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SSC-I NATIONAL BOOK FOUNDATION FBISE

CHEMISTRY TEST - CHAPTER 7: ELECTROCHEMISTRY

Name:		Roll No.		Section:

Total Time: 2:30 Hour
Time Allowed: 150 Minutes

Total Marks: 150

PAPER OBJECTIVE
SECTION-A (MARKS 150)

NOTE: Section-A is compulsory. All parts of this section are to be answered on these pages and handed over to the center superintendent. Deleting / overwriting is not allowed. Do not use lead pencil.

Q.1 Fill the relevant bubble for each part. All parts carry one mark.

Questions	A	B	C	D	A B C D
1. Redox reactions involve oxidation and reduction occurring:	Simultaneously	Only in water	One after the other	Only in acids	●○○○
2. Oxidation is the _____ of oxygen.	Loss	Absence	Transfer to hydrogen	Gain	○○○●
3. Reduction is the _____ of oxygen.	Transfer	Loss	Sharing	Gain	○●○○
4. Oxidation is the _____ of hydrogen.	Sharing	Gain	Loss	Storage	○○●○
5. Reduction is the _____ of hydrogen.	Sharing	Storage	Gain	Loss	○○●○
6. Oxidation is the _____ of electrons.	Gain	Loss	Sharing	Storage	○●○○
7. Reduction is the _____ of electrons.	Loss	Gain	Sharing	Storage	○●○○
8. Rusting of iron, burning of fuel and metabolism of food are examples of:	Precipitation only	Acid-base reactions	Redox reactions	Neutralization	○○●○
9. Batteries and fuel cells use chemical energy to generate:	Light only	Electrical energy	Sound	Heat only	○●○○
10. In steel mills, iron oxide is converted to pure iron by reacting with:	Coke (carbon)	Salt	Air only	Water	●○○○
11. In $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$, the substance gaining oxygen is:	Fe_2O_3	CO_2 only	CO	Fe	○○●○
12. In $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$, the substance losing oxygen is:	Fe_2O_3	Fe	CO	CO_2	●○○○

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Questions	A	B	C	D	A B C D
13. In $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$, CO undergoes:	Neutralization	Precipitation	Reduction	Oxidation	○○○●
14. In $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$, Fe_2O_3 undergoes:	Reduction	Neutralization	Precipitation	Oxidation	●○○○
15. Acetylene has the formula:	CH_4	C_2H_2	C_2H_6	C_2H_4	○●○○
16. Acetylene is used for cutting and:	Welding metals	Making soap	Making plastic	Making glass	●○○○
17. The flame produced by burning acetylene is the:	Candle flame	Blue flame only	Bunsen flame	Oxy-acetylene flame	○○○●
18. In $2C_2H_2 + 5O_2 \rightarrow 4CO_2 + 2H_2O$, the substance losing hydrogen is:	O_2	H_2O	CO_2	C_2H_2	○○○●
19. In $CuO + Zn \rightarrow Cu + ZnO$, the species gaining electrons is:	O^{2-}	ZnO	Zn	Cu^{2+}	○○○●
20. In $CuO + Zn \rightarrow Cu + ZnO$, the oxidation state of Cu changes from:	+2 to 0	+1 to 0	+2 to +4	0 to +2	●○○○
21. In $CuO + Zn \rightarrow Cu + ZnO$, zinc is:	Reduced	Oxidized	Neutralized	A spectator	○●○○
22. In $CuO + Zn \rightarrow Cu + ZnO$, the spectator ion is:	Zn^{2+}	Zn	Cu^{2+}	O^{2-}	○○○●
23. In $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$, the carbon atom undergoes:	Neutralization	Nothing	Reduction	Oxidation	○○○●
24. In $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$, oxygen undergoes:	Nothing	Reduction	Oxidation	Neutralization	○●○○
25. In $2Ca + O_2 \rightarrow 2CaO$, calcium is:	Neutral	Oxidized	Reduced	A spectator	○●○○
26. In $2Ca + O_2 \rightarrow 2CaO$, each calcium atom loses _____ electrons.	3	4	2	1	○○●○
27. In $2Ca + O_2 \rightarrow 2CaO$, each oxygen atom gains _____ electrons.	2	1	3	4	●○○○
28. Oxidation state is defined as the number of _____ an atom will have in a compound.	Protons	Charges	Neutrons	Shells	○●○○
29. Elements showing an increase in oxidation number are:	Neutral	Catalysts	Oxidized	Reduced	○○●○
30. Elements showing a decrease in oxidation number are:	Reduced	Oxidized	Neutral	Catalysts	●○○○

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Questions	A	B	C	D	A B C D
31. The oxidation state of any free element is:	−1	+2	Zero	+1	○○●○
32. The oxidation state of Zn in metallic zinc is:	+2	+1	−2	0	○○○●
33. The oxidation state of H in H_2 is:	0	−1	+2	+1	●○○○
34. In simple ions the oxidation state equals the:	Charge on the ion	Atomic number	Mass number	Group number	●○○○
35. The oxidation state of Na in Na^+ is:	+1	0	−1	+2	●○○○
36. The oxidation state of Ca in Ca^{2+} is:	−2	+1	+2	0	○○●○
37. In a complex ion, the sum of oxidation states equals the:	Valency	Charge on the ion	Atomic number	Zero	○●○○
38. In CO_3^{2-} the sum of oxidation states of C and three O atoms is:	0	+2	−6	−2	○○○●
39. In NH_4^+ the sum of oxidation states is:	+4	0	−1	+1	○○○●
40. In a neutral compound the sum of oxidation states is:	Zero	Two	The charge	One	●○○○
41. The usual oxidation number of oxygen in compounds is:	−1	−2	0	+2	○●○○
42. The usual oxidation number of hydrogen in compounds is:	+2	−1	+1	0	○○●○
43. The oxidation number of K in compounds is:	−1	+1	0	+2	○●○○
44. The oxidation number of Cl in Cl^- is:	+7	−1	0	+1	○●○○
45. The oxidation state of carbon in CO_3^{2-} is:	−2	+6	+2	+4	○○○●
46. The oxidation state of Cr in $K_2Cr_2O_7$ is:	+2	+6	+7	+3	○●○○
47. A Breathalyzer contains acidic potassium dichromate, which is a strong:	Indicator	Oxidizing agent	Catalyst	Reducing agent	○●○○

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Questions	A	B	C	D	A B C D
48. The oxidation state of B in H_3BO_3 is:	+3	+1	−3	+6	●○○○
49. Boric acid is used in:	Glass	Eye wash	Fuel	Soap	○●○○
50. The oxidation state of S in H_2SO_4 is:	+6	+4	−2	+2	●○○○
51. The oxidation state of S in H_2S is:	+2	0	+4	−2	○○○●
52. The oxidation state of N in NO_2 is:	−3	+4	+5	+2	○●○○
53. The oxidation state of N in HNO_3 is:	−3	+3	+5	+1	○○●○
54. The oxidation state of N in NH_3 is:	−3	0	+3	+1	●○○○
55. The oxidation state of Mn in $KMnO_4$ is:	+2	+4	+6	+7	○○○●
56. The oxidation state of Mn in Mn^{2+} is:	+2	+7	+4	0	●○○○
57. The oxidation state of Cr in H_2CrO_4 is:	+6	+3	+7	+2	●○○○
58. The oxidation state of S in $Na_2S_2O_3$ is:	+4	+6	−2	+2	○○○●
59. The formula of calcium chloride is:	$CaCl_2$	Ca_2Cl	Ca_2Cl_2	$CaCl$	●○○○
60. The formula of magnesium oxide is:	Mg_2O	Mg_2O_2	MgO	MgO_2	○○●○
61. The formula of aluminium sulphate is:	$Al_2(SO_4)_3$	$Al_3(SO_4)_2$	$AlSO_4$	$Al(SO_4)_3$	●○○○
62. For calcium chloride, you need _____ chloride ions per calcium ion.	3	4	2	1	○○●○
63. In $Al_2(SO_4)_3$, the charge of aluminium is:	+3	+1	+2	+6	●○○○
64. The charge on the sulphate ion is:	−1	−3	−2	+2	○○●○

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Questions	A	B	C	D	A B C D
65. Parentheses are used in formulas when more than _____ polyatomic ion is needed.	Four	Three	One	Two	○○●○
66. Roman numerals show the oxidation state of metals with _____ oxidation states.	Variable	Fixed	Negative only	Zero	●○○○
67. $CuSO_4$ is named:	Cupric sulphite	Copper(II) sulphate	Copper(I) sulphate	Copper sulphide	○●○○
68. $FeCl_2$ is named:	Iron chlorine	Iron chlorate	Iron(II) chloride	Iron(III) chloride	○○●○
69. $FeCl_3$ is named:	Iron(III) chloride	Iron chlorate	Iron(II) chloride	Iron chlorine	●○○○
70. An oxidizing agent causes another substance to oxidize by _____ electrons from it.	Taking	Sharing	Storing	Giving	●○○○
71. An oxidizing agent is also called an electron:	Catalyst	Neutralizer	Acceptor	Donor	○○●○
72. Oxidizing agents themselves are:	Oxidized	Neutral	Reduced	Unchanged	○○●○
73. A reducing agent is also called an electron:	Donor	Acceptor	Catalyst	Neutralizer	●○○○
74. Reducing agents themselves are:	Neutral	Unchanged	Reduced	Oxidized	○○○●
75. Which is a common oxidizing agent?	Zinc	Hydrogen gas (H_2)	Chlorine (Cl_2)	Carbon monoxide	○○●○
76. Another example: Which is a common oxidizing agent?	Aluminium	Zinc	Hydrogen gas	Potassium permanganate	○○○●
77. Yet another: Which is a common oxidizing agent?	Aluminium	Zinc	Carbon monoxide	Hydrogen peroxide	○○○●
78. Which is a common reducing agent?	Hydrogen gas	Oxygen	Chlorine	Potassium permanganate	●○○○
79. Another example: Which is a common reducing agent?	Hydrogen peroxide	Oxygen	Zinc	Chlorine	○○●○
80. Yet another: Which is a common reducing agent?	Aluminium	Potassium permanganate	Oxygen	Chlorine	●○○○
81. In $2Na + Cl_2 \rightarrow 2NaCl$, the reducing agent is:	NaCl	None	Cl_2	Na	○○○●

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Questions	A	B	C	D	A B C D
82. In $2Na + Cl_2 \rightarrow 2NaCl$, the oxidizing agent is:	Cl_2	Na	None	NaCl	●○○○
83. When acidified $KMnO_4$ is added to $FeSO_4$, the purple colour:	Does not change	Becomes green	Is discharged	Becomes darker	○○●○
84. In the $KMnO_4/FeSO_4$ reaction, the oxidizing agent is:	Water	$KMnO_4$	$FeSO_4$	H_2SO_4	○●○○
85. In the $KMnO_4/FeSO_4$ reaction, the reducing agent is:	$KMnO_4$	H_2SO_4	$FeSO_4$	Water	○○●○
86. The MnO_4^- ion is _____ in colour.	Yellow	Green	Colourless	Purple	○○○●
87. The Mn^{2+} ion is _____ in colour.	Purple	Black	Colourless	Blue	○○●○
88. During the $KMnO_4$ reaction, the oxidation number of Mn changes from +7 to:	0	+2	+4	+6	○●○○
89. Acidified $KMnO_4$ is often used to test for the presence of:	Reducing agents	Oxidizing agents	Bases only	Acids only	●○○○
90. Potassium iodide is often used to test for the presence of:	Reducing agents	Oxidizing agents	Acids only	Bases only	○●○○
91. When KI is added to acidified H_2O_2, the solution turns:	Colourless	Green	Reddish-brown	Purple	○○●○
92. The reddish-brown colour is due to the formation of:	Chlorine	Iodine	Bromine	Oxygen	○●○○
93. In the H_2O_2/KI reaction, KI is:	Unchanged	Neutralized	Reduced	Oxidized	○○○●
94. In the H_2O_2/KI reaction, H_2O_2 is:	Unchanged	Oxidized	Neutralized	Reduced	○○○●
95. In $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$, the reducing agent is:	Fe	CO	CO_2	Fe_2O_3	○●○○
96. In $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$, the oxidizing agent is:	CO_2	Fe_2O_3	Fe	CO	○●○○
97. In $WO_3 + 3H_2 \rightarrow W + 3H_2O$, the oxidizing agent is:	H_2O	WO_3	W	H_2	○●○○
98. In $WO_3 + 3H_2 \rightarrow W + 3H_2O$, the reducing agent is:	W	WO_3	H_2O	H_2	○○○●

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Questions	A	B	C	D	A B C D
99. Tungsten is used for bulb filaments because it has the highest:	Reactivity	Mass	Melting point	Density	○○●○
100. In $H_2S + Cl_2 \rightarrow 2HCl + S$, H_2S behaves as:	Catalyst	Electrolyte	Reducing agent	Oxidizing agent	○○●○
101. In $CuO + H_2 \rightarrow Cu + H_2O$, the reducing agent is:	Cu	H_2	H_2O	CuO	○●○○
102. Corrosion is a natural _____ process.	Biological	Electrochemical	Physical	Nuclear	○●○○
103. Corrosion occurs when a metal reacts with oxygen and:	Carbon	Helium	Nitrogen	Moisture	○○○●
104. Corrosion converts refined metals to more stable metal:	Alloys	Salts only	Oxides	Metals	○○●○
105. The most familiar example of corrosion is the formation of rust on:	Silver	Copper	Gold	Iron	○○○●
106. For iron to rust, _____ and water are necessary.	Helium	Hydrogen	Oxygen	Nitrogen	○○●○
107. A region of the metal surface with less moisture acts as the:	Cathode	Anode	Salt bridge	Electrolyte	○●○○
108. A region with more moisture acts as the:	Electrolyte	Anode	Cathode	Wire	○○●○
109. At the anode, iron undergoes:	Precipitation	Neutralization	Oxidation	Reduction	○○●○
110. At the cathode, oxygen is reduced to:	Carbon dioxide	Water vapour	Hydrogen ions	Hydroxyl ions	○○○●
111. The formula of rust is:	Fe_3C	$FeCl_3$	$Fe_2O_3 \cdot xH_2O$	FeO	○○●○
112. Coating with paint prevents corrosion by creating a:	Cathode	Catalyst	Magnet	Barrier	○○○●
113. Alloying iron with chromium forms:	Bronze	Solder	Brass	Stainless steel	○○○●
114. Stainless steel is highly resistant to:	Heat only	Corrosion	Light	Sound	○●○○
115. Dipping iron sheets in molten tin is called:	Painting	Electroplating	Galvanizing	Tin plating	○○○●

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Questions	A	B	C	D	A B C D
116. Coating iron with zinc is called:	Tin plating	Galvanizing	Electroplating	Painting	○●○○
117. Depositing one metal on another by electrolysis is called:	Painting	Galvanizing	Electroplating	Tin plating	○○●○
118. Cathodic protection is also called _____ protection.	Barrier	Paint	Sacrificial	Surface	○○●○
119. In cathodic protection, the metal to be protected is made the:	Cathode	Electrolyte	Anode	Bridge	●○○○
120. Which metals are used in cathodic protection of iron?	Lead or tin	Silver or platinum	Copper or gold	Magnesium or aluminium	○○○●
121. Large bars of _____ protect ships against rusting.	Magnesium	Copper	Gold	Silver	●○○○
122. Cathodic protection is used for pipes, tanks and:	Plastics	Glass	Oil rigs	Paper	○○●○
123. In cathodic protection the more active metal acts as the:	Salt	Electrolyte	Cathode	Anode	○○○●
124. Oxidation state of nitrogen in N_2O is:	+1	+2	+4	−3	●○○○
125. Oxidation state of nitrogen in N_2O_3 is:	+1	−3	+3	+5	○○●○
126. Oxidation state of nitrogen in NO is:	+1	+2	−2	+4	○●○○
127. Oxidation state of S in SO_2 is:	+6	−2	+4	+2	○○●○
128. Oxidation state of S in SO_3 is:	+6	+2	−2	+4	●○○○
129. Oxidation state of P in H_3PO_4 is:	+1	+5	+3	−3	○●○○
130. Oxidation state of Cl in $HClO_4$ is:	+1	+5	−1	+7	○○○●
131. Oxidation state of C in CO_2 is:	0	+4	−4	+2	○●○○
132. Oxidation state of C in CH_4 is:	+2	0	+4	−4	○○○●

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Questions	A	B	C	D	A B C D
133. Oxidation state of Fe in Fe_2O_3 is:	+2	+6	0	+3	○○○●
134. Oxidation state of Cu in CuO is:	+2	0	−2	+1	●○○○
135. Oxidation state of Na in NaCl is:	+2	−1	+1	0	○○●○
136. In $2Mg + O_2 \rightarrow 2MgO$, magnesium is:	Oxidized	A spectator	Neutral	Reduced	●○○○
137. In $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$, zinc is the:	Catalyst	Spectator	Oxidizing agent	Reducing agent	○○○●
138. In $Mg + 2HCl \rightarrow MgCl_2 + H_2$, Mg is:	Reduced	Neutral	Oxidized	A spectator	○○●○
139. In $2KI + Cl_2 \rightarrow 2KCl + I_2$, Cl_2 is the:	Spectator	Oxidizing agent	Reducing agent	Catalyst	○●○○
140. In $2FeCl_2 + Cl_2 \rightarrow 2FeCl_3$, $FeCl_2$ is the:	Oxidizing agent	Reducing agent	Spectator	Catalyst	○●○○
141. Which describes oxidation in terms of oxidation numbers?	A decrease in oxidation number	No change in oxidation number	Zero oxidation number	An increase in oxidation number	○○○●
142. Which describes reduction in terms of oxidation numbers?	A decrease in oxidation number	An increase in oxidation number	Always zero	No change	●○○○
143. Colour change during a chemical reaction may indicate a _____ reaction.	Nuclear	Physical	Phase	Redox	○○○●
144. In $CuO + H_2 \rightarrow Cu + H_2O$, copper(II) oxide is:	Oxidized	Reduced	A spectator	Neutralized	○●○○
145. In $N_2 + 3H_2 \rightarrow 2NH_3$, nitrogen is:	Reduced	Oxidized	A spectator	Unchanged	●○○○
146. In $CO_2 + 2Mg \rightarrow 2MgO + C$, magnesium is:	Reduced	Oxidized	Unchanged	A spectator	○●○○
147. In $Mg + H_2O \rightarrow MgO + H_2$, hydrogen in water is:	Oxidized	A spectator	Unchanged	Reduced	○○○●
148. The prevention of corrosion helps in conserving our natural:	Seasons	Resources	Planets	Oceans	○●○○
149. Paint on cars, trucks and bridges also provides:	Visual appeal	Magnetism	Heat	Conductivity	●○○○

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Questions	A	B	C	D	A B C D
150. Electroplating is an _____ process.	Nuclear	Biological	Thermal	Electrolytic	○○○●

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