76. In the preparation of sulphuric acid, V_2O_5 is used in the reaction, which is [CBSE PMT 2001; AFMC 2001]

(a) $S + O_2 \rightarrow SO_2$

(b) $2SO_2 + O_2 \rightarrow 2SO_3$

(c) $SO_2 + H_2O \rightarrow H_2SO_4$

(d) $N_2 + 3H_2 \rightarrow 2NH_3$

77. Which of the following hydrides has the lowest boiling point [MP PET 1997]

(a) H_2O (b) H_2S

(c) H_2Se (d) H_2Te

78. The catalyst used in the manufacture of H_2SO_4 by contact process is [UPSEAT 1999]

(a) Al_2O_3 (b) Cr_2O_3

(c) V_2O_5 (d) MnO_2

79. The molecular formula of sulphur is [MP PMT 1996; MP PET/PMT 1998]

(a) S (b) S_2

(c) S_4 (d) S_8

80. Which of the following is not suitable for use in a descicator to dry substances [AIIMS 1996]

(a) Conc. H_2SO_4 (b) Na_2SO_4

(c) $CaCl_2$ (d) P_4O_{10}

81. Which shows polymorphism [DCE 2000]

(a) O (b) S

(c) Se (d) All

82. All the elements of oxygen family are [MP PET/PMT 1998]

(a) Non-metals (b) Metalloids

(c) Radioactive (d) Polymorphic

83. The triatomic species of elemental oxygen is known as [Kerala (Med.) 2002]

(a) Azone (b) Polyzone

(c) Triozone (d) Ozone

84. When H_2S gas is passed through nitric acid, the product is [Kerala (Engg.) 2002]

(a) Rhombic S (b) Prismatic S

(c) Amorphous S (d) Monoclinic S

(e) None of these

85. Shape of O_2F_2 is similar to that of [AIIMS 2004]

(a) C_2F_2 (b) H_2O_2

(c) H_2F_2 (d) C_2H_2

86. Which of the following bonds has the highest energy [CBSE PMT 1996]

(a) $Se - Se$ (b) $Te - Te$

(c) $S - S$ (d) $O - O$

87. Which of the following is not a chalcogen [CPMT 1999]

(a) O (b) S

(c) Se (d) Na

88. Which of the following is a suboxide [DPMT 2001]

(a) Ba_2O (b) Pb_2O

(c) C_3O_2 (d) ZnO

89. In the manufacture of sulphuric acid by contact process, Tyndall box is used to [KCET 2003]

(a) Filter dust particles

(b) Remove impurities

(c) Convert SO_2 to SO_3

(d) Test the presence of dust particles

90. Permono sulphuric acid is known as [Bihar CEE 1995]

(a) Marshell's acid (b) Caro's acid

(c) Sulphuric acid (d) None of these

91. $KO_2 + CO_2 \rightarrow ?$ (gas) [CPMT 1997]

(a) H_2 (b) N_2

(c) O_2 (d) CO

92. H_2SO_4 acts as dehydrating agent in its reaction with [JIPMER 2001]

(a) $H_2C_2O_4$ (b) $Ba(OH)_2$

(c) KOH (d) Zn

93. Which of the following group shows the highest boiling point [MP PET 2002]

(a) H_2O (b) H_2S

(c) H_2Se (d) H_2Te

94. In presence of moisture, SO_2 can [BVP 2003]

(a) Act as oxidant (b) Lose electron

(c) Gain electron (d) Not act as reductant

95. A gas that cannot be collected over water is [Kurukshetra CEE 1998]

(a) N_2 (b) O_2

(c) SO_2 (d) H_2

96. Which of the following is formed by the action of water on sodium peroxide [Pb. PMT 1999]

(a) H_2 (b) N_2

(c) O_2 (d) CO_2

97. Sulphur on boiling with $NaOH$ solution gives [Roorkee 1999]

(a) $Na_2S_2O_3 + NaHSO_3$ (b) $Na_2S_2O_3 + Na_2S$

(c) $Na_2SO_3 + H_2S$ (d) $Na_2SO_3 + SO_2$

98. Quartz is a crystalline variety of [Pb. CET 2002; Pb. PMT 2000, 04]

(a) Silicon carbide (b) Sodium silicate

(c) Silica (d) Silicon

99. The most efficient agent for the absorption of SO_3 is [BHU 2004; DPMT 2004]

(a) 80% H_2SO_4 (b) 98% H_2SO_4

(c) 50% H_2SO_4 (d) 20% $H_2S_2O_7$

100. Conc. H_2SO_4 is diluted [Pb. CET 2001]

(a) By adding water in H_2SO_4

(b) By adding H_2SO_4 in water

(c) By adding glacial acetic acid in H_2SO_4

(d) None of the above

101. The smog is essentially caused by the presence of [AIEEE 2004]

(a) Oxides of sulphur and nitrogen

(b) O_2 and N_2

(c) O_2 and O_3

(d) O_3 and N_2

(b) It changes into calcium chloride and calcium hydroxide
(c) It absorbs moisture
(d) It changes into calcium chloride and calcium chlorate

144. The compound which forms a dative bond with ammonia [JIPMER 2001]

(a) CCl_4 (b) BCl_3
(c) $MgCl_2$ (d) $NaCl$

145. The bleaching action of bleaching powder is due to the formation of [Roorkee 1999]

(a) $CaCl_2$ (b) $CaSO_4$
(c) $HClO$ (d) $Ca(ClO_3)_2$

146. Fluorine with dilute $NaOH$ gives [MH CET 2000]

(a) OF_2 (b) O_3
(c) O_2 (d) HF and O_2

147. Which is not oxidised by MnO_2 [DCE 2003]

(a) F (b) Cl
(c) I_2 (d) I

148. Bromine water reacts with SO_2 to form [AFMC 1995]

(a) H_2O and HBr (b) H_2SO_4 and HBr
(c) HBr and S (d) S and H_2O

149. Which of the following reaction is not feasible [CBSE PMT PMT 2002]

(a) $2KI + Br_2 \rightarrow 2KBr + I_2$
(b) $2H_2O + 2F_2 \rightarrow 2HF + O_2$
(c) $2KBr + I_2 \rightarrow 2KI + Br_2$
(d) $2KBr + Cl_2 \rightarrow 2KCl + Br_2$

150. Which of the following has the lowest solubility [Roorkee 2000]

(a) CaF_2 (b) $CaCl_2$
(c) $CaBr_2$ (d) CaI_2

151. Which one of the following pairs of substances when mixed, produces chlorine gas at room temperature [IIT 1995]

(a) $NaCl$ and MnO_2
(b) $NaCl$ and HNO_3 (conc.)
(c) $NaCl$ and H_2SO_4 (conc.)
(d) HCl (conc.) and $KMnO_4$

152. Concentrated H_2SO_4 cannot be used to prepare HBr from $NaBr$, because it [IIT 1995]

(a) Reduces HBr (b) Oxidises HBr
(c) Disproportionates HBr (d) Reacts slowly with $NaBr$

153. Which of the following halides is least stable and has doubtful existence [IIT 1996]

(a) CI_4 (b) GeI_4
(c) SnI_4 (d) PbI_4

154. Chlorine cannot displace [MP PET 1996]

(a) Fluorine from NaF (b) Iodine from NaI
(c) Bromine from $NaBr$ (d) None of these

155. When fluoride is heated with conc. H_2SO_4 and MnO_2 the gas evolved is [DPMT 2000]

(a) F_2 (b) SF
(c) HF (d) None

156. Cl_2 reacts with CS_2 in presence of I_2 catalyst to form [AFMC 1995]

(a) $CHCl_3$ (b) CCl_4
(c) C_2H_5Cl (d) C_2H_6

157. Amongst $LiCl, RbCl, BeCl_2$ and $MgCl_2$. Maximum and minimum ionic character will be shown by the compounds [RPMT 1999]

(a) $LiCl, MgCl_2$ (b) $RbCl, BeCl_2$
(c) $RbCl, MgCl_2$ (d) $MgCl_2, BeCl_2$

158. Which is formed when fluorine react with hot and concentrated sodium hydroxide [CPMT 2000]

(a) O_2 (b) O_3
(c) NaO (d) HF

159. Which of the following condition is used to find atomic Cl_2 from molecular Cl_2 [CPMT 1996]

(a) High temperature, high pressure
(b) Low temperature, high pressure
(c) High temperature, low pressure
(d) Low temperature, low pressure

160. Which one is least basic [JIPMER 2000]

(a) BI_3 (b) BBr_3
(c) BCl_3 (d) BF_3

161. On heating $NaCl + K_2Cr_2O_7 +$ conc. H_2SO_4, the gas comes out is [JIPMER 2000]

(a) O_2 (b) Cl_2
(c) $CrOCl_2$ (d) CrO_2Cl_2

162. Aqua regia is a mixture of [KCET (Med.) 2001]

(a) $3HCl + 1HNO_3$ (b) $H_3PO_4 + H_2SO_4$
(c) $3HNO_3 + 1HCl$ (d) $HCl + CH_3COOH$

163. Unlike other halogens fluorine does not show higher oxidation states because [MP PET 1997]

(a) It is highly electronegative
(b) It has no d-orbitals
(c) Its atomic radius is very small
(d) The F^- ion is stable and isoelectronic with neon

164. Which halogen does not show variable oxidation state [UPSEAT 2003]

(a) F_2 (b) Cl_2
(c) Br_2 (d) I_2

165. To purify fluorine gas, fumes of HF are removed by [MH CET 2002]

(a) Solid NaF (b) H_2 gas
(c) Solid KHF_2 (d) None of these

166. Fluorine is prepared by

(a) Oxidation of HF
(b) Electrolysis of KF
(c) Electrolysis of fused KHF_2
(d) Decomposition of HgF_2

167. Amongst halogens fluorine is most oxidising because

(a) Fluorine has highest electron affinity
(b) Fluorine is most electronegative
(c) Dissociation energy for fluorine molecule is lowest

(d) All are correct

168. The alkali metal halides are soluble in water but LiF is insoluble because

(a) It is amphoteric

(b) The $Li-F$ bond is highly ionic

(c) Its lattice energy is high

(d) Li^+ ion is least hydrated

169. In which of the following pairs does the first gas bleaches flowers by reduction while the second gas does so by oxidation

(a) CO and Cl_2 (b) SO_2 and Cl_2

(c) H_2 and Br_2 (d) NH_3 and SO_2

170. Which of the following halogens does not form oxyacid [MP PET 1997]

(a) Fluorine (b) Chlorine

(c) Bromine (d) Iodine

171. Which of the following molecule is theoritically not possible [BHU 2002]

(a) OF_4 (b) OF_2

(c) SF_4 (d) O_2F_2

172. Iodine is released when potassium iodide reacts with [UPSEAT 1999]

(a) $ZnSO_4$ (b) $CuSO_4$

(c) $FeSO_4$ (d) $(NH_4)_2SO_4$

173. Which of the following is used in the preparation of chlorine [CBSE PMT 1999]

(a) $Only\ MnO_2$

(b) $OnlyKMnO_4$

(c) Both MnO_2 and $KMnO_4$

(d) Either MnO_2 or $KMnO_4$

174. Among Cl^-, Br^-, I^-, the correct order for being oxidise to dihalogen is [CPMT 1999]

(a) $I^- > Cl^- > Br^-$ (b) $Cl^- > Br^- > I^-$

(c) $I^- > Br^- > Cl^-$ (d) $Br^- > I^- > Cl^-$

175. On heating $KClO_3$, we get [CPMT 1999]

(a) Cl_2O (b) ClO_2

(c) ClO_3 (d) Cl_2O_7

176. For which one of the following properties of halogens the sequence $F > Cl > Br > I$ holds good [MP PET/PMT 1998]

(a) Electron affinity (b) Electronegativity

(c) Atomic radius (d) Boiling point

177. Which of the following properties increases on going down from F to I in Group VII-A of the periodic table ? [MP PMT 1997]

(a) Electronegativity (b) Volatile nature

(c) Ionic radius (d) Oxidising power

178. Among the halogens, the one which is oxidised by nitric acid is [KCET 2004]

(a) Fluorine (b) Iodine

(c) Chlorine (d) Bromine

179. The reaction of the type $2X_2 + S \rightarrow SX_4$ is shown by sulphur when X is [DCE 2003]

(a) Fluorine or chlorine

(b) Chlorine only

(c) Chlorine and bromine only

(d) F, Cl, Br all

180. When I_2 is passed through KCl, KF and KBr solutions [CPMT 2004]

(a) Cl_2 and Br_2 are evolved

(b) Cl_2 is evolved

(c) Cl_2, Br_2 and F_2 are evolved

(d) None of these [Manipal MEE 1995]

181. The solubility of I_2 increases in water in the presence of [Pb. CET 2002]

(a) KI (b) H_2SO_4

(c) $KMnO_4$ (d) NH_3

182. Which of the hydrogen halides forms salts like KHX_2 (where X is a halogen atom) [Kerala PMT 2004]

(a) HF (b) HCl

(c) HI (d) HBr

(e) All of these

183. With cold and dilute sodium hydroxide fluorine reacts to give [MH CET 2004]

(a) NaF and OF_2 (b) $NaF + O_3$

(c) O_2 and O_3 (d) $NaF + O_2$

184. Which one of the following oxides is expected exhibit paramagnetic behaviour [CBSE PMT 2005]

(a) CO_2 (b) SO_2

(c) ClO_2 (d) SiO_2

185. Of the following acids the one that is strongest is [DPMT 2004]

(a) $HBrO_4$ (b) $HOCl$

(c) HNO_2 (d) H_3PO_3

186. Which of the following is anhydride of perchloric acid [CPMT 2004]

(a) Cl_2O_7 (b) Cl_2O_5

(c) Cl_2O_3 (d) $HClO$

187. I_2 dissolves in KI solution due to the formation of [CPMT 2004]

(a) KI_2 and I^- (b) K^+, I^- and I_2

(c) KI_3^- (d) None of these

Noble gases

1. Which of the following outer electronic configuration represents argon [DPMT 1982; CPMT 1976; NCERT 1987; Kurukshetra CEE 1998]

(a) ns^2 (b) ns^2np^6

(c) ns^2np^5 (d) ns^2np^4

2. Which mineral was used in isolation of radium [CPMT 1978, 81, 91]

(a) Lime stone (b) Pitch blende

(c) Rutile (d) Haematite

3. Which is the lightest gas

(a) Hydrogen (b) Oxygen

(c) Helium (d) Nitrogen

4. The valency of inert gases is

(a) 5 (b) 1