsible for the fact that	A. Zr and Y have about the same radius B. Zr and Nb have similar oxidsation state C. Zr and Hf have about the same radius D. Zr and Zn have the same oxidation satete
108	Which of the following element is responsible for oxidation of water to O_2in biological process?	A. Fe B. Mn C. Cu D. Mo
109	What is wrong about transition metals?	A. Diamagnetic B. Paramagnetic C. Form complexes D. Shows variable oxidation state
110	Besides Zn and Cu , German silver contains the metal	A. Sn B. Ag C. Ni D. Mg
111	Which of the following metals is sometimes found in native state in nature?	A. Al B. Cu C. Fe D. Mg
112	The number of unpaired electrons in $Mn^{2+}$is	A. 5 B. 4 C. 3 D. 2
113	The number of unpaired electrons in Fe^{3+}(Z = 26) are	A. 5 B. 6 C. 3 D. 4
114	In the extraction of iron, slag is produced which is	A. CO B. FeSiO₃ C. MgSiO₃ D. CaSiO₃
115	The iron obtained from blast furnace is	A. Pig iron B. Wrought ion C. Soft ion

		C. Soft iron D. Steel
116	Transition metals mostly are	A. Diamagnetic B. Paramagnetic C. Neither diamagnetic nor paramagnetic D. Both diamagnetic and paramagnetic
117	What is the shape of $Fe(CO)_5$molecule?	A. Tetrahedral B. Octahedral C. Trigonal bipyramidal D. Square pyramidal
118	The protection of steel by chrome plating is due to	A. Cathodic protection B. Anodic protection C. Covering of steel surface D. Formation of alloy with iron
119	Which of the following is not an element?	A. Graphite B. Diamond C. 22-Carat gold D. Rhombic sulphur
120	Across the lanthanide series, the basicity of the lanthanide hydroxides	A. Increases B. Decreases C. First increases and then decreases D. First decreases and then increases
121	How many mole of acidfied $FeSO_4$solution can be completely oxidized by one mole of $KMNO_4$?	A. 10 B. 5 C. 6 D. 2
122	In an ooctahedral crystal field splitting, the number of orbitals pushed down in energy is	A. 3 B. 2 C. 5 D. Zero
123	Which of the following elements does not show variable oxidation states?	A. Copper B. Iron C. Zinc D. Titanium
124	Cuprous ore among the following is	A. Chalcopyites B. Azurite C. Cuprite D. Malachitre
125	Which of the following is obtained when Fe reacts with dil. HNO_3?	A. N₂O B. NO C. NO₂ D. None of these
126	Most common oxidation states shownby cerium are	A. +2, +4 B. +3, +4 C. +3, +5 D. +2, +3
127	An element in +3 oxidation state has the electronic configuration (Ar) $3d^3$. Its atomic number is	A. 24 B. 23 C. 22 D. 21
128	Misch mental is	A. An alloy of Aluminium B. A mixture of chromium and lead chromate C. An alloy of lanthanoid metals D. An alloy of copper
129	Which of the following is a carbonate are?	A. Pyrolusite B. Malchite C. Diaspore D. cassiterite
130	Which of the following has the maximum number of unpaired d-electrons?	A. Zn B. Fe²⁺ C. Ni³⁺ D. Cu⁺
131	Which one of the following metal ions is colourless?	A. V²⁺ B. Cr³⁺ C. Zn²⁺ D. Ti³⁺
132	AgCl is soluble is	A. Aqua regia B. H₂SO₄ C. HCl D. NH₃
		A. Cr B. Mn

133	Which of the following is non-typical transition element?	B. Mn C. Zn D. Fe
134	Which of the following is a typical transition metal?	A. Sc B. Y C. Ra D. Co
135	Group VI-B of transition elements contains:	A. Zn, Cd, Hg B. Fe ,Ru ,Os C. Cr, Mo ,W D. Mn, Te, Re
136	Which is the formula of tetra-ammine chloronitro platinum (VI) sulphate?	A. [Pt(NH₃)₄(NO₂)]SO₄ B. [PtNO₂Cl(NH₃)₄]SO₄ C. [PtCl(NO₂)(NH₃)₄]SO₄ D. [Pt(NH₃)₄(NO₂)Cl]SO₄
137	The percentage of carbon in different types of iron products is in the order of:	A. Cast iron > wrought iron > steel B. wrought iron > steel > cast rion C. Cast iron > steel > wrought iron D. Cast iron = steel > wrought iron
138	The colour of transition metal complexes is due to:	A. d-d transitions of electorns B. Paramagnetic nature of transition C. Ionization D. Loss of s-electrons
139	Coordination number of Pt in $[PtCl(NO^2)(NH^3)^4]^{2-}$	A. 2⁻ B. 4 C. 1 D. 6
140	The total number of transition elements is:	A. 10 B. 14 C. 40 D. 50
141	Which is non typical transition element :	A. Ni B. Co C. Y D. Fe
142	$[Ti(H_2O)_6]^{+3}$ ion absorbs colour:	A. Blue B. Yellow C. Green D. Red
143	Coordination sphere may be:	A. Cationic B. Anionic C. Neutral D. All above
144	Rusting can be avoided by :	A. Making alloys B. Tin or Zinc plating C. Use of enamel D. All of these
145	During oxidation in $k_2Cr_2O_7$, Cr VI changes to :	A. I B. II C. III D. IV
146	Solubility of $KMnO_4$ at higher temperature is:	A. 5% B. 7% C. 15% D. 25%
147	Maximum variable oxidation state is of:	A. Mn⁺² B. Fe⁺³ C. Cr⁺¹ D. a and b
148	Content of carbon in steel is:	A. 0.12 to 0.25% B. 0.25% to 2.5% C. 3.0 to 3.5% D. 4.0 to 4.5%
149	Property of transition element is :	A. Low m.p and b.p B. Parramagnetism C. Oxidation state D. Low binding energies
		A. CO

150	Oxalic acid oxidizes to:	B. CO₂ C. Oxalates D. None of these
151	3-d series elements are present in:	A. First period B. Second Period C. Third period D. 4th period
152	Which period starts from $_{11}Sc$ to $_{30}Zn$?	A. First Period B. Second Period C. Third Period D. 4th Period
153	Series starting form $_{39}Y$ to $_{48}CD$ is in period:	A. 4th B. 5th C. 6th D. 7th
154	4-d series is in the period:	A. 4th B. 5th C. 6th D. 7th
155	5-d series is in the period :	A. 4th B. 5th C. 6th D. 7th
156	Series starting from57La,42Hf -80Hg is in the period:	A. 4th B. 5th C. 6th D. 7th
157	6-d series is in the period :	A. 4th B. 5th C. 6th D. 7th
158	d-block elements are also called :	A. alkali metal B. Alkaline earth metals C. Transition elements D. Electron deficient elements
159	f-block elements are called :	A. Alkali metal B. Alkakline earth metals C. Transition elements D. Electron deficient elements
160	Transition elements are called so because:	A. Form interstital sompounds B. have high m.p C. In between 's' and' 'p' block elements D. All of these