

# OBJECTIVE PART

- The basis of modern periodic table is:
  - Electron affinity
  - Atomic mass
  - Ionization potential
  - Atomic number
- Elements of Group II are called?
  - Alkali metals
  - Alkaline earth metals
  - Coinage metals
  - Halogens
- Which is the longest period of periodic table:
  - 4
  - 5
  - 6
  - 7
- Non-metals are present in which block of periodic table?
  - s-block
  - p-block
  - d-block
  - f-block
- Which of the following statement is correct?
  - Na atom is smaller than  $\text{Na}^+$
  - Na atom is larger than K atom
  - F atom is smaller than F
  - F atom is larger than F
- Which order is correct one of the size of atoms?
  - $\text{Mg} > \text{Sr}$
  - $\text{Ba} > \text{Mg}$
  - $\text{Lu} > \text{Cu}$
  - $\text{Cl} > \text{I}$
- Which is the correct statement?
  - $\text{Cl}^-$  is smaller than Cl atom
  - $\text{Cl}^-$  (ion) and Cl (atom) are equal in size.
  - $\text{Na}^+$  is smaller than Na atom
  - $\text{Na}^+$  is larger than Na atom
- Which ion will have maximum heat of hydration?
  - $\text{Li}^+$
  - $\text{Na}^+$
  - $\text{K}^+$
  - $\text{Mg}^{++}$
- Mark the correct statement.
  - All lanthanides are present in the same group.
  - All halogens are present in the same period.
  - All the alkali metals are present in the same group.
  - All the noble gases are present in the same period.
- Which statement is incorrect?
  - All the metals are good conductors of electricity.
  - All the metals are good conductors of heat.
  - All the metals form acidic oxides.
  - All the metals form positive ions
- Amphoteric oxide is formed by:
  - Ca
  - Fe
  - Zn
  - Cu
- Oxides of Be are?
  - Acidic
  - Basic
  - Amphoteric
  - Neutral
- Hydrogen resembles in properties with groups:
  - I-A, V-A, VII-A elements
  - I-A, IV-A, VII-A elements
  - II-A, III-A, V-A elements
  - I-A, II-A, elements
- The word alkali is derived from which language?
  - Arabic
  - Greek
  - French
  - German
- Formula of Epsom salt is:
  - $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$
  - $\text{MgSO}_4$
  - $\text{MgCO}_3$
  - $\text{CaMg}_3(\text{SiO}_3)_4$
- Which one does not belong to the alkaline earth metals?
  - Be
  - Ba
  - Ra
  - Rn
- Which one of the following is not an alkali metal?
  - Francium
  - Caesium
  - Rubidium
  - Radium

19. Chile saltpeter has the chemical formula? (19 Time)  
 (a)  $NaNO_3$     (b)  $KNO_2$     (c)  $Na_2B_4O_7$     (d)  $Na_2CO_3 \cdot H_2O$
20. The minerals  $CaSO_4 \cdot 2H_2O$  has the general name.  
 (a) Gypsum    (b) Dolomite    (c) Calcite    (d) Epsom salt
21. The chemical formula of Fluorspar is:  
 (a)  $Ca_5(PO_4)_3F$      (b)  $CaF_2$     (c)  $Na_3AlF_6$     (d)  $KCl \cdot MgCl_2 \cdot 6H_2O$
22. General name of mineral  $MgSO_4 \cdot 7H_2O$  is:  
 (a) Gypsum    (b) Dolomite    (c) Calcite     (d) Epsom Salt
23. Which one of the following oxides is more basic?  
 (a) BeO     (b) SrO    (c) CaO    (d) MgO
24. Point out the element which forms super oxide:  
 (a) Li    (b) Na     (c) K    (d) C
25. Compound obtained when Na burns in excess of air:  
 (a)  $NaO_2$      (b)  $Na_2O_2$     (c)  $Na_2O$     (d)  $Na_2O_3$
26. The oxides of beryllium are:  
 (a) Acidic    (b) Basic     (c) Amphoteric    (d) None of these
27. Which ion will have the maximum value of heat of hydration?  
 (a)  $Na^+$     (b)  $Cs^+$     (c)  $Ba^{+2}$      (d)  $Mg^{+2}$
28. Which of the following sulphates is not soluble in water?  
 (a) Sodium Sulphate    (b) Potassium Sulphate  
 (c) Zinc Sulphate     (d) Barium Sulphate
29. In Down's cell  $CaCl_2$  is added to NaCl to:  
 (a) Increase solubility    (b) Increase the dissociation  
 (c) Increase conductivity     (d) Lower its melting point
30. Down's cell is used to prepare:  
 (a) Sodium Carbonate     (b) Sodium Metal  
 (c) Sodium Bicarbonate    (d) Sodium Hydroxide
31. Which elements deposited at the cathode during the electrolysis of brine in diaphragm cell?  
 (a)  $H_2$     (b) Ba    (c) Ra    (d) Rn
32. The chief ore of aluminum is: (14 Time)  
 (a)  $Na_3AlF_6$      (b)  $Al_2O_3 \cdot 2H_2O$     (c)  $Al_2O_3$     (d)  $Al_2O_3 \cdot H_2O$
33. Tincal is a mineral of:  
 (a) Al    (b) C    (c) Si     (d) B
34. Chemical composition of colemanite is:  
 (a)  $Ca_2B_6O_{11} \cdot 5H_2O$     (b)  $CaB_4O_7 \cdot 4H_2O$   
 (c)  $Na_2B_4O_7 \cdot 4H_2O$     (d)  $CaNaB_5O_9 \cdot 8H_2O$
35. Which of the following elements is not present abundantly in earth's crust?  
 (a) Silicon    (b) Aluminum     (c) Sodium    (d) Oxygen
36. The aqueous solution of Borax:  
 (a) Acidic     (b) Alkaline    (c) Amphoteric    (d) Neutral
37. Which is used in the leather industry?  
 (a) Borax    (b) Folic Acid    (c) Boric oxide    (d) Tetra Boric Acid
38. Boric acid cannot be used:  
 (a) As antiseptic in medicine    (b) For washing eyes  
 (c) In soda bottles    (d) For Enamels and Glazes
39. Aluminum oxide is:  
 (a) Acidic Oxide    (b) Basic Oxide  
 (c) Amphoteric oxide    (d) None of these
40. Which element forms an ion with charge 3+?  
 (a) Beryllium     (b) Aluminum    (c) Carbon    (d) Silicon
41. Which metal is used in the Thermite process because of its reactivity:  
 (a) Iron    (b) Copper     (c) Aluminum    (d) Zinc
42. Which element among the following belongs to group IV-A of the periodic table?  
 (a) Barium    (b) Iodine     (c) Lead    (d) Oxygen

43. Which one of the following is used in cosmetics?  
(a) Talc (b) Asbestos  
(c) Sodium sulphate (d) Aluminum Sulphate
44. Chemical formula of litharge is:  
(a)  $Pb_2O$  (b)  $SiO_3$  (c)  $PbO$  (d)  $Pb_3O_4$
45. Out of all the elements of group VA, the highest ionization energy is possessed by:  
(a) N (b) P (c) Sb (d) As
46. In group V-A elements the most electronegative element is:  
(a) N (b) P (c) Sb (d) Bi
47. Laughing gas is chemically?  
(a) NO (b)  $NO_2$  (c)  $N_2O$  (d)  $N_4O_4$
48. Which of the following is a reddish brown gas?  
(a)  $N_2O_3$  (b)  $NO_2$  (c)  $N_2O_3$  (d)  $N_2O_5$
49. The oxidation of NO in air produces:  
(a)  $N_2O_3$  (b)  $NO_2$  (c)  $N_2O_3$  (d)  $N_2O_4$
50. Out of all the elements of group VI-A the highest melting and boiling points is shown by the element:  
(a) Te (b) Se (c) S (d) Po
51. What is %age of calcium phosphate in bone ash?  
(a) 20 (b) 40 (c) 80 (d) 60
52. Carboxylic acids on reduction with HI and red phosphorous gives:  
(a) Alkanes (b) Alcohols (c) Aldehydes (d) Ketones
53. Maximum number of unpaired electrons is in:  
(a)  $O_2$  (b)  $O_2^+$  (c)  $O_2^-$  (d)  $O_2^{2-}$
54. Which catalyst is used in contact process?  
(a)  $Fe_2O_3$  (b)  $V_2O_5$  (c)  $SO_3$  (d)  $Ag_2O$
55. Which one of halogens is a liquid?  
(a)  $F_2$  (b)  $Cl_2$  (c)  $Br_2$  (d)  $I_2$
56. Which halogen is a solid at room temperature and pressure?  
(a)  $F_2$  (b)  $Cl_2$  (c)  $Br_2$  (d)  $I_2$
57. Which one is per chloric acid?  
(a) HClO (b)  $HClO_3$  (c)  $HClO_2$  (d)  $HClO_4$
58. Which halogen occurs naturally in a positive oxidation state?  
(a) Fluorine (b) Chlorine (c) Iodine (d) Bromine
59. Which of the following hydrogen halide is the weakest acid in solution?  
(a) HF (b) HBr (c) HI (d) HCl
60. Which halogen will react spontaneously with Au (s) to produce  $Au+3$ ?  
(a)  $Br_2$  (b)  $F_2$  (c)  $I_2$  (d)  $Cl_2$
61. The anhydride of  $HClO_4$  is:  
(a)  $ClO_3$  (b)  $F_2$  (c)  $I_2$  (d)  $Cl_2$
62. Chlorine heptoxide ( $Cl_2O_7$ ) reacts with water to form:  
(a) Hypochlorous acid (b) Chloric acid  
(c) Perchloric acid (d) Chlorine and oxygen
63. Which is the strongest acid?  
(a) HClO (b)  $HClO_2$  (c)  $HClO_3$  (d)  $HClO_4$
64. Which one is chlorous acid?  
(a) HClO (b)  $HClO_2$  (c)  $HClO_3$  (d)  $HClO_4$
65. Bleaching powder may be produced by passing chloring over:  
(a) Calcium Carbonate (b) Hydrated Calcium Sulphate  
(c) Anhydrous Calcium Sulphate (d) Calcium Hydroxide
66. An element that has high ionization energy and ten do to be chemically inactive, would most likely to be:  
(a) An alkali metal (b) A transition element  
(c) A noble gas (d) A halogen

67. \_\_\_\_\_ is used as a cooling medium for nuclear reactors.  
 (a) Ne (b) He (c) Ar (d) Kr
68. Which of the following noble gas is used for arc welding and cutting?  
 (a) Ar (b) He (c) Ra (d) Xe
69. The total number of transition element is:  
 (a) 10 (b) 14 (c) 40 (d) 58
70. Total number of d-block elements are:  
 (a) 10 (b) 20 (c) 30 (d) 40
71. Which of the following is non-typical transition metal?  
 (a) Fe (b) Mn (c) Zn (d) Ni
72. Which of the following is typical transition element?  
 (a) Sc (b) Co (c) Ra (d) Y
73. Which of the following is a typical transition metal?  
 (a) Sc (b) Y (c) Fe (d) Ra
74. Group IV B of transition elements contains:  
 (a) Zn, Cd, Hg (b) Fe, Ru, Os (c) Cr, Mo, W (d) Mn, Te, Re
75. Oxidation state of CU in  $K_2[Cu(CN)_4]$  is:  
 (a) +4 (b) +3 (c) +2 (d) +6
76. The colour of  $[Ti(H_2O)_6]^{+3}$  ion is:  
 (a) Red (b) Yellow (c) Violet (d) Green
77. The colour of transition metal complexes is due to:  
 (a) d-d transitions of electrons  
 (b) paramagnetic nature of transition elements  
 (c) ionization (d) loss of s-electrons
78. The strength of binding energy of transition elements depends upon:  
 (a) number of electrons pairs (b) number of unpaired electron  
 (c) number of neutrons (d) number of protons
79. Co-ordination number of Pt in  $[PtCl(NO_2)(NH_3)_4]$   
 (a) 2- (b) 4 (c) 1 (d) 6
80. What is coordination number of "Fe" in  $K_4[Fe(CN)_6]$ ?  
 (a) 4 (b) 6 (c) 2 (d) 3
81. Which is not an ore of iron?  
 (a) Haematite (b) Magnetite (c) Limonite (d) Cassiterite
82. 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
83. Formula of Haematite is:  
 (a)  $FeS_2$  (b)  $Fe_2O_3$  (c)  $FeCO_3$  (d)  $Fe_3O_4$
84. Mild steel contains carbon percentage:  
 (a) 0.1-0.2% (b) 0.3-0.7% (c) 0.7-1.5% (d) 1.6-2.0%
85. The chemist who synthesized urea from ammonium cyanate was:  
 (a) Berzelius (b) Kolbe (c) Wohler (d) Lavoisier
86. Formula of marsh gas is:  
 (a)  $CH_4$  (b)  $C_2H_6$  (c)  $C_3H_6$  (d)  $C_4H_{10}$
87. Tetra Ethyl lead (T.E.L) is used as:  
 (a) Pain Killer (b) Petroleum Additive  
 (c) Fire Extinguisher (d) Moth Repellent
88. Which one is the heterocyclic compound of oxygen?  
 (a) Pyridine (b) Parrole (c) Furan (d) Thiophene
89. Select from the following the one which is alcohol.  
 (a)  $CH_3CH_2OH$  (b)  $CH_3OCH_3$  (c)  $CH_3COOH$  (d)  $CH_3.CH_2.Br$
90. In t-butyl alcohol, the tertiary carbon is bonded to:  
 (a) two hydrogen atoms (b) three hydrogen atom  
 (c) one hydrogen atom (d) no hydrogen atom

91. Linear shape is associated with set of hybrid orbitals?  
 (a) sp      (b)  $sp^2$       (c)  $dsp^2$       (d)  $sp^3$
92. The state of hybridization of carbon "C" atom in methane.  
 (a) sp      (b)  $sp^2$       (c)  $dsp^2$        (d)  $sp^3$
93. Which set of Hybrid Orbital planner triangular shape? (10 Time)  
 (a) sp       (b)  $sp^2$       (c)  $dsp^2$       (d)  $sp^3$
94. The state of hybridization in ethene molecule is: (1 Time)  
 (a) sp       (b)  $sp^2$       (c)  $dsp^2$       (d)  $sp^3$
95. Ethers show the phenomenon of:  
 (a) Position Isomerism      (b) Functional group isomerism  
 (c) Methamerism      (d) Chain Isomerism
96. The presence of a double bond in a compound is the sign of:  
 (a) Saturation       (b) Un-saturation  
 (c) Substitution      (d) None of these
97. Formula of chloroform is:  
 (a)  $CH_3Cl$       (b)  $CCl_4$       (c)  $CH_2Cl_2$        (d)  $CHCl_3$
98. Preparation of vegetable ghee involves:  
 (a) Halogenation       (b) Hydrogenation  
 (c) Hydroxylation      (d) Dehydrogenation
99. When methane reacts with  $Cl_2$  in the presence of diffused light the products obtained are:  
 (a) Chloroform only      (b) Carbon tetrachloride only  
 (c) Chloromethane and dichloromethane  
 (d) Mixture of a, b, c
100. Conversion of unsaturated hydro carbons saturated hydrocarbons in the presence of catalyst is called as:  
 (a) Halogenation       (b) Hydrogenation  
 (c) Hydroxylation      (d) Dehydrogenation
101.  $\beta - \beta'$ -dichloroethyle sulphide is commonly known as:  
 (a) Used in 1<sup>st</sup> world war      (b) Powerful vesicant  
 (c) High boiling liquid       (d) High boiling gas
102. The addition of unsymmetrical reagent to an unsymmetrical alkene is in accordance with the rule:  
 (a) Hund's rule      (b) Markownikov's rule  
 (c) Pauli's Exclusionj Principle      (d) High boiling gas
103. Which acetylene reach with HCl to form:  
 (a) Polyacetylene      (b) Benzene  
 (c) Chloroprene      (d) Divinylacetylene
104. Which compound is the most reactive?  
 (a) Benzene       (b) Ether      (c) Ethane      (d) Ethyne
105. Synthetic rubber is made by polymerization of:  
 (a) Vinylacetate      (b) Acetylene  
 (c) Divinylacetylene       (d) Chloroprene
106. Which gas is used for artificial ripening of fruits?  
 (a) Ether      (b) Methane      (c) Propane      (d) Ethyne
107. Aromatic hydrocarbons are the derivatives of:  
 (a) Normal series of paraffins      (b) Alkene  
 (c) Benzene      (d) Cyclohexane
108. Aromatic compounds burn with sooty flame because:  
 (a) They have high percentage of hydrogen  
 (b) They have a ring structure  
 (c) They have high percentage of carbon  
 (d) They resist reaction with air
109. The benzene molecule contains:  
 (a) three double bonds      (b) two double bonds

- (c) one double bond (d) delocalized  $\pi$  – electron cloud
110. The carbon-carbon (C-C) bond length in benzene is:  
 (a)  $1.34 \text{ \AA}$  (b)  $1.20 \text{ \AA}$  (c)  $1.39 \text{ \AA}$  (d)  $1.54 \text{ \AA}$
111. The conversion of n-hexane into benzene by heating in the presence of Pt is called:  
 (a) Isomerization (b) Aromatization  
 (c) Dealkylation (d) Rearrangement
112. During Nitration of Benzene, the active nitrating agent is:  
 (a)  $\text{NO}_3$  (b)  $\text{NO}_2^+$  (c)  $\text{NO}_2$  (d)  $\text{HNO}_3$
113. Benzene cannot undergo:  
 (a)  $\text{AlCl}_3$  (b)  $\text{BeCl}_2$  (c)  $\text{NaCl}$  (d)  $\text{HNO}_3$
114. The electrophile in Aromatic sulphonation is:  
 (a)  $\text{H}_2\text{SO}_4$  (b)  $\text{HSO}_4^-$  (c)  $\text{SO}_3$  (d)  $\text{SO}_3^+$
115. Amongst the following, the compound that can be most readily sulphonated is:  
 (a) Toluene (b) Benzene (c) Nitro-Benzene (d) Chloro-Benzene
116. Which of the following acid can be used as a catalyst in Friedel Craft's reactions?  
 (a)  $\text{AlCl}_3$  (b)  $\text{HNO}_3$  (c)  $\text{BeCl}_2$  (d)  $\text{NaCl}$
117. Which one of the following species is an electron?  
 (a)  $-\text{CH}_3$  (b)  $-\text{CHO}$  (c)  $-\text{OH}$  (d)  $-\text{NH}_2$
118. Which compound is the most reactive?  
 (a) Benzene (b) Ethene (c) Ethane (d) Ethyne
119. In primary alkyl halides, the halogen atom is attached to a carbon which is further attached to how many carbon atoms?  
 (a) 2 (b) 3 (c) 1 (d) 4
120. The reactivity order of alkyl halides for a particular group is:  
 (a) Fluoride > Chloride > Bromide > Iodide  
 (b) Chloride > Bromide > Fluoride > Iodide  
 (c) Iodide > Bromide > Chloride > Fluoride  
 (d) Bromide > Iodide > Chloride > Fluoride
121.  $\text{SN}_2$  reactions can be carried out with:  
 (a) Primary Reactions alkylhalide  
 (b) Secondary alkylhalide  
 (c) Tertiary alkylhalide  
 (d) All of these
122. Which one of the following is not a nucleophile?  
 (a)  $\text{H}_2\text{O}$  (b)  $\text{CH}_3$  (c)  $\text{BF}_3$  (d)  $\text{NH}_3$
123. Which one of the following is best nucleophile?  
 (a)  $\text{H}_2\text{O}$  (b)  $\text{NH}_3$  (c)  $\text{C}_2\text{H}_5\text{O}^-$  (d)  $\text{NO}^-$
124. Elimination Bimolecular reactions involve:  
 (a) Second Order Kinetics (b) First order Kinetics  
 (c) Third Order Kinetics (d) Zero-order-Kinetics
125. For which mechanisms, the first step involved is the same:  
 (a)  $\text{E}_1$  and  $\text{E}_2$  (b)  $\text{E}_2$  and  $\text{S}_{\text{N}}2$  (c)  $\text{E}_2$  and  $\text{S}_{\text{N}}2$  (d)  $\text{E}_1$  and  $\text{S}_{\text{N}}2$
126. When  $\text{CCl}_2$  is made to react with ethyl magnesium iodide, followed by acid hydrolysis, the product formed is:  
 (a) Propane (b) Propanoic acid  
 (c) Propanal (d) Propanol
127. The reactivity of Grignard's reagent is due to:  
 (a) Polarity of Mg-x bond (b) Polarity of C-Mg bond  
 (c) Electro negativity of halogen atom  
 (d) Presence of Mg-atom
128. Grignard's reagent is reactive due to:  
 (a) The presence of Halogen atom  
 (b) The presence of Mg atom

- (c) The polarity of C-Mg bond  
(d) None of the above
129. When ethyl magnesium bromide is reacted with HCHO, followed by acid hydrolysis, the product formed is:  
(a) Ethanol (b) I-Propanol (c) 2-Propanol (d) Ethanoic acid
130. Which compound is called universal solvent?  
(a) CH<sub>3</sub>OH (b) C<sub>2</sub>H<sub>5</sub>OH (c) CH<sub>3</sub>OCH<sub>3</sub> (d) H<sub>2</sub>O
131. In t-butyl alcohol, the tertiary carbon is bonded to:  
(a) Three hydrogen atoms (b) Two hydrogen atoms  
(c) One hydrogen atom (d) No hydrogen atom
132. Which compound shows maximum hydrogen bonding with water?  
(a) CH<sub>3</sub>OH (b) C<sub>2</sub>H<sub>5</sub>OH (c) CH<sub>3</sub>-O-CH<sub>3</sub> (d) C<sub>6</sub>H<sub>5</sub>OH
133. Methyl alcohol is not used as:  
(a) As a solvent (b) As an anti freezing agent  
(c) As a substitute for petrol (d) For denaturing of ethyl alcohol
134. Rectified spirit contains alcohol about:  
(a) 80% (b) 85% (c) 90% (d) 95%
135. compound shows extensive hydrogen bonding with water: (3 Time)  
(a) C<sub>2</sub>H<sub>6</sub> (b) H<sub>2</sub>S (c) C<sub>2</sub>H<sub>5</sub>OH (d) CH<sub>3</sub>Cl
136. Which enzyme is not involved in fermentation of starch?  
(a) Zymase (b) Urease (c) Invertase (d) Diastase
137. Which compound shows hydrogen bonding?  
(a) C<sub>2</sub>H<sub>6</sub> (b) C<sub>2</sub>H<sub>5</sub>Cl (c) CH<sub>3</sub>OCH (d) C<sub>2</sub>H<sub>5</sub>OH
138. Ethanol can be converted into ethanoic acid by:  
(a) Hydrogenation (b) Hydration  
(c) Oxidation (d) Fermentation
139. Which compound is more soluble in water?  
(a) C<sub>2</sub>H<sub>5</sub>OH (b) C<sub>6</sub>H<sub>5</sub>OH (c) CH<sub>3</sub>COCH<sub>3</sub> (d) n-hexanol
140. The most reactive alcohol when O-H bond breaks is:  
(a) Tertiary alcohol (b) Secondary alcohol  
(c) Primary alcohol (d) Methyl alcohol
141. Which is more soluble compound in H<sub>2</sub>O?  
(a) I Propanol (b) Methanol (c) Phenol (d) n-Hexanol
142. Bakelite is obtained from phenol by reacting with:  
(a) Acetal (b) Ethanal (c) Formaldehyde (d) Methano.
143. According to Lewis concept, ethers behave as:  
(a) Acid (b) Base (c) Nucleophile (d) Solvent
144. The carbon atom of carbonyl group is hybridized.  
(a) sp (b) sp<sup>2</sup> (c) sp<sup>3</sup> (d) dsp
145. Ketones are prepared by the oxidation of:  
(a) Primary alcohol (b) Secondary alcohol  
(c) Tertiary alcohol (d) None of these
146. Formalin is:  
(a) 10% solution of formaldehyde in water  
(b) 20% solution of formaldehyde in water  
(c) 40% solution of formaldehyde in water  
(d) 60% solution of formaldehyde in water
147. Which of the following compound will not give iodoform test on treatment with I<sub>2</sub>/NaOH?  
(a) Acetaldehyde (b) Acetone  
(c) Butanone (d) 3-Pentanone
148. Cannizzaro's reaction is not given by:  
(a) Formaldehyde (b) Acetaldehyde  
(c) Benzaldehyde (d) Triethylacetaldehyde

149. Which reagent will react with both aldehyde and ketones?  
(a) Grignard reagent (b) Tollen's reagent  
(c) Fehling's reagent (d) Benedict's reagent
150. Acetone reacts with HCN to form cyanohydrins it is an example of:  
(a) Electrophilic addition (b) Electrophilic substitution  
(c) Nucleophilic addition (d) Nucleophilic substitution
151. Aldol condensation is given:  
(a) Acetaldehyde (b) Formaldehyde  
(c) Benzaldehyde (d) Trimethylacetal
152. Which one of the following compounds will react with Fehling's solution?  
(a) HCOOH (b) H<sub>3</sub>C-CHO  
(c) H<sub>2</sub>N-CH<sub>2</sub>-COOH (d) H<sub>3</sub>C-CO-CH<sub>3</sub>
153. The compound used in the processing of anti-polio vaccine is:  
(a) Acetaldehyde (b) Formaldehyde  
(c) Acetone (d) Ethylbromide
154. A carboxylic acid contains:  
(a) A hydroxyl group (b) A carboxyl group  
(c) A hydroxyl and carboxyl group (d) A carboxyl and an aldehyde group
155. Which of the following is not a fatty acid?  
(a) Propanic acid (b) Acetic acid  
(c) Phthalic acid (d) Butanoic acid
156. Which reagent is used to reduce a carboxylic group to an alcohol?  
(a) H<sub>2</sub>/Ni (b) H<sub>2</sub>/Pt (c) NaBH<sub>4</sub> (d) LiAlH<sub>4</sub>
157. Which of the following derivative is not directly prepared from acetic acid CH<sub>3</sub>COOH?  
(a) Ethyl acetate (b) Acetyl chloride  
(c) Acetic anhydride (d) Acetamide
158. Acetamide is prepared by:  
(a) Heating ammonium acetate (b) Heating methyl cyanide  
(c) Heating ethyl acetate (d) The hydrolysis of methyl cyanide
159. The flavor of octylacetate is:  
(a) Orange (b) Apricot (c) Banana (d) Jasmine
160. Which of the following ester gives apricot flavor?  
(a) Amyl acetate (b) Benzyl acetate  
(c) Amyl butyrate (d) Otyl acetate
161. Acetic acid is manufactured by:  
(a) Distillation (b) Fermentation  
(c) Ozonolysis (d) Esterification
162. Which of the following derivatives cannot be prepared directly from acetic acid?  
(a) Acetamine (b) Acetyl chloride  
(c) Acetic anhydride (d) Ethyl acetate
163. Which acid is used in the manufacture of synthetic fiber?  
(a) Formic Acid (b) Oxalic Acid  
(c) Carbonic Acid (d) Acetic Acid
164. The solution of which acid is used for seasoning of food?  
(a) Formic acid (b) Acetic acid  
(c) Butanoic acid (d) Benzoic acid
165. Which one is neutral amino acid?  
(a) Lysine (b) Histidine (c) Glumatic acid (d) Valine
166. Which of the following is a neutral amino acid?  
(a) Glycine (b) Lysine (c) Histidine (d) Glutamic acid
167. Polypeptide has molecular mass upto:  
(a) 10,000 (b) 20,000 (c) 1000 (d) 10
168. A polymer is a large molecule built up by the repetition of small and simple chemical units.  
(a) Monomers (b) Dimers (c) Tetramers (d) Trimers

169. The polymer which can be softened and hardened by heating and cooling is called:  
 (a) Thermoplastic                      (b) Thermosetting  
(c) Proteins                                      (d) Fats
170. Which of these polymers is a synthetic polymer?  
(a) Animal fat    (b) Starch    (c) Cellulose     (d) Polyester
171. A polymeric substance that is formed in the liquid state and then hardened to a rigid solid is called:  
(a) Fiber                       (b) Plastic    (c) Varnish                      (d) Polyamide resin
172. Which of the following is an addition polymer?  
(a) Polyester                       (b) Polystyrene    (c) Nylon 6, 6                      (d) Terylene
173. The fiber which is made from acrylonitrile as monomer?  
(a) PVC                                      (b) Polyester fiber  
(c) Rayon Fiber                       (d) Acrylic fiber
174. Which one of the following is mono-saccharide.  
 (a) Fructose    (b) Sucrose    (c) Starch    (d) Cellulose
175. Which of the following element is not present in all proteins?  
(a) Carbon    (b) Hydrogen    (c) Nitrogen     (d) Sulphur
176. Which of the following element is present in all proteins?  
(a) Cl                      (b) Cu                       (c) N                      (d) Al
177. Vegetable oils are:  
(a) Polyesters                       (b) Glycerides of unsaturated fatty acids  
(c) Essential oils                      (d) Fatty acids
178. The reaction between fat and NaOH is:  
(a) Esterification                      (b) Hydrogenolysis  
(c) Fermentation                       (d) Saponification
179. Which one of the following is a water soluble vitamin?  
(a) Niacin    (b) Riboflavin    (c) Trypsin                       (d) Ascorbic Acid
180. Which of the following nitrogenous base is not present in RNA?  
(a) Cytosine    (b) Adenine                       (c) Thymine                      (d) Uracil
181. Micro-nutrient is required in quantity for plant growth ranging from:  
(a) 4-40gm                       (b) 6-200gm                      (c) 6-200kg                      (d) 4-40kg
182. Which three elements are needed for healthy growth for plants?  
(a) N, S, P    (b) N, Ca, P                       (c) N, P, K                      (d) N, K, C
183. Ammonium Nitrate fertilizer is not useful for which crop:  
(a) Wheat    (b) Cotton    (c) Sugar Cane                       (d) Paddyrice
184. The nitrogen present in some fertilizers helps plants?  
(a) To fight against diseases                      (b) To produce fat  
(c) To undergo photosynthesis                       (d) To produce protein
185. Phosphorus helps the growth of:  
(a) Root                      (b) Leaf                      (c) Steam                       (d) Seed
186. Which is not a calcareous material?  
 (a) Clay                      (b) Limestone                      (c) Marble    (d) Chalk
187. How many zones through which the charge passes in a rotary kiln?  
 (a) 4                      (b) 3                      (c) 2                      (d) 5
188. The wood paper is derived from the name of which reedy plant:  
(a) Rose                      (b) Sun Flower                       (c) Papyrus                      (d) Water
189. Woody raw material for paper pulp is obtained from:  
(a) Cotton                      (b) Biogases                       (c) Poplar                      (d) Rice Straw
190. Ecosystem is smaller unit of:  
(a) Lithosphere    (b) Hydrosphere    (c) Atmosphere                       (d) Biosphere
191. Which of following element is not abundantly present in earth's crust?  
(a) Siloam                      (b) Aluminum                       (c) Sodium                      (d) Oxygen
192. A single chloride free radical can destroy how many ozone molecules?  
 (a) Carbonic Acid                      (b) CO<sub>2</sub>

- (c)  $\text{SO}_2$  (d) NO
193. A single chloride free radical can destroy how many ozone molecules? (6 Time)
- (a) 100 (b) 100,000 (c) 100,00 (d) 10
194. Peroxyacetyl nitrate (PAN) is an irritant to human beings and it affects.
- (a) Eyes (b) Ears (c) Stomach (d) Nose
195. The main pollutant of leather tanneries in the waste water is:
- (a) Lead (b) Chromium (VI)  
(c) Copper (d) Chromium (III)
196. In purification of portable water the coagulant used is:
- (a) Nickel sulphate (b) Copper Sulphate  
(c) Barium Sulphate (d) Aluminum Sulphate(Alum)
197. The newspaper can be recycled again and again many times as:
- (a) 5 (b) 3 (c) 4 (d) 2

## (SUBJECTIVE PART)

# 68/68 Marks Challenge

### SECTION-I

#### SHORT QUESTIONS (SQs)

1. Write four uses of Borax?
2. What is chemistry of Borax bead test?
3. How borax can be converted to orthoboric acid?
4. Why aqueous solution of Borax is alkaline in nature?
5. How Borax is used as water softening agents?
6. How does orthoboric acid react with:
  - a. (i) Ethyl Alcohol (ii) NaOH
7. Give the formulas of four boric acids with names.
8. What is action of heat on orthoboric acid,  $\text{H}_3\text{BO}_3$ ?
9. What are uses of Boric acid?
10. How aluminum reacts with aqueous sodium hydroxide?
11. Give any four uses of Aluminum.
12. Why is  $\text{CO}_2$  a gas at room temperature? While  $\text{SiO}_2$  is a solid?
13. What is vitreous silica?
14. Write four uses of sodium silicate?
15. What is meant by chemical garden?
16. What are Silicates?
17. What are silicones? Write their two uses?
18. Write the names of four oxides of lead used as pigments.