Subject: - Engineering Chemistry and Environmental Science

Section: - B

CORROSION AND LUBRICANTS

1. Volatile oxidation corrosion product of a metal is,
   A. Fe_2O_3
   B. MoO_3
   C. Fe_3O_4
   D. FeO
2. Lower is P^H, corrosion is,
   A. Greater
   B. Lower
   C. Constant
   D. None of above
3. Electrochemical corrosion takes place on,
   A. Anodic area
   B. Cathodic area
   C. Near cathode
   D. Near anode
4. Chemical formula of Rust is,
   A. Fe_2O_3
   B. FeO
   C. Fe_3O_4
   D. $Fe_2O_{3.X}H_2O$
5. Which of following metals could provide cathodic protection to Fe?
   A. Al & Cu
   B. Al & Zn
   C. Zn & Cu
   D. Al & Ni
6. Smaller the grain size, corrosion is,
   A. Greater
   B. Lower
   C. Constant
   D. Doesn't affected
7. Process of corrosion enhanced by,
   A. AIR & Moisture
   B. Electrolytes in water
   C. Metallic impurities
   D. Gases like CO_2 & SO_2
   E. All of above.

8. Standard electrode potential of hydrogen is,
   A. 1.00 V
   B. 0.00 V
   C. 0.01 V
   D. 0.001 V
9. Standard electrode potential of Al / Al^{3+} is,
   A. + 0.66V
   B. - 0.66 V
   C. - 1.66 V
   D. + 1.66 V
10. Standard electrode potential of Zn^{2+}/ Zn is,
   A. - 0.76 V
   B. + 0.76 V
   C. - 2.76 V
   D. + 2.76 V
11. Which of the following gases accelerates rusting of iron?
   A. CO_2
   B. SO_2
   C. NO_2
   D. All of above
12. Standard electrode potential of Fe^{2+}/Fe is,
   A. + 0.44 V
   B. - 0.44 V
   C. + 1.44 V
   D. - 1.44 V
13. Which of the following metal does not resists the corrosion process?
   A. Ni
   B. Cu
   C. Pb
   D. Fe
14. Viscosity index can be defined as,
   A. (L-U / L-H) X 100
   B. (L+U / L-H) X 100
   C. (L-H / L-U) X 100
   D. (L-H / L+U) X 100
15. Identify liquid lubricant from the following,
   A. Graphite
   B. Lubricating oil
   C. Mo Disulphide
   D. Soapstone

16. Identify the odd type of lubricant from following,
    A. Semi solid
    B. Liquid
    C. Gaseous
    D. Solid
17. Graphite is _____ lubricant.
    A. Solid
    B. Liquid
    C. Semi solid
    D. None of above.
18. Antiwear additive in extreme pressure additive is,
    A. Soapstone
    B. Tricresyl phosphate
    C. Mica
    D. Graphite
19. Calcium soap base grease is also called as,
    A. Soap grease
    B. Greases
    C. Axle grease
    D. Cup grease
20. Ethanol is used as,
    A. Polymeric thickener
    B. Polymer
    C. Polymeric thinner
    D. None of above.
21. What type of oil is suitable for thick film lubrication?
    A. Hydrocarbon oil
    B. Mineral oil
    C. Polymeric oil
    D. None of above.
22. What type of lubrication is used in delicate machines like watches, sewing machines, etc?
    A. Fluid film lubrication
    B. Extreme lubrication
    C. Boundary lubrication
    D. Thin film lubrication
23. Minimum separating distance in hydrodynamic lubrication is,
    A. 100 A^0
    B. 1000 A^0
    C. 10000 A^0
    D. 10 A^0

24. Coefficient of friction in fluid film or hydrodynamic lubrication is,
    A. 0. 1 to 0.3
    B. 0.01 to 0.03
    C. 0.001 to 0.03
    D. None of above.
25. Coefficient of friction for boundary lubrication is,
    A. 0.5 to 15
    B. 0.005 to 0.05
    C. 0.5 to 0.15
    D. 0.05 to 0.15
26. Special additives added to mineral oils are known as,
    A. Extreme pressure additives
    B. Special additives
    C. Mineral additives
    D. Lubricating additives
27. Important extreme pressure additives contains functional group from following,
    A. Chlorides
    B. Sulphides
    C. Phosphides
    D. All of above.
28. Animal and vegetable oils possess,
    A. Good oiliness
    B. Poor oiliness
    C. Optimum oiliness
    D. None of above.
29. Animal and vegetable oils are also used as,
    A. Oiliness carrier
    B. Blending agent
    C. Solvent agent
    D. Extreme pressure additives
30. Length of hydrocarbon chain in petroleum oils varies between about,
    A. 0 to 12 Carbon atoms
    B. 0 to 50 Carbon atoms
    C. 21 to 30 Carbon atoms
    D. 12 to 50 Carbon atoms
31. Shorter the chain of petroleum oil,
    A. Lower viscosity
    B. Higher viscosity
    C. Softer
    D. None of above.

32. Example of mineral / petroleum oil is or are,
    - **A. Oleic acid**
    - **B. Stearic acid**
    - C. Oxalic acid
    - D. Acetic acid
33. Purification of petroleum oil contains following sequence as,
    - A. Dewaxing, solvent refining, acid refining
    - **B. Dewaxing, acid refining, solvent refining**
    - C. Acid refining, dewaxing, solvent refining
    - D. Solvent refining, acid refining, dewaxing.
34. Acid refining step used to purify petroleum oil contains the use of,
    - **A. Conc. H_2SO_4**
    - B. Conc. HCl
    - C. Dil. H_2SO_4
    - D. Conc. HNO_3
35. In acid refining step which used to purify petroleum oil, comprises removal of excess Conc. H_2SO_4 with addition of calculated quantity of,
    - A. KOH
    - B. NH_4OH
    - C. $Ca(OH)_2$
    - **D. NaOH**
36. Solvent refining step in purification of petroleum oil comprises use of solvent,
    - A. Furfural
    - B. Dichloroethyl ether
    - C. Nitrobenzene
    - D. SO_2 + benzene
    - **E. All of above**
37. In solvent refining we can observe following layers in purification of petroleum oil,
    - **A. Oil**
    - **B. Solvent**
    - C. Impurity
    - D. None of above.
38. Blended oils can be prepared by mixing petroleum oil with,
    - A. Waxy substance
    - B. Different solvents
    - **C. Specific additives**
    - D. None of above

39. To increase oiliness of petroleum oil following which acid is not used,
    A. Palmitic acid
    B. Stearic acid
    C. Acetic acid
    D. Oleic acid
40. To increase viscosity index of petroleum oil which one of the following is used?
    A. Hexanol
    B. Methanol
    C. Ethanol
    D. 2-methoxy phenol
41. To decrease pour point of petroleum oil which is used from following?
    A. Ether
    B. Acetone
    C. Decane
    D. Phenol
42. _____ is used as abrasion inhibitor.
    A. Tribromyl sulphate
    B. Tricresyl napthanate
    C. Tricresyl phosphate
    D. None of above
43. _____ is used as emulsifier.
    A. Sodium salt of sulphonic acid
    B. Sodium salt of sulphuric acid
    C. Sodium salt of sulphurous acid
    D. Sodium salt of di-sulphonic acid
44. Antioxidants may be,
    A. Aromatic
    B. Phenolic
    C. Amino compounds
    D. All of above
45. To prevent corrosion phenomenon, combination of _____ is used,
    A. Phosphorous or Antimony
    B. Phosphorous or Chlorine
    C. Phosphorous or Nitrogen
    D. Antimony or Sodium
46. To prevent heat resistance property of grease, inorganic solid thickening agents are used from the following,
    A. Finely divided clay
    B. Bentonite
    C. Colloidal silica
    D. Carbon black

E. All of above

47. Main function of soap is,
    A. Thickening agent
    B. Soapy agent
    C. Lathering agent
    D. Corrosion preventer
48. Axle greases can be formed by adding _____ to resin and fatty oils.
    A. Lime
    B. Calcium
    C. soda
    D. Lithium
49. Graphite consists of _____ structure.
    A. Multitude layered
    B. Trigonal
    C. Orthorhombic
    D. Spiral
50. Graphite doesn't oxidize in air below temperature _____.
    A. 375^0 C
    B. 300^0 C
    C. 500^0 C
    D. 1057^0 C
51. When graphite is dispersed in water, is called,
    A. Oil dug
    B. Aqua dug
    C. Graphia-water
    D. None of above
52. Mo disulphide possesses very low_____.
    A. Coefficient of friction
    B. Lubricating property
    C. Frictional resistance
    D. Conductivity
53. Mo disulphide is stable in air up to _____ temperature.
    A. 200^0 C
    B. 300^0 C
    C. 400^0 C
    D. 375^0 C
54. Unit of viscosity is,
    A. Ohm
    B. Ohm^{-1}
    C. Poise
    D. Cm^{-1}

55. Low viscosity standard oil is,
    A. Petroleum oil
    B. Gulf oil
    C. Blended oil
    D. Mineral oil
56. High viscosity standard oil is,
    A. Blended oil
    B. Gulf oil
    C. Pennylsylvanian oil
    D. Petroleum oil
57. Viscosities of lubricating oil can be measured by
    A. Ostwald' viscometer
    B. Redwood viscometer
    C. Saybolt viscometer
    D. Ubbelhode viscometer
58. If viscosity of lubricating oil is measured by redwood viscometer, the flow time can be expressed as,
    A. 100 Redwood seconds at 20^0 C
    B. 100 Redwood viscometer working at T = 20^0 C
    C. At T = 20^0 C, flow time = 100 seconds
    D. At 20^0 C, 100 Redwood seconds
59. Redwood viscometer No. 1 is used to determine viscosities of,
    A. Lubricating Oils
    B. Thin lubricating oils
    C. Highly viscous oils
    D. None of above
60. Apparatus used to determine flash and fire points of lubricating oil is known as,
    A. Bomb calorimeter
    B. Spectrophotometer
    C. Redwood viscometer
    D. Pensky Martin Apparatus
61. In pour point apparatus the freezing mixture used is,
    A. Ice + $CaCl_2$
    B. Ice + $BaCl_2$
    C. Ice + $MgCl_2$
    D. Ice + $AlCl_3$
62. Lubricating oil should possess acid value,
    A. More than 0.1
    B. 0.1
    C. Less than 0.1
    D. None of above

63. Acid value is also called as,
    - **A. Acid number**
    - **B. Neutralization number**
    - C. Base number
    - D. Basic number
64. In differential aeration corrosion, poor oxygenated parts are,
    - **A. Anodic**
    - B. Cathodic
    - C. Corroded
    - D. None of above
65. Pitting corrosion is a _____ accelerated attack.
    - A. Non- localized
    - **B. Localized**
    - C. Diverse
    - D. None of above
66. In waterline corrosion highly oxygenated parts acts as,
    - **A. Cathodic**
    - B. Anodic
    - C. Corroded
    - D. None of above
67. Paints which are used to restrict corrosion are known as,
    - A. Anticorrosion paints
    - **B. Antifouling paints**
    - C. Special paints
    - D. Marine paints
68. Caustic embrittlement, a type of stress corrosion contains deposition of corrosion products,
    - **A. Na_2FeO_2**
    - B. $NaFeO_2$
    - C. K_2FeO_2
    - D. Fe_3O_4
69. In galvanic series, a metal high in series is more _____.
    - **A. Anodic**
    - B. Cathodic
    - C. Corroded
    - D. None f above
70. Hydrogen overvoltage is _____.
    - **A. + 0.33 V**
    - B. - 0.33 V
    - C. - 1.33 V
    - D. + 1.33 V

71. Ratio of volumes of metal oxides to metal is known as,
    A. Specific mass ratio
    B. Volume ratio
    C. Specific ratio
    D. Specific volume ratio
72. Relative humidity above which atmospheric corrosion rate of metal increases sharply is known as,
    A. Critical humidity
    B. Humidity rate
    C. Environmental humidity
    D. Atmospheric humidity
73. More active metal used in sacrificial anodic protection method is known as,
    A. Sacrificial anode
    B. Sacrificial cathode
    C. Active anode
    D. Active cathode
74. Identify the metal which is not employed as Sacrificial anode,
    A. Mg
    B. Zn
    C. Al
    D. Na
75. Identify the group which is not used as anodic inhibitor,
    A. Chromates
    B. Phosphates
    C. Sulphates
    D. Tungstates
76. Coating of Zn, Al and Cd on steel are _____ , because their electrode potentials are lower.
    A. Cathodic
    B. Anodic
    C. Not affecting
    D. None of above
77. _____ is used for producing a coating of low melting metal such as Zn, Sn, Pb, Al on Fe, steel and Cu.
    A. Hot dipping
    B. Anodic coating
    C. Cathodic coating
    D. Galvanizing
78. _____ is the process of coating Fe or steel with a zinc coating.
    A. Tinning
    B. Hot dipping
    C. Galvanizing
    D. None of above

79. _____ is the process of coating of tin over Fe or steel.
    A. Tinning
    B. Galvanizing
    C. Metal cladding
    D. Sheardizing
80. _____ coating is non toxic in nature.
    A. Sn
    B. Zn
    C. Fe
    D. Cu
81. Oxidation potential of Ni / Ni^{2+} is,
    A. + 0.284 V
    B. - 0.284 V
    C. + 2.284 V
    D. - 2.284 V
82. Fe or steel is ____ with respect to copper.
    A. Anodic
    B. Cathodic
    C. Corrosive
    D. Non corrosive
83. Al is _____ than Zn.
    A. Less anodic
    B. More anodic
    C. Less Cathodic
    D. More Cathodic
84. Zn is more _____ than Fe.
    A. Electronegative
    B. Corrosive
    C. Electropositive
    D. None of above
85. Required potential for protecting metal / alloy can be obtained from its _____.
    A. Potential current curve
    B. Protecting curve
    C. Potential curve
    D. None of above
86. Coating applied must be chemically _____ to the environment.
    A. Inert
    B. Reactive
    C. Soluble
    D. Non reactive

87. Acidic media are more corrosive than _____ and neutral media.
    A. Less acidic
    B. Alkaline
    C. Inert
    D. Non reactive
88. Reduction in over voltage of corroding metal / alloy accelerates the _____.
    A. Reactivity
    B. Inertness
    C. Corrosion
    D. Reduction
89. Presence of silicate anions leads to formation of _____ reaction products.
    A. Soluble
    B. Poisonous
    C. Corrosive
    D. Insoluble
90. Evolution of hydrogen type corrosion occurs in _____ environment.
    A. Acidic
    B. Neutral
    C. Basic
    D. Alkaline
91. Anodic reaction involves dissolution of metal as corresponding metallic ions with liberation of _____.
    A. Pair of electron
    B. Free electron
    C. Ions
    D. Current in electrolytic solution.
92. Destruction of metal starts _____.
    A. At the surface
    B. Just on layer below from surface
    C. In the middle
    D. At the bottom
93. Corrosion is a process reverse of _____ of metal.
    A. Destruction
    B. Extraction
    C. Rusting
    D. Galvanizing
94. Green film of basic carbonate on surface of Cu contains $CuCO_3$ and _____.
    A. $BaCO_3$
    B. $Ba(OH)_2$
    C. $Cu(OH)_2$
    D. CuO

95. Reddish scale of iron oxide has molecular formula _____.
    A. $Fe(OH)_3$
    B. Fe_2O_3
    C. Fe_3O_4
    D. FeO
96. From the following, which is inert to oxidation?
    A. Cu
    B. Fe
    C. Steel
    D. Pt
97. Conversion of Fe to Fe^{2+} is,
    A. Oxidation
    B. Reduction
    C. Corrosion
    D. None of above
98. Corrosion process is nothing but _____.
    A. Reduction
    B. Oxidation
    C. Protection
    D. None of above
99. Parts above and closely adjacent to waterline are _____.
    A. Protected
    B. Anodic
    C. Cathodic
    D. Inert to environment
100. The rusting of iron is catalyzed by which of the following?
    A. Iron
    B. Oxygen
    C. Zinc
    D. H^+

ENVIRONMENTAL CHEMISTRY

101. Pollutant is _____.
    A. Undesirable foreign matter
    B. Desirable foreign matter
    C. Required foreign matter
    D. Useful foreign matter
102. Smog is mixture of fog and _____.
    A. Gases
    B. Smoke
    C. Pollutants

D. Oxides

103. From the following, identify the gas which is not responsible for acid rain.

A. SO_2
B. NO_2
C. HCl
D. Ozone

104. Photochemical smog is formed by combination of nitrogen oxide and _____.

A. Hydrocarbons
B. Smoke
C. Fog
D. SO_2

105. Temperature rate of earth's atmosphere is increases due to green house effect is,

A. 0.05^0 C / Year
B. 0.05^0 C / Month
C. 0.15^0 C / Year
D. 0.05^0 C / Decade

106. From the following, identify the metal which can't pollute environment.

A. As
B. Pb
C. Pt
D. Hg

107. How much air does a man normally inhale in a day?

A. 16 Kg
B. 15 Kg
C. 10 Kg
D. Vary according to season

108. Effect of increasing CO_2 in air is _____.

A. Heating
B. Cooling
C. Increasing pollution
D. None of above

109. Naturally CO_2 is removed from air by _____.

A. Metallic reaction
B. Photosynthesis
C. Forestation
D. Deforestation

110. Most dangerous pollutant emitted in air during incomplete combustion of fuels is _____-.

A. CO
B. CO_2
C. NO_2
D. CH_4

111. The disease caused by presence of particulate pollutants in atmosphere is _____.
   A. Leukemia
   B. Bronchial asthma
   C. Anemia
   D. Lung's cancer

112. A part of atmosphere from where ozone concentration has been depleted is known as _____.
   A. Biosphere
   B. Ozone layer
   C. Ozone hole
   D. Ozone rich layer

113. A measure of oxidisable impurities present in the sewage is _____.
   A. COD
   B. BOD
   C. Atmospheric oxygen
   D. Ozone

114. When anaerobic decomposition continues the sewage is called as _____.
   A. Septic
   B. Stale
   C. Dirty
   D. Offensive

115. When aerobic decomposition continues the sewage is called as _____.
   A. Septic
   B. Stale
   C. Dirty
   D. None of above

116. The depth in soil below which soil particles are filled with water only known as _____.
   A. Water table
   B. Water layer
   C. Water quantity
   D. Depth of water

117. Skin cancer is also called as _____.
   A. Melanoma
   B. Anemia
   C. Leukemia
   D. None of above

118. Radioactive wastes disposed off in salt mines, because
   A. Salt absorbs it
   B. Salt reflects it
   C. Salt decreases the intensity of it
   D. None of above

119. Environment includes air, water, land and _____.
   A. Gases
   B. Biota
   C. Segments of Environment
   D. None of above
120. Soil, air and water come under _____ environment.
   A. Physical
   B. Biotic
   C. Living
   D. Meteorological
121. Climatic factors like temperature, sunlight, humidity may also be referred as,
   A. Climatic Environment
   B. Physical Environment
   C. Biotic Environment
   D. Meteorological Environment
122. Water can be placed in _____ segment of environment.
   A. Lithosphere
   B. Hydrosphere
   C. Biosphere
   D. Atmosphere
123. Water trapped in giant glaciers and polar ice caps is only _____%.
   A. 2
   B. 2.4
   C. 0.4
   D. 0.6
124. Water available for drinking purpose on earth is only about _____%.
   A. 0.5
   B. 6.0
   C. 0.06
   D. 0.6
125. The part of earth, upwards at least to a height of 10 Km is _____.
   A. Atmosphere
   B. Biosphere
   C. Hydrosphere
   D. None of above
126. Part of earth surrounding up to nearly 500 Km above from earth's surface is _____.
   A. Atmosphere
   B. Biosphere
   C. Lithosphere
   D. Environment

127. Region 20 - 40 Km above earth's surface is _____.
   A. Atmosphere
   B. Biosphere
   C. Environment
   D. Ozonosphere

128. Weight of atmosphere is about _____ tones.
   A. 5×10^{10}
   B. 5×10^{9}
   C. 5×10^{11}
   D. 5×10^{12}

129. At earth's surface density of air is _____ g / cm^3.
   A. 0.13
   B. 0.0013
   C. 0.013
   D. 0.3100

130. Region at about 40 – 100 Km above earth's surface which contains charged particles is called as _____.
   A. Ozonosphere
   B. Ionosphere
   C. Charge sphere
   D. Atmosphere

131. A protective layer which absorbs harmful ionizing radiations like cosmic and x-rays is _____
   A. Ozonosphere
   B. Atmosphere
   C. Protectosphere
   D. Ionosphere

132. 80 % of earth's surface is covered by water, so it called as _____
   A. Hydro planet
   B. Aqua planet
   C. Blue planet
   D. Special planet

133. Layer which absorbs harmful UV radiations falling on earth from sun is known as _____.
   A. Ionosphere
   B. Environment
   C. Ozonosphere
   D. Atmosphere

134. By volume CO_2 is present in atmosphere is only _____ %.
   A. 0.93
   B. 0.03
   C. 0.3
   D. 0.02

135. Saline water present in hydrosphere segment of environment is about _____ %.
   A. 95
   B. 2.4
   C. 97
   D. 96

136. Radiations received from sun are nothing but _____ energy.
   A. Solar
   B. Photochemical
   C. Natural
   D. Environmental

137. The layer which is just up to 6.4 Km above the earth is _____.
   A. Biosphere
   B. Atmosphere
   C. Ozonosphere
   D. Troposphere

138. Upper portion of troposphere is known as,
   A. Stratosphere
   B. Biosphere
   C. Ozonosphere
   D. Ionosphere

139. Air pollution mainly concerns state of _____.
   A. Atmosphere
   B. Ozonosphere
   C. Troposphere
   D. Stratosphere

140. Presence of SO_2 doesn't responsible for the _____ disease.
   A. Cardiac
   B. Respiratory
   C. Leukemia
   D. Pulmonary

141. From the following, identify the acid which is not responsible for acid rain.
   A. Acetic acid
   B. Sulphurous acid
   C. Nitrous acid
   D. Nitric acid

142. Which acid is responsible for acid rain?
   A. H_2SO_3
   B. HCl
   C. $C_2H_2O_4$
   D. Salicylic acid

143. Quantity of oxygen available to body cells when reduced it is generally known as,
A. Hemophilia
B. Leukemia
C. Anemia
D. Anoxia

144. Carbon monoxide directly attacks on the _____.
A. Chlorophyll
B. Hemoglobin
C. Haaecyanin
D. Haemerithrin

145. Ozone is _____ of oxygen.
A. Allotrope
B. Isomer
C. Isotope
D. Homomer

146. O_2 is converted into O_3 by absorption of _____.
A. Cosmic rays
B. UV light
C. Sun light
D. IR radiations

147. Emission of _____oxide by high flying supersonic aircrafts responsible for ozone depletion.
A. Sulphuric
B. Ferric
C. Nitric
D. Zinc

148. _____ are used in refrigeration and air conditioning.
A. CFC's
B. CH4
C. Ozone
D. Hydrocarbons

149. DNA breakage, inhibition, alteration, replication and formation of DNA adduct arises due to,
A. Acid rain
B. Green house effect
C. Global warming
D. Ozone layer depletion

150. Fine ash from pulverized fuel (coal) burned in power station is known as _____.
A. Coal ash
B. Fly ash
C. Pulverized ash
D. Fuel ash

151. London type of smog which contains SO_2, SO_3 and humidity is responsible for _____.
A. Pollution
B. Acid rain
C. Global warming
D. Ozone layer depletion

152. _____ is slow decaying radio nuclide.
A. Iodine 137
B. Neptunium 93
C. Radium 88
D. Technetium 43

153. Human ear can tolerate _____ decibel noise.
A. 100
B. 140
C. 120
D. 15

ELECTROCHEMISTRY

154. P^{OH} of pure water at 25^0 C is _____.
A. 7
B. 0
C. 14
D. None of above

155. Relationship between equivalent and molar conductance is,
A. $(\Lambda_m / \Lambda_{eq})$ = (Normality / 1)
B. $(\Lambda_m / \Lambda_{eq})$ = (1 / Molarity)
C. $(\Lambda_m / \Lambda_{eq})$ = (Molarity / Normality)
D. $(\Lambda_m / \Lambda_{eq})$ = (Normality / Molarity)

156. On dilution _____ conductivity decreases.
A. Specific
B. Equivalent
C. Molar
D. Molal

157. Electrochemical cell is a device which is used to get _____ energy.
A. Thermal
B. Electrical
C. Chemical
D. Mechanical

158. Battery is a type of _____ cell.
A. Electrolytic
B. Electrochemical
C. Chemo electric
D. Thermal

159. Dry cell is an example of _____cell.

A. Primary

B. Secondary

C. Electrochemical

D. Electrolytic

160. _____ is acts as anode in dry / laclanche cell.

A. Carbon rod

B. Mn

C. Zn

D. Fe

161. On anode _____ reaction occurs.

A. Oxidation

B. Reduction

C. Redox

D. None of above

162. In actual practice, emf of cell is_____.

A. 0.8 to 1.0 V

B. 1.0 to 1.8 V

C. 0.5 to 1.0 V

D. 0.5 to 1.8 V

163. Specific conductance is denoted by _____.

A. κ

B. ρ

C. σ

D. Ω

164. Unit of cell constant is _____.

A. Ω

B. Ω^{-1}

C. mho

D. cm^{-1}

165. Unit of specific conductance is _____

A. $\Omega^{-1} cm^{-1}$

B. S cm^{-1}

C. $\Omega\ cm^{-1}$

D. Ω^{-1} cm

166. Mathematically equivalent conductance is given as,

A. $\Lambda_{eq} = (1000\ \kappa / N)$

B. $\Lambda_{eq} = (1000\ \sigma / N)$

C. $\Lambda_{eq} = (1000\ \kappa\ \sigma / N)$

D. $\Lambda_{eq} = (1000\kappa / 2N)$

167. Unit of equivalent conductance is _____

A. Ω^{-1} cm^2 eq^{-1}

B. Ω cm^2 eq^{-1}

C. Ω cm^2 eq

D. Ω^{-1} cm^2 eq^{-2}

168. Unit of molar conductance is _____

A. Ω^{-1} cm^2 mol^{-1}

B. Ω cm^2 mol^{-1}

C. Ω^{-1} cm^{-1} mol^{-2}

D. Ω^{-1} cm^{-2} mol^{-1}

169. Fuel cells are _____ cells.

A. Primary

B. Secondary

C. Galvanic

D. none of the above

170. Aq._____ solution is used in Ni-metal hydride battery.

A. NaOH

B. KOH

C. NH_4OH

D. $Ca(OH)_2$

171. Cell potential of Ni - Metal hydride battery is,

A. 1.25 to 1.35 V

B. 0.25 to 1.3 V

C. 0.25 to 0.35 V

D. 0.025 to 1.35 V

172. Hydrogen in metal-hydride is used or acts as anode in _____ battery

A. Lithium Battery

B. Lithium MnO_2 cell

C. Lead Accumulator

D. Ni - metal Hydride battery

173. From conventional method, in ____ steps chemical energy is converted into electrical energy.

A. 3

B. 2

C. 1

D. 0

174. In fuel cell net energy profit is _____ %.

A. 20

B. 30

C. 40

D. 45

175. Theoretically any cell shows _____% efficiency.
A. 75
B. 50
C. 90
D. 100

176. Aqueous ____ solution is used as electrolytic solution in H_2-O_2 fuel cell.
A. NaOH
B. KOH
C. NH_4OH
D. $Mg(OH)_2$

177. Practically emf of fuel cell is ____ V.
A. 0.8 to 1.0
B. 0.8 to 0.1
C. 0.5 to 1.0
D. 0.7 to 1.7

178. In methanol - O_2 fuel cell cathode is Ni- sheet with _____ as catalyst.
A. Pt
B. Pd
C. Ag
D. Au

179. In methanol - O_2 fuel cell anode is Ni- sheet with _____ as catalyst.
A. Pt
B. Pd
C. Ag
D. Au

180. Efficiency of methanol - O_2 fuel cell is _____%.
A. 50 - 80
B. 100
C. 20
D. None of the above

181. In H_2 - O_2 fuel cell O_2 gas acts as _____.
A. Anode
B. Cathode
C. Reductant
D. Oxidant

182. In Li- MnO_2 cell _____ acts as separator.
A. Polyethene
B. Polypropylene
C. Polybutylene
D. Polymeric Li

183. In Li- MnO_2 cell _____ used as electrolytic solution

A. LiO

B. LiX in organic solvent

C. LiX in inorganic solvent

D. LiO in organic solvent

184. In Lithium batteries, electrolytes can't acts as aqueous solution because,

A. High reactivity of Li with H_2O

B. Low density of Li w. r. t. H_2O

C. High electro positivity of Li^+

D. None of above

185. A fresh dry cell has potential _____V

A. 1.0

B. 1.5

C. 2.0

D. 3.5

186. In dry cell in secondary reactions the complex formed is_____

A. $Zn[NH_3]_2Cl_2$

B. **$Zn[NH_3]Cl_2$**

C. **$ZnCl_2$**

D. **$Zn[NH_3]_2Cl$**

187. Conductivity of $1cm^3$ of solution is _____

A. Equivalent

B. Moral

C. Molal

D. Specific

188. $\Lambda_0 = \lambda_0^+ + \lambda_0^-$, is the mathematical relation of,

A. Ohm's Law

B. Debye Huckel Limiting Law

C. Ostwald's Law

D. Kohlrausch Law

189. The battery used in automobiles is _____

A. Lead accumulator

B. Ni-metal hydride

C. Li-MnO_2

D. Laclanche cell

190. Cell constant can be defined as _____

A. (Specific / Observed) Conductance

B. (Observed / Specific) Conductance

C. (1 / Specific) Conductance

D. (1 / Observed) Conductance

191. Flow of electricity through electrolytic solution is due to migration of _____
A. Electrons
B. Ions
C. Matter
D. None of the above

192. Mathematical statement of ohm's law is,
A. I = E/R
B. E = R/E
C. E = I/R
D. E =R/I

193. In lead accumulator electrolytic solution is_____
A. 20% H_2SO_4
B. 20% HCL
C. 20% HNO_3
D. 20% $C_2H_2O_4$

194. Temp. of thermosphere in environment is _____
A. -92 to 120 ^{0}C
B. -92 to 1200 ^{0}C
C. -92 to 1000 ^{0}C
D. -92 to 2200 ^{0}C

195. Biosphere is very complex it is divided into smaller units called as _____.
A. Biotic system.
B. Ecosystem
C. Biosystem
D. Ecology

196. Most of mass of atmosphere is concentrated in_____.
A. Mesosphere
B. Stratosphere
C. Troposphere
D. Thermosphere

197. _____ is called as protective blanket of gases surrounding earth.
A. Lithosphere
B. Atmosphere
C. Biosphere
D. Hydrosphere

198. Natural water contains _____ mg / lit of dissolved oxygen.
A. 4 - 6
B. 1 - 2
C. 8 - 10
D. 15 – 20

199. Aquatic animals survive at dissolved oxygen more than _____ mg / it.

A. 1.5

B. 2.5

C. 3

D. 0.25

200. Application of Kohlrausch law,

A. Determination of equivalent conductance of weak electrolyte

B. Determination of degree of dissociation

C. Determination of ionic product of water

D. All of above.