ECAT Chemistry Chapter 17 Transition Elements Online Test

Sr	Questions	Answers Choice
1	The total number of inner transition elements in the periodic table is	A. 10 B. 14 C. 28 D. 30
2	Bronze is an alloy which contains	A. 60% cu B. 70% cu C. 80% cu D. 99% cu
3	Which of the following elements does not show variable oxidation states?	A. Copper B. Iron C. Zinc D. Titanium
4	Potassium ferrocyanide is a	A. Mixed salt B. Double salt C. Complex salt D. Normal salt
5	5-d series is in the period :	A. 4th B. 5th C. 6th D. 7th
6	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
7	Which of the following is a typical transition metal	A. Sc B. Y C. Ra D. Co
8	Which of the following transition metal ions will have definite value of magnetic moment?	A. Se³⁺ B. Ti³⁺ C. Cu⁺ D. Zn²⁺
9	Which is used to identify Cu^{2+} ions	A. Nitric acid B. Sulfuric acid C. NaOH D. HCl
10	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
11	$CuSO_4.5H_2O$ is used to prepare	A. Transition complex B. Fehling's 'A' sol C. Fehling's 'B' sol D. Fehling's sol
12	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
13	Which of the following is used as disinfectant	A. K₂Cr₂O₇ B. KMnO₄ C. K₂MnO₄ D. K₂CrO₄
14	Stainless steel contains ion and carbon along with	A. Ni and Cr B. Cr and Co C. Co and Mn D. Mn and Ni

15	AgCl is soluble is	A. Aqua regia B. H₂SO₄ C. HCl D. NH₃
16	Bell metal is an alloy of Sn and	A. Copper B. Iron C. Zinc D. Magnesium
17	The total number of transition elements is:	A. 10 B. 14 C. 40 D. 50
18	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
19	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
20	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
21	Besides Zn and Cu , German silver contains the metal	A. Sn B. Ag C. Ni D. Mg
22	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
23	Which of the following is a non-typical transition elements	A. Cr B. Mn C. Zn D. Fe
24	Bell metal is an alloy of	A. Cu, Zn, and Sn B. Cu, Zn and Ni C. Cu and Zn D. Cu and Sn
25	Which has the largest radius?	A. CO³⁺ B. Mn³⁺ C. Fe³⁺ D. Cr³⁺
26	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
27	The number of unpaired electrons in ferrous ion (Z - 26) is	A. 3 B. 2 C. 4 D. 5
28	Which of the following is a transition element	A. Sr B. Sn C. Cr D. Pb
29	In the extraction of iron, slag is produced which is	A. CO B. FeSiO₃ C. MgSiO₃ D. CaSiO₃
30	Most common oxidation states shownby cerium are	A. +2, +4 B. +3, +4 C. +3, +5 D. +2, +3
31	Across the lanthanide series, the basicity of the lanthanide hydroxides	A. Increases B. Decreases C. First increases and then decreases

		C. First increases and then decreases D. First decreases and then increases
32	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
33	Which alloy contains 50% copper, 25% zinc and 25% nickel	A. German silver B. Gun metal C. Bell metal D. Brass
34	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
35	Corrosion of iron can be prevented by coating the surface with	A. Zn B. Sn C. Ni D. Any of the above
36	Transition metals form complexes due to the participation of partially filled	A. f-orbitals B. d-orbitals C. s-orbitals D. p-orbitals
37	The oxidation state of Fe in $[Fe(CN)_6]^{3-}$is	A. +2 B. +3 C. +4 D. -3
38	Among the lanthandes the one obtained by synthetic method is	A. Lu B. Pm C. Pr D. Gd
39	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
40	Coordination number of Pt in $[Pt\ Cl(NO_2)\ (NH_3)]^{2-}$is	A. 2- B. 4 C. 1 D. 6
41	Interstitial compounds have	A. Half formula B. Fixed formula C. Indefinite formula D. None
42	Group VI-B of transition elements contains:	A. Zn, Cd, Hg B. Fe ,Ru ,Os C. Cr, Mo ,W D. Mn, Te, Re
43	The geometry of $[Co(NH_3)_6]^{3+}$is	A. Tetrahedral B. Square planar C. Octahedral D. None of these
44	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
45	$[Ti(H_2O)_6]^{+3}$ion absorbs colour:	A. Blue B. Yellow C. Green D. Red
46	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
47	Which of the following element is responsible for oxidation of water to O_2in biological process?	A. Fe B. Mn C. Cu D. Mo
48	$[Zn(NH_3)_4]^{3+}$possess geometry	A. Square plannar B. Hexagonal C. Tetrahedral

		D. None of these
49	The number of unpaired electrons in Fe^{3+}(Z = 26) are	A. 5 B. 6 C. 3 D. 4
50	Transition metals mostly are	A. Diamagnetic B. Paramagnetic C. Neither diamagnetic nor paramagnetic D. Both diamagnetic and paramagnetic
51	Rusting of iron is catalysed by	A. Fe B. O₂ C. Zn D. H⁺
52	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
53	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]
54	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
55	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%
56	Corrosion may be prevented by	A. Allcying B. Paints C. Metallic coatings D. All
57	In physical and chemical properties, transition elements show	A. Similarities B. Dissimilarities C. Both of these D. Somestimes similarities, sometimes dissimilarities
58	Potassium chromate has formula	A. KClO₃ B. K₂CO₃ C. K₂CrO₄ D. K₂Cr₂O₇
59	In an ooctahedral crystal field splitting, the number of orbitals pushed down in energy is	A. 3 B. 2 C. 5 D. Zero
60	The iron obtained from blast furnace is	A. Pig iron B. Wrought ion C. Soft ion D. Steel
61	Which element does not belong to 4d series	A. Y B. Zr C. Mo D. Zn
62	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
63	The total number of transition elements is	A. 10 B. 14 C. 40 D. 50
64	Which of the following metal exhibits more than one oxidation?	A. Na B. Mg C. Fe D. Al
65	$[Cu[NH_3)_4]^{+2}$will form _____ structure	A. Square planar B. Tetrahedral C. Octahedral D. Trigonal bipyramidal

66	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
67	f-block elements are called :	A. Alkali metal B. Alkakline earth metals C. Transition elements D. Electron deficient elements
68	During oxidation in $k_2Cr_2O_7$, Cr VI changes to :	A. I B. II C. III D. IV
69	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
70	Which one of the following metal ions is colourless?	A. V²⁺ B. Cr³⁺ C. Zn²⁺ D. Ti³⁺
71	The elements in which d or f-orbitals are incomplete are called	A. Transition elements B. Typical elements C. Actinides D. lanthanides
72	Bessemer converter is used in the manufacture of	A. Pig iron B. Steel C. Wrought iron D. Cast iron
73	The total number of d-bock transition element is	A. 10 B. 14 C. 40 D. 30
74	6-d series is in the period :	A. 4th B. 5th C. 6th D. 7th
75	E.D.T.A is	A. Mono-dentate B. Bi-dentate C. Polydentate D. Having three lone pairs of electrons
76	Which of the following is a not typical transition element	A. Cr B. Mn C. Zn D. Fe
77	Coordination sphere may be:	A. Cationic B. Anionic C. Neutral D. All above
78	Bronze is an alloy of Cu and	A. Zn B. As C. Sb D. Sn
79	The total number of rare earth elements is	A. 8 B. 32 C. 14 D. 10
80	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
81	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
82	$[Co(NH_3)_6]^{3+}$will form _____ structure	A. Square planar B. Tetrahedral C. Octahedral D. Trigonal bipyamidal
		A. Diamagnetic

83	What is wrong about transition metals?	B. Paramagnetic C. Form complexes D. Shows variable oxidation state
84	Turnbull's blue is a compound called?	A. Ferricyanide B. Ferrous ferricyanide C. Ferrous cyanide D. Ferri - Ferro cyanide
85	Most transition elements show	A. Diamagnetic behavior B. Ferromagnetic behavior C. Paramagnetic behavior D. None of these
86	Which element has 4 unpaired electrons in 3d-orbital	A. Chromium - 24 B. Manganese - 25 C. Iron - 26 D. Cobalt - 27
87	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
88	Which of the following metals is sometimes found in native state in nature?	A. Al B. Cu C. Fe D. Mg
89	Which one of the following has highest density	A. Zn B. Os C. Ni D. Cu
90	Property of transition element is :	A. Low m.p and b.p B. Parramagnetism C. Oxidation state D. Low binding energies
91	Which of the following is not an element?	A. Graphite B. Diamond C. 22-Carat gold D. Rhombic sulphur
92	Electronic configuration of $Cu^{+2}$is	A. 4S², 3d⁹ B. 4s⁻¹, 3d¹⁰ C. 4S⁰, 3d⁹ D. None of these
93	Which is non typical transition element :	A. Ni B. Co C. Y D. Fe
94	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
95	Solubility of $KMnO_4$ at higher temperature is:	A. 5% B. 7% C. 15% D. 25%
96	The amount of Ni in stainless steel is	A. 3% B. 4% C. 5% D. 8%
97	German silver does not contain	A. Cu B. Zn C. Ni D. Mn
98	Oxalic acid oxidizes to:	A. CO B. CO₂ C. Oxalates D. None of these
99	4-d series is in the period:	A. 4th B. 5th C. 6th D. 7th
100	The formula of curprite is	A. Cu₂S B. Cus C. Cu₂O D. CuCO₃

		D. $CuCO_3$
101	Which metal is used for catalytic hydrogenation of oils	A. Cu B. Pt C. Ni D. Pd
102	Out of 110 known elements, transition elements are	A. 40 B. 60 C. 50 D. 80
103	Stainless steel contains Cr upto	A. 12% B. 18% C. 10% D. 5%
104	Which of the following is a typical transition metal?	A. Sc B. Y C. Ra D. Co
105	Group VIB of transition elements contains	A. Zn, Cd, Hg B. Fe, Ru, Os C. Cr, Mo, W D. Mn, Te, Re
106	The coordination number of iron in $[Fe(H_2O)_6]^{3+}$is	A. 2 B. 3 C. 4 D. 6
107	Which element belong to 5d series	A. V B. Nb C. Pd D. Hf
108	What is the shape of $Fe(CO)_5$molecule?	A. Tetrahedral B. Octahedral C. Trigonal bipyramidal D. Square pyramidal
109	d-block elements are also called :	A. alkali metal B. Alkaline earth metals C. Transition elements D. Electron deficient elements
110	Which element does not belong to 3d transition series	A. Ti B. V C. Mn D. Te
111	Transition elements form which type of bond	A. Ionic bonds only B. Covalent bonds only C. Ionic and covalent bonds D. Polar bonds
112	3-d series elements are present in:	A. First period B. Second Period C. Third period D. 4th period
113	High purity copper metal is obtained by	A. Carbon reduction B. Hydrogen reduction C. Electrolytic reduction D. Thermite reduction
114	Sodium thisoulophate is used in photography because of its	A. Oxidizing behaviour B. Reducing behaviour C. Complexing behaviour D. Photochemical behaviour
115	The oxidation number of Ni in $[Ni(CO)_4]$ is	A. +1 B. 0 C. +4 D. -4
116	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
117	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
118	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
119	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
120	What is the name of the comlex $[Ni(CO)_4]$	A. Tetracarbonylnickel (o) B. Tetracabonylnickel C. Tetracabonylnickel (II) D. Tetracabonylnickel (IV)
121	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
122	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
123	Coordination number of Pt in $[PtCl(NO^2)(NH^3)^4]^{2-}$	A. 2⁻ B. 4 C. 1 D. 6
124	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
125	Which period starts from $_{11}Sc$ to $_{30}Zn$?	A. First Period B. Second Period C. Third Period D. 4th Period
126	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
127	Cuprous ore among the following is	A. Chalcopyites B. Azurite C. Cuprite D. Malachitre
128	Which is not a bidentate ligand	A.
129	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
130	Maximum variable oxidation state is of:	A. Mn⁺² B. Fe⁺³ C. Cr⁺¹ D. a and b
131	Series starting from57La,42Hf -80Hg is in the period:	A. 4th B. 5th C. 6th D. 7th
132	Rusting can be avoided by :	A. Making alloys B. Tin or Zinc plating C. Use of enamel D. All of these
		A. Cr B. Mn

133	Which of the following is non-typical transition element?	B. Mn C. Zn D. Fe
134	Coordination number of Pt in $[PtCl(NO_2)(NH_3)_4]^{2+}$is	A. 2- B. 4 C. 1 D. 6
135	Series starting form $_{39}Y$ to $_{48}CD$ is in period:	A. 4th B. 5th C. 6th D. 7th
136	Which is in differnet phase form other metals	A. Ni B. Hg C. Cd D. Na
137	The color of Cr^{3+}ion is	A. Violet B. Blue C. Pink D. Green
138	Which of the following compounds gives red precipitate with $AgNO_3$?	A. KI B. K₂CrO₄ C. NaBr D. NaNO₃
139	$Cu^{2+}$with d^9electronic configuration appears	A. Yellow B. Pink C. Blue D. Green
140	Which of the following has the maximum number of unpaired d-electrons?	A. Zn B. Fe²⁺ C. Ni³⁺ D. Cu⁺
141	Which of the following d-block elements can show the highest oxidation number in its compounds	A. Chromium B. Copper C. Nickel D. Manganese
142	f-Block elements are also called	A. Non typical transition elements B. Outer transition elements C. Normal transition elements D. Inner transition elements
143	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
144	The number of unpaired electrons in $Mn^{2+}$is	A. 5 B. 4 C. 3 D. 2
145	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
146	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⁺
147	The Mn^{3+}has _____ color	A. Violet B. Green C. Red/brown D. No color
148	An oxidixing agent	A. K₂Cr₂O₇ B. H₂SO₄ C. FeSO₄ D. K₂SO₄
149	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
150	All 3d series elements show variable oxidation states. The one shown by all 3d elements is	A. +2 B. +3 C. +4 D. +5

151	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
152	Which of the following is a carbonate are?	A. Pyrolusite B. Malchite C. Diaspore D. cassiterite
153	Titanium is used as a catalyst in	A. Hydrogenation B. Dehydrogenation C. Polymerization of P.E. D. Oxidation of ammonia
154	Which of the following is obtained when Fe reacts with dil. HNO_3?	A. N₂O B. NO C. NO₂ D. None of these
155	A phtotographic plate is coated with an emulsion of silver nitrate and	A. AgCl B. AgI C. AgBr D. NaNO₃
156	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
157	The compound which gives oxygen on moderate heating is	A. Zinc oxide B. Mercuric oxide C. Aluminium oxide D. Ferric oxide
158	The free spaces between the metal atoms and its crystal lattice are called	A. Valance spaces B. Empty spaces C. Interstices D. None
159	Which of the following acts as ligand	A. NH₃ B. NH₂-- CH₂--CH₂-- NH₂ C. C₂O₂₋₄ D. All these
160	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