

-
- Half life period of first order reaction is independent of
 - Initial concentration of reactant
 - Temperature
 - Pressure
 - None of these
 - The unit of rate of reaction and rate constant are same in _____ order reaction.
 - Zero
 - First
 - Second
 - Third
 - Radioactive disintegration is an example of _____ order reaction.
 - Zero
 - First
 - Second
 - Third
 - $t_{1/2}$ for first order of reaction is
 - $0.6/k$
 - $0.693/k$
 - $0.683/k$
 - $0.10/k$
 - In IR spectroscopy, if concentration of sample is very high then the peak will become
 - very long
 - very broad
 - very short
 - none of these
 - IR spectroscopy does not provide the following information
 - molecular symmetry
 - band length
 - dipole moment
 - none of these

-
7. NMR performing experiments on the _____ of the atoms.
- (A) neutrons
 - (B) protons
 - (C) Electrons
 - (D) Nuclei
8. Acetone shows only one NMR signal, because it has
- (A) Six hydrogen
 - (B) H atom, similar environment
 - (C) H atom, dissimilar environment
 - (D) None of these
9. $\text{CH}_3 - \text{CH} = \text{CH}_2$ has _____ signals, due to cis-trans isomerism.
- (A) Three
 - (B) Four
 - (C) Five
 - (D) Six
10. The chemical shift denoted by ' δ ' is dimension less and expressed in
- (A) ppm
 - (B) cm^{-1}
 - (C) Hz
 - (D) none of these
11. _____ spectroscopy is also used in the semiconductor industry to measure the thickness and optical properties of thin films on a wafer.
- (A) UV-Visible
 - (B) NMR
 - (C) IR
 - (D) Fluorescence
12. Which of the following is a colour carrier substance
- (A) chromophore
 - (B) auxochrome
 - (C) chemical shift
 - (D) none of these
-

-
13. Which spectroscopy causes bending and stretching vibrations in organic compounds?
- (A) UV-spectroscopy
 - (B) IR-spectroscopy
 - (C) NMR-spectroscopy
 - (D) none of these
14. The principle which excludes the possibility of presence of a third electron in an orbital is,
- (A) Aufbau principle
 - (B) Hund's rule
 - (C) Pauli exclusion principle
 - (D) None of these
15. The separation between the peak of reference standard (TMS) and any other peak in an NMR spectrum is called
- (A) chromophore
 - (B) auxochrome
 - (C) chemical shift
 - (D) none of these
16. Bonding molecular orbitals are formed by overlap of
- (A) atomic radius
 - (B) atomic orbital
 - (C) nucleus
 - (D) none of these
17. According to VBT electrons in an atom occupy at
- (A) atomic radius
 - (B) atomic orbital
 - (C) nucleus
 - (D) none of these
18. The colour of transition metal ions arises due to
- (A) p-p transition
 - (B) s-s transition
 - (C) d-d transition
 - (D) none of these

19. The angular momentum of electrons in d-orbital is equal to
- (A) $\sqrt{6} h$
 - (B) $\sqrt{2} h$
 - (C) $2\sqrt{3} h$
 - (D) none of these
20. In NMR spectroscopy vinyl chloride gives
- (A) one signal
 - (B) three signals
 - (C) two signals
 - (D) none of these
21. Which of the following molecules has no net dipole moment?
- (A) HCl
 - (B) H₂O
 - (C) CCl₄
 - (D) CH₃Cl
22. In NMR spectroscopy propane gives
- (A) one signal
 - (B) three signals
 - (C) two signals
 - (D) none of these
23. Which of the following is not a colour carrier substance?
- (A) Chromosome
 - (B) Auxochrome
 - (C) Chemical shift
 - (D) All of the above
24. An atom having mass number 37 and atomic number 17, how many proton it contain?
- (A) 17
 - (B) 20
 - (C) 37
 - (D) 28

25. Which isotope of hydrogen contains only one proton and no neutron in its nucleus?
- (A) Protium
 - (B) Deuterium
 - (C) Tritium
 - (D) none of these
26. How many electrons does the outermost shell of neon have?
- (A) 8
 - (B) 7
 - (C) 6
 - (D) 5
27. The heaviest subatomic particle is
- (A) Electron
 - (B) Proton
 - (C) Neutron
 - (D) Positron
28. The number of unpaired electrons in Cr^{3+} ion is
- (A) 1
 - (B) 2
 - (C) 3
 - (D) 4
29. Which one of the following pairs of atoms, most likely to form ionic bond?
- (A) N and F
 - (B) C and F
 - (C) Na and F
 - (D) O and F
30. Which of the following is aluminium oxide?

- (A) AlO
(B) AlO_2
(C) Al_2O_3
(D) Al_3O_2
31. Which of the following has greatest covalent character?
(A) NaCl
(B) SiCl_4
(C) CaCl_2
(D) MgCl_2
32. Which of the following compound is electrovalent in nature?
(A) SO_2
(B) KBr
(C) CHCl_3
(D) CH_2Cl_2
33. Which of the following compound does not contain an ionic bond?
(A) NaOH
(B) HCl
(C) K_2S
(D) LiH
34. The unit of electro-chemical equivalent is
(A) m/coulomb
(B) gram/coulomb
(C) gram.ampere
(D) none of these
35. Faraday's laws of electrolysis are related to the

-
- (A) atomic number of carbon
- (B) equivalent mass of product
- (C) atomic number of anion
- (D) none of these
36. During electrolysis electrons are
- (A) lost by anion
- (B) gained by cation
- (C) both of these
- (D) none of these
37. Which of the following metal has highest melting point?
- (A) Molybdenum
- (B) Osmium
- (C) Tungsten
- (D) Zinc
38. The principle ore of iron is
- (A) Haematite
- (B) iron pyrites
- (C) spathic iron
- (D) none of these
39. Which of the following uses as reducing agent in the extraction of iron?
- (A) Carbon
- (B) Iodine
- (C) Chlorine
- (D) None of these
40. The principle ore of aluminium is

-
- (A) Bauxite
- (B) Alumina
- (C) Cryolite
- (D) None of these
41. The principle ore of copper is
- (A) copper pyrite
- (B) bauxite
- (C) cuprite
- (D) none of these
42. Which of the following is not an ore?
- (A) copper pyrite
- (B) bauxite
- (C) haematite
- (D) none of these
43. In the aluminothermite process, aluminium acts as a
- (A) oxidising agent
- (B) solder
- (C) Flux
- (D) Reducing agent
44. Froth floatation process is generally use for _____ ores.
- (A) Carbonate
- (B) Bi carbonate
- (C) Chloride
- (D) Sulphide
45. Which of the following is not an alloy?

- (A) Bronze
- (B) Steel
- (C) Brass
- (D) copper
46. Which of the following oxides of nitrogen is not common air pollutant?
- (A) NO_2
- (B) N_2O
- (C) NO
- (D) N_2O_5
47. Besides CO_2 , other greenhouse gas is
- (A) N_2
- (B) O_2
- (C) Ar
- (D) CH_4
48. Oxides of sulphur and nitrogen are important pollutants of
- (A) Air
- (B) Water
- (C) Soil
- (D) Noise
49. Ozone hole is caused by
- (A) Methane
- (B) Ethene
- (C) Acetylene
- (D) Chlorofluorocarbon
50. Which of the following gases is not a green house gas?

- (A) O_3
- (B) CH_4
- (C) CO_2
- (D) CO
51. Which of the following may be affected by acid rain?
- (A) plants
- (B) animals
- (C) buildings
- (D) All of the above
52. Which of the following is not a layer of atmosphere?
- (A) chromophore
- (B) troposphere
- (C) stratosphere
- (D) mesosphere
53. Green house effect means
- (A) cooling of earth
- (B) warming of earth
- (C) UV trapping
- (D) none of these
54. What is the shape of methane molecule?
- (A) triangular
- (B) linear
- (C) tetrahedral
- (D) hexagonal
55. Which of the following is Hinsberg reagent?
-

- (A) tetra methyl silane
(B) carbontetra chloride
(C) benzene sulphonyl chloride
(D) none of these
56. Primary, secondary and tertiary alcohol could be distinguish by _____ reagent.
(A) Hinsberg reagent
(B) Luca's reagent
(C) Both of these
(D) None of these
57. Primary, secondary and tertiary amine could be distinguish by _____ reagent.
(A) Hinsberg reagent
(B) Luca's reagent
(C) Both of these
(D) None of these
58. Phenol reacts with Na- metal and gives
(A) sodium benzoate
(B) sodium ethanoate
(C) sodium phenoxide
(D) No reaction
59. Bromine water reacts with ethene and gives
(A) Dibromoethane
(B) Tetrabromoethane
(C) Tribromoethane
(D) No reaction
60. Equivalent weight of H_2SO_4 is _____ unit.

- (A) 49
(B) 59
(C) 98
(D) 100
61. IUPAC name of acetic acid is
(A) methanoic acid
(B) ethanoic acid
(C) butanoic acid
(D) propanoic acid
62. _____ is also known as king of chemicals.
(A) nitric acid
(B) sulphuric acid
(C) butanoic acid
(D) propanoic acid
63. Chlorophyll contains _____ metal.
(A) Fe
(B) Mg
(C) Cu
(D) Ag
64. Which of the following contains glycosidic linkage?
(A) glucose
(B) fructose
(C) sucrose
(D) propanoic acid
65. Which of the following does not obey Aufbau principle?

- (A) Cr
(B) Cu
(C) Ag
(D) All of the above
66. Principal quantum number 'n' is equal to 2, then azimuthal quantum number should be
(A) 0,1
(B) 0,1,2
(C) 0,1,2,3
(D) none of these
67. Which of the following present in cathode rays?
(A) electron
(B) proton
(C) neutron
(D) none of these
68. The value of one quantum of energy is represented by
(A) $E = h\nu$
(B) $E = m\nu$
(C) $E = \lambda\nu$
(D) none of these
69. Value of spin quantum number may be
(A) $+1/2$ and $-1/2$
(B) +3
(C) +2
(D) none of these
70. The equivalent weight of sodium hydroxide is

- (A) 40
(B) 30
(C) 20
(D) 10
71. 500 ml N/10 NaOH solution contains _____ gram NaOH.
(A) 1
(B) 2
(C) 3
(D) 4
72. Basicity of H_2SO_4 sulphuric acid is
(A) 2
(B) 3
(C) 4
(D) 5
73. Sodium chloride is an example of
(A) Acidic
(B) Basic
(C) Neutral
(D) None of these
74. Proton donors are called
(A) Acid
(B) Base
(C) Both of these
(D) None of these
75. The sum of pH and pOH is

- (A) 9
(B) 12
(C) 14
(D) none of these
76. _____ is a Lewis acid
- (A) CaCl_2
(B) AlCl_3
(C) NaCl
(D) NH_3
77. Acidic hydrogen is present in
- (A) Methane
(B) Benzene
(C) Ethyne
(D) Ethane
78. Potash alum is an example of
- (A) Double salt
(B) Acidic salt
(C) Simple salt
(D) Complex salt
79. What is the maximum oxidation state that nitrogen can have?
- (A) +4
(B) +5
(C) +6
(D) +2
80. Percentage composition of nitrogen in urea molecule is

- (A) 46.66%
- (B) 48.66%
- (C) 50.66%
- (D) 51.66%

81. Liquid ammonia is

- (A) Ammonium hydroxide
- (B) Ammonium chloride
- (C) Ammonia gas
- (D) None of these

82. Which of the following is a covalent molecule?

- (A) NCl_3
- (B) NaCl
- (C) KCl
- (D) CaCl_2

83. Which of the following is a linear molecule?

- (A) SO_2
- (B) NO_2
- (C) CO_2
- (D) ClO_2

84. Bond order of NO is

- (A) 2.5
- (B) 3.5
- (C) 2
- (D) 3

85. Minimum energy required to remove an electron from an isolated gaseous atom is called.

- (A) Electron affinity
- (B) Ionization potential
- (C) Electro negativity
- (D) None of these
86. Alpha (α) particle is identical to
- (A) H^+
- (B) He^{2+}
- (C) e^-
- (D) none of these
87. Beta (β) particle having _____ charge.
- (A) H^+
- (B) He^{2+}
- (C) e^-
- (D) none of these
88. Velocity of alpha rays is
- (A) 1/5 of the velocity of light
- (B) 1/10 of the velocity of light
- (C) 1/15 of the velocity of light
- (D) 1/20 of the velocity of light
89. Which of the following is not an unit of radioactivity?
- (A) Curie
- (B) Rutherford
- (C) Becquerel
- (D) None of these
90. If metal 'M' forms a compound $MHCO_3$ so the metal chloride of this metal is ,

- (A) MCl_3
(B) MCl_2
(C) M_2Cl_3
(D) MCl
91. A radioactive substance have half life period of 50 years, the time of complete decay is
(A) 75
(B) 100
(C) 125
(D) Infinite
92. Amides may be converted into amines by _____ reaction.
(A) Claisen
(B) Perkin
(C) Aldol
(D) Hofmann bromamide
93. Number of pie (π) bonds in benzene.
(A) 3
(B) 4
(C) 5
(D) 6
94. Which of the following is a photochemical reaction?
(A) Photosynthesis
(B) Formation of ozone
(C) Depletion of ozone
(D) All of the above
95. Exothermic reaction in which
(A) heat is evolve
(B) heat is absorb
(C) neither heat is evolved nor absorbed
(D) none of these
96. Endothermic reaction in which heat is

- (A) evolve
(B) absorb
(C) nothing happen
(D) none of these
97. The heat of combustion is always
(A) positive
(B) negative
(C) zero
(D) none of these
98. The oxidation number of Cl is +5 in
(A) HClO
(B) HClO₂
(C) HClO₃
(D) none of these
99. Which of the following is a double salt?
(A) Tetraamine
(B) Carbontetrachloride
(C) Mohr's salt
(D) None of these
100. Which of the following molecule does not have tetrahedral shape?
(A) methane
(B) carbontetrachloride
(C) water
(D) none of these
101. Which of the following is an actinide?
(A) Cerium
(B) Samarium
(C) Thorium
(D) None of these
102. Which of the following is a lanthanide?

- (A) Americium
- (B) Fermium
- (C) Europium
- (D) None of these

103. Which of the following is an isotope of carbon?

- (A) C-12
- (B) C-13
- (C) C-14
- (D) All of the above

104. Which of the following is an emulsion?

- (A) Lemon Juice
- (B) Water
- (C) Milk
- (D) None of these

105. If 250 ml of a solution contain 5 gram of NaOH, calculate the molarity of solution

- (A) 0.2 M
- (B) 0.3 M
- (C) 0.4 M
- (D) 0.5 M

106. Sodium or potassium salts of higher fatty acid is called

- (A) Explosive
- (B) Detergent
- (C) Soap
- (D) All of the above

107. Trinitro toluene is a/an

- (A) Explosive
- (B) Detergent
- (C) Soap
- (D) All of the above
108. When a radio element emits an alpha (α) particle, its nuclear charge is reduced by
- (A) one
- (B) two
- (C) three
- (D) four
109. RDX refers to
- (A) Research and developed explosive
- (B) Research and developed soap
- (C) Research and developed detergent
- (D) All of the above
110. Atoms are Electrically
- (A) positive
- (B) negative
- (C) neutral
- (D) None of these
111. The half life period of a radioactive substance is 4 month then the time spent in decaying $3/4^{\text{th}}$ of the substance would be
- (A) 8 months
- (B) 10 months
- (C) 12 months
- (D) 14 months
112. Which of the following is not a radioactive element?

- (A) zircornium
- (B) titenium
- (C) astetin
- (D) franscium

113. The estimation of age of the earth is done by

- (A) carbon dating
- (B) uranium dating
- (C) sodium dating
- (D) none of these

114. The radioactive isotope of Hydrogen is called

- (A) protium
- (B) deutroium
- (C) tritium
- (D) none of these

115. The ISO electronic of Al^{3+} is

- (A) F^-
- (B) Cl^-
- (C) I^-
- (D) S^-

116. The rusting of iron is an example of

- (A) Oxidation
- (B) Reduction
- (C) Fermentation
- (D) Polymerization

117. Which of the following does not contain silver?

- (A) German silver
- (B) Horn silver
- (C) Ruby silver
- (D) Lunar caustic
118. Which of the following is utilised in the form of electrolyte in dry cell?
- (A) Ammonium chloride and zinc chloride
- (B) Sodium chloride and calcium chloride
- (C) Aluminium chloride and sodium chloride
- (D) None of these
119. The iron container is galvanized by
- (A) Cu
- (B) Zn
- (C) Al
- (D) None of these
120. Which of the following has maximum calorific value?
- (A) Diesel
- (B) Hydrogen gas
- (C) Charcoal
- (D) Natural gas
121. Who propounded the modern periodic law?
- (A) Rutherford
- (B) Moseley
- (C) Aufbau
- (D) Dalton
122. Quartz is composed of

- (A) CaSO_4
- (B) CuSO_4
- (C) FeSO_4
- (D) None of these

123. The inert gas found most abundantly in our atmosphere is

- (A) Ar
- (B) Ne
- (C) Kr
- (D) Xe

124. The most abundantly found organic compound in the nature is

- (A) Cellulose
- (B) Starch
- (C) Urea
- (D) Acetic acid

125. The example of fermentation is

- (A) Rusting
- (B) Curd formation
- (C) Galvanization
- (D) None of these

126. Blue vitrol is

- (A) CaSO_4
- (B) $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
- (C) FeSO_4
- (D) None of these

127. Which of the following is the property of ideal solution?

- (A) Obeys Raoult's law
- (B) Does not obey Raoult's law
- (C) Both are correct
- (D) None of these

128. Which of the following is a colligative property of solution?

- (A) Osmotic pressure
- (B) Surface tension
- (C) Half life period
- (D) None of these

129. Tyndall effects is observed in:

- (A) Colloidal solution
- (B) Alloy
- (C) Solid
- (D) None of these

130. In LPG the main component is

- (A) Ethane
- (B) Benzene
- (C) Butane
- (D) None of these

131. Which of the following is a water soluble vitamin?

- (A) Vitamin-A
- (B) Vitamin-C
- (C) Vitamin-D
- (D) None of these

132. Which of the following is not present in DNA?

- (A) Adenine
- (B) Guanine
- (C) Uracil
- (D) Thiamine

133. Ascorbic acid is

- (A) Vitamin-A
- (B) Vitamin-C
- (C) Vitamin-D
- (D) None of these

134. Deficiency of vitamin A causes

- (A) Rickets
- (B) Scurvy
- (C) Night blindness
- (D) None of these

135. What is an enzyme?

- (A) Vitamin
- (B) Protein
- (C) Lipid
- (D) Carbohydrate

136. Molar mass of benzene is

- (A) 68
- (B) 78
- (C) 88
- (D) 98

137. According to Huckel rule of aromaticity, an aromatic compound should contain _____

number of π - electrons.

- (A) $4n + 1$
- (B) $4n + 2$
- (C) $4n + 3$
- (D) $4n + 4$

138. An organic compound must contain

- (A) Hydrogen
- (B) Carbon
- (C) Nitrogen
- (D) Oxygen

139. Methane contains ————— hybridized carbon atom.

- (A) sp
- (B) sp^2
- (C) sp^3
- (D) none of these

140. Number of sigma (σ) bonds in benzene is

- (A) 6
- (B) 12
- (C) 18
- (D) None of these

141. Which of the following is an alkali metal?

- (A) Ca
- (B) Al
- (C) Na
- (D) None of these

142. Which of the following coal contain maximum % of carbon?

- (A) Anthracite
- (B) Bituminous
- (C) Lignite
- (D) None of these

143. Who was the inventor of dynamite?

- (A) Alfred Nobel
- (B) Rutherford
- (C) John Dalton
- (D) None of these

144. Which organic compound is also known as father of aromatic compounds?

- (A) Benzene
- (B) Cyclohexane
- (C) Cyclobutadiene
- (D) none of these

145. 40% aqueous solution of formaldehyde is called

- (A) Acetylene
- (B) Formalin
- (C) Gasohol
- (D) None of these

146. Rectified spirit is

- (A) 95.57% alcohol and rest water
- (B) 85% alcohol and rest water
- (C) 80% alcohol and rest water
- (D) None of these

147. Who invented the phenomenon radioactivity?

- (A) Henry Becquerel
- (B) Marie Curie
- (C) Rutherford
- (D) None of these

148. If principal quantum number is 3 then azimuthal quantum number would be

- (A) 0, 1, 2
- (B) 1, 2, 3
- (C) 2, 3, 4
- (D) None of these

149. Vinegar contains _____ acid.

- (A) Formic
- (B) Acetic
- (C) Propanoic
- (D) Butanoic

150. What is Aqua regia?

- (A) Mixture of HNO_3 and HCl
- (B) Mixture of HNO_3 and H_2SO_4
- (C) Mixture of H_2SO_4 and HCl
- (D) Mixture of HNO_3 and H_2CO_3

151. Ozone is an allotrope of

- (A) oxygen
- (B) Nitrogen
- (C) chlorine
- (D) bromine

152. Which of the following is halogen?

- (A) chlorine
- (B) bromine
- (C) Fluorine
- (D) All of the above

153. Who is the inventor of catalyst?

- (A) Curie
- (B) Rutherford
- (C) Becquerel
- (D) Berzellious

154. Which of the following is strong electrolyte:-

- (A) NH_3OH
- (B) NaCl
- (C) H_2O
- (D) None of these

155. Which of the following term does not involve in ideal gas law ?

- (A) Pressure
- (B) Volume
- (C) Temperature
- (D) Time

156. One of the followings represents the Boyle's Law, where V = volume, T = constant temperature, P = pressure and n = number of molecules.

- (A) $V \propto 1/P$
- (B) $V \propto T$
- (C) $V = n$
- (D) none of these

157. Which of the following having intra-molecular hydrogen bond ?

- (A) HF
- (B) H_2O
- (C) NH_3
- (D) O-nitrophenol

158. Which of the following is a strongest bond?

- (A) ionic bond
- (B) covalent bond
- (C) hydrogen bond
- (D) dipole-dipole interaction

159. Which spectroscopy confirms the presence of conjugated system ?

- (A) UV-spectroscopy
- (B) IR-spectroscopy
- (C) NMR-spectroscopy
- (D) None of these

160. Which spectroscopy having fingerprint technique?

-
- (A) UV-spectroscopy
(B) IR-spectroscopy
(C) NMR-spectroscopy
(D) None of these
161. Which of the following is use as internal standard (reference) in NMR spectroscopy?
(A) cyclohexane
(B) Tetra-methyl silane
(C) butadiene
(D) isoprene
162. Which spectroscopy can detect inter- and intra molecular hydrogen bonding?
(A) UV-spectroscopy
(B) IR-spectroscopy
(C) NMR-spectroscopy
(D) both (B) and (C)
163. Which spectroscopy does not causes bending and stretching vibrations in organic compounds?
(A) UV-spectroscopy
(B) Mass -spectroscopy
(C) NMR-spectroscopy
(D) All of the above
164. In which spectrometer, a strong electromagnet is used?
(A) UV-spectroscopy
(B) IR-spectroscopy
(C) NMR-spectroscopy
(D) none of these
165. The intermixing of different orbitals is called
(A) valence bond
(B) metallic bond
(C) hybridization
(D) none of these
166. The colour of transition metal ions does not arises due to

- (A) p-p transition
- (B) s-s transition
- (C) s-p transition
- (D) All of the above

167. De-Broglie equation is

- (A) $\lambda = mv$
- (B) $\lambda = h/c$
- (C) $\lambda = h/mv$
- (D) none of these

168. The preparation of ethyl acetoacetate involves,

- (A) Wittig reaction
- (B) Cannizaro's reaction
- (C) Reformatsky reaction
- (D) Claisen condensation

169. Among the following, weakest base is:

- (A) H^-
- (B) CH_3
- (C) CH_3O^-
- (D) Cl^-

170. Isomers of propanoic acid are:

- (A) HCOOC_2H_5 and $\text{CH}_3\text{COOCH}_3$
- (B) HCOOC_2H_5 and $\text{C}_3\text{H}_7\text{COOH}$
- (C) $\text{CH}_3\text{COOCH}_3$ and $\text{C}_3\text{H}_7\text{OH}$
- (D) $\text{C}_3\text{H}_7\text{OH}$ and CH_3COCH_3

171. Optical isomerism is shown by

- (A) oxalic acid
- (B) benzoic acid
- (C) acetic acid
- (D) lactic acid

172. Outermost configuration of most electronegative element of periodic table is,

- (A) $3s^2 3p^6$
- (B) $2s^2 2p^5$
- (C) $4s^2 4p^6$
- (D) $2s^2 2p^4$

173. Strongest nucleophile is

- (A) RNH_2
- (B) ROH
- (C) $\text{C}_6\text{H}_5\text{O}^-$
- (D) CH_3O^-

174. Maximum number of isomers that an alkene can have with the molecular formula C_4H_8 is,

- (A) 5
- (B) 4
- (C) 3
- (D) 2

175. Brass gets discoloured in air due to constant exposure in presence of :

- (A) Aluminium phosphide
- (B) Hydrogen sulphide
- (C) Hydrogenated wafers
- (D) Aluminium sulphide

176. The optical inactivity due to internal compensation can exhibited by :-

- (A) d-tartaric acid
- (B) l-tartaric acid
- (C) racemic- tartaric acid
- (D) meso-tartaric acid

177. The change in optical rotation of freshly prepared solution of sugar is known as :

- (A) inversion
- (B) optical rotation
- (C) specific rotation
- (D) muta-rotation

178. Which one of the following has a square planar geometry?

- (A) $[\text{CoCl}_4]^{2-}$
- (B) $[\text{FeCl}_4]^{2-}$
- (C) $[\text{NiCl}_4]^{2-}$
- (D) $[\text{PtCl}_4]^{2-}$

179. Ammonium ion is a

- (A) conjugate acid
- (B) conjugate base
- (C) neither (A) nor (B)
- (D) both (A) and (B)

180. BF_3 is acid, according to

- (A) Lewis
- (B) Arrhenius
- (C) Bronsted and Lowry
- (D) none of these

181. Which of the following statements is incorrect about Stainless Steel?

- (A) It is also known as inox steel
- (B) It is an alloy of Iron, cobalt and nickel
- (C) It is corrosion resistant
- (D) Molybdenum is added to increase corrosion resistance in reducing acids

182. NMR spectrum of methyl t-butyl ether shows :-

- (A) one singlet
- (B) two singlet
- (C) one singlet one triplet
- (D) one singlet and one quartet

183. Mg^+ , Na^+ , F^- and O^{2-} have the same number of

- (A) Protons
- (B) electrons
- (C) neutrons
- (D) none of these

184. Which of the following pairs can be regarded as soft acids?

- (A) BF_3 and Sn^{4+}
- (B) Cu^+ and Cd^{2+}
- (C) SCN^- and H^-
- (D) Na^+ and NH_3

185. In metal carbonyls the bonding of 'CO' to metal via C-end or O-end can be confirmed by :-

- (A) NMR spectroscopy
- (B) IR spectroscopy
- (C) Electronic spectroscopy
- (D) None of these

186. Which of the following does not conduct electricity ?

- (A) fused NaCl
- (B) solid NaCl
- (C) brine solution
- (D) copper

187. Which of the following does not affected by acid rain?

- (A) Metal
- (B) Building
- (C) Water bodies
- (D) None of these

188. Photochemical smog does not possess

- (A) Ozone
- (B) CO_2
- (C) NO_2
- (D) PAN

189. Which of the following is not Photochemical Oxidants?

- (A) Ozone
- (B) PAN
- (C) Aldehyde
- (D) None of these

190. Acid rain reacts with CaCO_3 of buildings and form

- (A) CaSO_4
- (B) CaC_2
- (C) Ca(OH)_2
- (D) None of these

191. Which gas reacts with water and form carbonic acid?

- (A) CO
- (B) CO_2
- (C) NO_2
- (D) SO_2

192. Ozone day is observed on:

- (A) 30 January
- (B) 22 June
- (C) 14 May
- (D) 16 September

193. Fossil fuel are

- (A) Renewable resources
- (B) Inexhaustible resources
- (C) Non Renewable resources
- (D) None of these

194. Which of the following is an abiotic component?

- (A) Plant
- (B) Animal
- (C) Bacteria
- (D) Soil

195. Which of the following is a metalloid?

- (A) Germanium
- (B) Mercury
- (C) Cobalt
- (D) Zinc

196. _____ is an alkali earth metal.

- (A) Ca
- (B) Mg
- (C) Sr
- (D) All of the above

197. Which of the following is an aromatic compound?

- (A) Pyrrole
- (B) Furan
- (C) Thiophene
- (D) All of the above

198. If benzene reacts with methyl chloride in presence of AlCl_3 and heat, then _____ and HCl is obtained.

- (A) Toluene
- (B) Phenol
- (C) Aniline
- (D) None of these

199. Which of the following does not undergoes Friedel Craft reaction?

- (A) Nitrobenzene
- (B) Phenol
- (C) Aniline
- (D) All of the above

200. Zero entropy is associated with _____ law of thermodynamics.

- (A) Zero
- (B) First
- (C) Second
- (D) Third

