98. Which one of the following metals cannot be used as an electromagnet?

(A) Iron (B) Copper
(C) Nickel (D) Cobalt

Ans. (B) **[SSC MTS 2008]**

Exp: Iron, Nickel and Cobalt are Magnetic Materials so these can be used as electromagnet but copper cannot be used as electromagnet.

99. Quartz is a type of –

(A) Silicon dioxide (B) Sodium silicate
(C) Aluminium oxide (D) Magnesium carbonate

Ans. (A) **[SSC CGL 2006]**

Exp: Quartz is the crystalline form of silicon dioxide.

100. Which one of the following is used in Pencils?

(A) Charcoal (B) Graphite
(C) Sulphur (D) Phosphorus

Ans. (B) **[SSC CGL 2014]**

Exp: Graphite is used in the making of Pencils. It is an allotrope of carbon.

101. In Graphite layers are held together by–

(A) Vander waal forces (B) Metallic bond
(C) Ionic bond (D) Covalent bond

Ans. (A) **[SSC CHSL 2012]**

Exp: In graphite, Layers are Held together by Vander walls forces. These are weak attractive forces between atoms or non–polar molecules. It is named after dutch scientist Johannes Diderik Van Vander Wall.

102. Which one among the following is Lubricant?

(A) Germanium (B) Sulphur
(C) Graphite (D) Indium

Ans. (C) **[SSC CHSL 2012]**

Exp: Solid Lubricants are the substances in which the friction between two layers is reduced due to their solid State. Graphite, Tungsten disulphide, Molybdenum disulphide are important solid lubricants.

103. Diamond is harder than Graphite because of–

(A) Difference of layers of atom
(B) Tetrahedral structure of diamond
(C) Difference of crystalline structure
(D) None of these

Ans. (C)

Exp: In diamond, 4 valence electrons of a carbon atom forms strong covalent bond and form tetrahedral structure due to sp^3 hybridisation. Graphite is hexagonal layered structure and it is soft. Due to difference in crystalline structure diamond is harder than graphite.

104. One carat of Diamond is equal to –

(A) 100 mg (B) 150 mg
(C) 200 mg (D) 250 mg

Ans. (C) **[SSC CHSL 2011]**

Exp: One carat of Diamond is equal to 200 mg.

105. Which of the following property is generally found in non metals?

(A) Brittleness (B) Conductivity
(C) Ductility (D) Malleability

Ans. (A) **[SSC CHSL 2011]**

Exp: The solid material which breaks into small pieces on hammering are called brittle. The non-metals are generally brittle in nature.

106. Fire-Fighting clothes are made from–

(A) Mica (B) Asbestos
(C) Talc (D) Steatite

Ans. (B) **[SSC CHSL 2011]**

Exp: Fire-Fighting Cloths are made from Asbestos because it has heat resistant property.

107. Fullerene is a newly discovered crystalline carbon allotrope, contains–

(A) 100 C atoms (B) 80 C atoms
(C) 60 C atoms (D) 40 C atoms

Ans. (C) **[SSC CHSL 2012]**

Exp: Fullerene is a newly discoverd crystalline carbon allotrope contains 60 C atoms. It was discovered by R.E. smalley and R.F. Curl and H.W. Kroto for this discovery these scientist shared the 1996 Noble Prize in chemistry. Fullerences (C_{60}) are the only pure form of Carbon. It is also known as Buckminster fullerene or bucky ball.

108. Chile saltpeter is the common name of–

(A) Potassium Nitrate (B) Sodium Nitrate
(C) Sodium Nitrite (D) Potassium Nitrite

Ans. (B) **[SSC CHSL Exam, 2015]**

Exp: Chilesalt peter is the common name of sodium nitrate ($NaNO_3$).

109. Which among the following elements is a liquid at room temperature?

(A) Phosphorus (B) Mercury
(C) Sodium (D) Aluminium

Ans. (B) **(SSC CHSL 2016)**

Exp: Mercury is the only metal which exists in liquid state at room temperature. This is due to weak metallic bonding as in mercury as it has fulfilled valence orbitals.

110. Which among the following is white phosphorus?

(A) P_1 (B) P_6 (C) P_4 (D) P_5

Ans. (C) **(SSC CHSL 2016)**

Exp: White phosphorus consists of P_4 units. It glows in dark (property known as chemiluminiscence) due to its slow oxidation. It is most reactive allotrope of phosphorous.

111. Alkali metals can

(A) Be highly unstable at room temperature
(B) Vaporize at room temperature
(C) Easily gain electrons
(D) Easily lose electrons

Ans. (D) **(SSC CHSL 2016)**

Exp: First Group of periodic table contains lithium (Li), Sodium (Na), Potassium (K), Rubidium (Rb), Cesium (Cs) and Francium (Fr). These are called as alkalimetals since their hydroxies form strong bases or alikali. The first ionization enthalpies of the alkali metals are very low. So they easily lose electrons.

112. Which among the following has the maximum density?

(A) Water (B) Ice
(C) Ethylene (D) Acetone

Ans. (A) **(SSC CHSL 2016)**

Exp: Water has the maximum density.

113. Who discovered Nitrogen?

(A) Faraday (B) Heisenberg
(C) Hooke (D) Rutherford

Ans. (D) **(SSC CHSL 2016)**

Exp: Nitrogen was discovered by Dainel Rutherford in 1772. In the molecular form, it exists as diatomic molecule (N_2) having triple bond between two nitrogen atoms. Dinitrogen is chemically inert at room temperature.

114. Which of the following gases is present in the atmosphere can be detected by its odour ?

(A) Ethane (B) Sulphur dioxide
(C) Hydrogen (D) Carbon monoxide

Ans. (B) **(SSC CHSL 2016)**

Exp: In the given options, Sulphur dioxide is toxic gas with a pungent and suffocation odour while ethane, hydrogen and carbon monoxide are odourless.

115. If water smells bad, then that odour can be removed by adding

(A) Alum (B) Bleach
(C) Activated carbon (D) Deactivated nitrogen

Ans. (C) **(SSC CHSL 2016)**

Exp: Activated carbon is also called **Activated charcoal** due to its high degree of micro- porosity. It acts as an adsorbent.

116. Which of these is not a macronutrient for Plants?

(A) Nitrogen (B) Phosphorous
(C) Potassium (D) Chlorine

Ans. (D) **(SSC CHSL 2016)**

Exp: Macronutrients are nutrients that are required in larger amount by plants.

eq: Carbon, Hydrogen, Nitrogen, Oxygen, Phosphorous Potassium, Calcium, Sulphur, Magnesium.

117. Which of the following elements has the lowest melting point?

(A) Platinum (B) Carbon
(C) Cobalt (D) Krypton

Ans. (D) **(SSC CHSL 2016)**

Exp: In the given options krypton is a gas. So krypton has the lowest melting point.

Order of Melting Point:- Gas < liquid < solid.

118. Why metals conduct electricity ?

(A) Because of low melting point
(B) Because of high tensile strength
(C) Because of free electrons
(D) Because of high atomic density

Ans. (C) **(SSC CHSL 2016)**

Exp: Conduction of electricity in metals is possible due to presence of free electrons.

119. Density of water is maximum at _____.

(A) 12 degree celsius (B) 8 degree celsius
(C) 4 degree celsius (D) 0 degree celsius

Ans. (C) **(SSC CHSL 2016)**

Exp: Water has maximum density (1 g cm^{-3}) at 4°C. This property is very useful for aquatic life. In severe cold, the upper layer of the sea water freezes. The heavier water has more density than that of ice is present below the surface of ice. The ice layer formed on the surface of a lake in winter does not sink to the bottom. Ice provides a thermal insulation for the water below it. The sea animals can live safely in water under these conditions.

120. Which of the following elements has the lowest melting point?

(A) Bromine (B) Zinc
(C) Lead (D) Calcium

Ans. (A) **(SSC CHSL 2016)**

Exp: Bromine is a nonmetal so it has lowest melting point. Non-metals have low melting point compared to metals.

121. Heavy water is_____.

(A) Monoterium oxide (B) Polyterium oxide
(C) Deuterium oxide (D) Trislum oxide

Ans. (C) **(SSC CHSL 2016)**

Exp: Heavy water is D_2O. (Deuterium oxide).

122. Solid carbon dioxide is known as _____.

(A) Hypo (B) Borax
(C) Alum (D) Dry ice

Ans. (D) **(SSC CHSL 2016)**

Exp: Solid carbon dioxide is known as dry ice. Dry ice is also called **Cardice**. Dry ice shows sublimation. It is used for making cold baths, used as coolant for preserving perishable articles in food industry, for curing local burns and in hospitals for surgical operations.

123. Who discovered Oxygen?

(A) Carl Scheele (B) Hooke
(C) Heisenberg (D) Williams

Ans. (A) **(SSC CHSL 2016)**

Exp: Oxygen was discovered by carl wilhelm scheele in 1772 and Joseph Priestley in 1774 but Priestley is given priority because his work was published first, but it is not given in options.

124. Which of the following gases is known as "Laughing Gas"?

(A) Nitrous oxide (B) Nitrogen peroxide
(C) Nitrogen (D) Nitric oxide

Ans. (A) **(SSC CGL 2016)**

Exp: Nitrous oxide is known as laughing gas. Mixture of nitrous oxide and oxygen is used as anaesthetic.

125. Which of the following statement is false?

(A) Radon is obtained from the decay of radium.
(B) Helium is an inert gas
(C) Xenon is the most reactive among the rare gases
(D) The most abundant rare gas found in the atmosphere is Radon.

Ans. (D)

Exp: In the given options statement (D) is false. While (A), (B) and (C) are true. Radon is obtained from decay of radium.

$$^{226}_{88}Ra \longrightarrow {}^{222}_{86}Rn + {}^{4}_{2}He$$

Helium is an inert gas due to stable configuration. Xenon is the most reactive among rare gases due to low ionisation enthalpy. The most abundant rare gas found in the atmosphere is Argon.

126. The Chemical formula of Cadmium nitrate is _____.

(A) $Cd(NO_3)_2$ (B) $CdNO_3$
(C) $Cd_2(NO_4C)_2$ (D) Cd_2NO_3

Ans. (A) **(SSC CHSL 2016)**

Exp: Cadmium ion – Cd^{2+}

Nitrate ion – NO_3^-

Chemical formula of cadmium nitrate is $Cd(NO_3)_2$

127. The common name of hydrogen peroxide is

(A) Borax (B) Bleach (liquid)
(C) Baking soda (D) Gypsum

Ans. (B) **(SSC CHSL 2016)**

Exp: Common name of hydrogen peroxide is bleach (liquid) because H_2O_2 is used as bleaching agent for delicate materials like textiles (silk, wool) paper pulp, straw, leather, ivory, oils and fats.

128. Which of the following elements has the lowest melting point?

(A) Sodium (B) Tin
(C) Radon (D) Radium

Ans. (C) **(SSC CHSL 2016)**

Exp: Radon has the lowest melting point due to weak vander waal force in noble gases. It is a non-metal. Noble gases have low melting point and boiling point compared to other elements.

129. Barium loses ____ electrons to achieve noble gas electron configuration.

(A) 1 (B) 2 (C) 3 (D) 4

Ans. (B) **(SSC CHSL 2016)**

Exp: Barium loses 2 electrons to achieve noble gas electronic configuration.

130. The common name of sodium tetraborate decahydrate is _____.

(A) Epsom salt (B) Gypsum
(C) Borax (D) Galena

Ans. (C) **(SSC CHSL 2016)**

Exp: The common name of sodium tetraborate decahydrate is Borax ($Na_2B_4O_7.10H_2O$)

131. The Chemical formula of Ammonium dichromate is _____.

(A) $(NH_4)_2Cr_2O_7$ (B) $(NH_4)CrO_3$
(C) $(NH_4)Cr_2O_3$ (D) $(NH_4)_2Cr_2O_3$

Ans. (A) **(SSC CHSL 2016)**

Exp: Ammonium ion – NH_4^+

Chromate ion – $Cr_2O_7^{-2}$

Chemical formula of Ammonium dichromate is $(NH_4)_2Cr_2O_7$

132. Which gas among the following used as an anaesthetic?

(A) Methane (B) Carbon dioxide
(C) Nitrous oxide (D) Nitrogen

Ans. (C) **[SSC FCI 2012]**

Exp: Nitrous oxide gas is used as a mild anaesthetic in dental and other minor surgical operations when mixed with 10% O_2.

133. Which of the following elements has the lowest melting point?

(A) Titanium (B) Tungsten
(C) Argon (D) Nickel

Ans. (C) **(SSC CHSL 2016)**

Exp: Noble gases have low melting point and boiling point compared to other elements. Argon is a noble gas.

134. The common name of sulphur is

(A) Freon (B) Galena
(C) Lime (D) Brimstone

Ans. (D) **(SSC CHSL 2016)**

Exp: The common name of sulphur is brimstone.

135. The Chemical formula of Aluminium Chloride is _____.

(A) AlCl (B) $AlCl_2$
(C) $AlCl_3$ (D) Al_2Cl_3

Ans. (C) **(SSC CHSL 2016)**

Exp: Aluminium ion = Al^{3+}

Chloride ion = Cl^-

Chemical formula of Ammonium Chloride = $AlCl_3$

136. The Chemical formula of Ammonium Oxalate is _____.

(A) $(NH_4)_2C_2O_4$ (B) $(NHD)_2CO_4$
(C) $(NHD)_2C_2O_4$ (D) $(NHD)_2C_2O_3$

Ans. (A) **(SSC CHSL 2016)**

Exp: Ammonium ion:- NH_4^+
Oxalate ion:- $C_2O_4^{2-}$
Chemical formula of Ammonium oxalate is :- $(NH_4)_2\ C_2O_4$

137. Chemical Formula of Water is _____ .

(A) O_2 (B) N_2O
(C) NaOH (D) H_2O

Ans. (D) **(SSC CHSL 2016)**

Exp: Chemical formula of water is H_2O. 2 atoms of H and 1 atom of O combines to make 1 molecule of water.

138. The Chemical formula of Ammonium sulphate is

(A) NH_4SO_4 (B) $(NH_4)_2SO_3$
(C) NH_4SO_3 (D) $(NH_4)_2SO_4$

Ans. (D) **(SSC CHSL 2016)**

Exp: Ammonium ion – NH_4^+

Sulphate ion – SO_4^{2-}

NH_4^+ SO_4^{2-} $\Rightarrow (NH_4)_2SO_4$

So the chemical formula of Ammonium sulphate will be $(NH_4)_2SO_4$

139. Which of the following elements has the lowest melting point?

(A) Platinum (B) Sodium
(C) Antimony (D) Krypton

Ans. (D) **(SSC CHSL 2016)**

Exp: In the given options krypton has the lowest melting point because it is a noble gas (inert gas). Noble gases have low melting point and boiling point compared to other elements.

140. The common name of Magnesium Sulphate heptahydrate is

(A) Epsom salt (B) Borax
(C) Gypsum (D) Lime

Ans. (A) **(SSC CHSL 2016)**

Exp: Common name of Magnesium Sulphate hepta hydrate is Epsom salt ($MgSO_4.7H_2O$).

141. Which of the following elements has the lowest melting point?

(A) Helium (B) Potassium
(C) Tungsten (D) Sulphur

Ans. (A) **(SSC CHSL 2016)**

Exp: Helium is a noble gas (inert gas) so it has lowest melting point. Noble gases have low melting point and boiling point compared to other elements.

142. The chemical formula of Ammonia is _____ .

(A) NH_4^+ (B) NH
(C) NH_2 (D) NH_3

Ans. (D) **(SSC CHSL 2016)**

Exp: Chemical formula of ammonia is NH_3. It is manufactured in Lab by Haber process.

143. Who discovered Fullerene (an allotrope of carbon)?

(A) K Scheele (B) Richard Smalley
(C) Faraday (D) Heisenberg

Ans. (B) **(SSC CHSL 2016)**

Exp: In 1985, a third crystalline allotrope of carbon called fullerene was discovered collectively by three scientists namely R.E. Smalley, R.F. curl and H.W. Kroto shared the 1996 Noble prize in chemistry.

144. Which of the following is not a Halon gas ?

(A) Methane (B) Carbon tetra chloride
(C) Iodomethane (D) Bromomethane

Ans. (A) **(SSC CHSL 2016)**

Exp: Halons are the gases which contains halogen atom as an essential element. It is used for fire suppression & refrigeration. Carbon tetra chloride, Iodomethane, and Bromomethane are Halon as they contain Halogen atom.

145. Which of the following elements has the lowest melting point?

(A) Tin (B) Hydrogen
(C) Carbon (D) Sodium

Ans. (B) **(SSC CHSL 2016)**

Exp: In the given options, Hydrogen is a gaseous non metal so it has the lowest melting point.

146. The Chemical formula of Ammonium chloride is _____.

(A) $(NH(D)_2Cl$ (B) NH_4Cl_3
(C) NH_4Cl_2 (D) NH_4Cl

Ans. (D) **(SSC CHSL 2016)**

Exp: Ammonium ion = NH_4^+
Chloride ion = Cl^-
Chemical formula of Ammonium chloride – NH_4Cl

147. Which of the following elements has the lowest melting point?

(A) Iron (B) Nitrogen
(C) Iodine (D) Lead

Ans.(B) **(SSC CHSL 2016)**

Exp: In the given options, Nitrogen is gaseous nonmetal so it has the lowest melting point. Iron and lead are metals while Iodine is solid nonmetal having higher melting point than the melting point of nitrogen.

148. Filament of electric bulb is made of _____.

(A) Magnesium (B) Lead
(C) Tin (D) Tungsten

Ans. (D) **(SSC CHSL 2016)**

Exp: Filament of electric bulb is made of Tungsten metal. Tungsten metal has highest melting point (3,422°C).

149. Chemical formula of Ammonia is _____.

(A) PH_3 (B) NO_2
(C) AlN (D) NH_3

Ans. (D) **(SSC CHSL 2016)**

Exp: Chemical formula of
Ammonia – NH_3
Phosphine – PH_3
Nitrogen dioxide – NO_2
Aluminium nitride – AlN

150. Which of the following elements has the lowest melting point?

(A) Oxygen (B) Platinum
(C) Sodium (D) Tin

Ans. (A) **(SSC CHSL 2016)**

Exp: In the given options, Oxyen is a gaseous nonmetal so it has the lowest melting point. Non- metals have low melting point compared to metals.

151. Chemical Formula of Aluminium Nitride is

(A) AN (B) AlN
(C) AlNi (D) ANi

Ans. (B) **(SSC CHSL 2016)**

Exp: Aluminium ion – Al^{+3}
Nitride ion – N^{-3}
So chemical formula of Aluminium nitride will be AlN.

152. $NaHCO_3$ is chemical formula for _____.

(A) Borax (B) Vinegar
(C) Lime (D) Baking soda

Ans. (D) **(SSC CHSL 2016)**

Exp: Baking soda is sodium bicarbonate. Its chemical formula is $NaHCO_3$.

153. Which of the following elements has the lowest melting point?

(A) Chromium (B) Hydrogen
(C) Zinc (D) Silver

Ans. (B) **(SSC CHSL 2016)**

Exp: In the given options, Hydrogen is gas so it has lowest melting point. Order of melting point:- Solid > liquid > gas.

154. Which of the following elements has the lowest melting point?

(A) Boron (B) Calcium
(C) Neon (D) Gold

Ans. (C) **(SSC CHSL 2016)**

Exp: In the given options, Neon is noble gas so it has lowest melting point. Noble gases have low melting point and boiling point compared to other elements.

155. The Chemical formula of Ammonium nitrate is _____.

(A) $(NHB)_2NO_3$ (B) NH_4NO_3
(C) $NH_4(NOC)_2$ (D) NH_2NO_3

Ans. (B) **(SSC CHSL 2016)**

Exp: Ammonium ion – NH_4^+
Nitrate ion – NO_3^-
So chemical formula of ammonium nitrate will be NH_4NO_3.

156. Which of the following elements has the lowest melting point?

(A) Xenon (B) Iodine
(C) Barium (D) Magnesium

Ans. (A) **(SSC CHSL 2016)**

Exp: In the given options, Xenon is a noble gas (inert gas). So it has the lowest melting point. Noble gases have low melting point and boiling point compared to other elements.

157. Which of the following elements has the lowest melting point?

(A) Titanium (B) Sulphur
(C) Argon (D) Zinc

Ans. (C) **(SSC CHSL 2016)**

Exp: Argon is a noble gas (inert gas) so it has lowest melting point. Noble gases have low melting point and boiling point compared to other elements.

158. Which of the following elements has the lowest melting point?

(A) Oxygen (B) Gold
(C) Silver (D) Manganese

Ans. (A) **(SSC CHSL 2016)**

Exp: In the given options, Oxygen is a nonmetal so it has lowest melting point. Non- metals have low melting point compared to metals.

159. What is washing soda?

(A) Aluminium bicarbonate
(B) Sodium bicarbonate
(C) Aluminium sulphate
(D) Sodium carbonate

Ans. (D) **(SSC CHSL 2016)**

Exp: Washing soda is chemically known as sodium carbonate decahydrate ($Na_2CO_3.10H_2O$).

160. Which of the following elements has the lowest melting point?

(A) Zinc (B) Titanium
(C) Sulphur (D) Fluorine

Ans. (D) **(SSC CHSL 2016)**

Exp: In the given options Fluorine is nonmetal so it has lowest melting point. Non- metals have low melting point compared to metals. Sulphur has higher melting point compared to fluorine.

161. Which of the following is false?

(A) Hydrogen atom is roughly a third of the mass of tritium
(B) Deuterium is called heavy hydrogen
(C) Deuterium atom has 1 neutron
(D) Protium is the rarest isotope of hydrogen

Ans. (D) **(SSC CHSL 2016)**

Exp: Hydrogen has three isotopes. These are called –
(i) Protium or ordinary hyrdogen [^1_1H]– it is most abundant isotope of hydrogen.

(ii) Deuterium or heavy hydrogen [$^{2}_{1}H$ or D].

(iii) Tritium [$^{3}_{1}H$ or T] :- It is the least abundant of all isotopes of hydrogen. Atomic properties of isotopes of Hydrogen.

Property	H	D	T
Relative(%) Abundance	99.985	0.0156	10^{-15}
Relative Atomic Mass($gmol^{-1}$)	1.007825	2.014102	3.016049

162. Zeolite is

(A) Hydrated ferric oxide

(B) Hydrated sodium aluminium silicate

(C) Sodium hexametaphosphate

(D) Sodium tetraborate

Ans. (B) **(SSC CGL 2016)**

Exp: Hydrated sodium aluminium silicates, ($Na_2Al_2Si_2O_8.xH_2O$) is known as **Zeolite.** It has property of exchanging Ca^{+2} and Mg^{+2} ions present in hard water with sodium present in it. Zeolite can be represented by the general formula Na_2Z where Z = $Al_2Si_2O_8$. xH_2O.

163. Helium is added to the oxygen supply of deep sea divers because it is_____

(A) Less poisonous than nitrogen

(B) Lighter than nitrogen

(C) Readily miscible with oxygen

(D) Less soluble in blood than nitrogen at high pressure

Ans. (D) **(SSC CGL 2016)**

Exp: Helium-Oxygen mixture is used by deep sea divers in preference to nitrogen oxygen mixture because of its very low solubility in blood.

164. Water is used in a hot water bag because

(A) It is easily available

(B) It has high specific gravity

(C) It has high specific heat

(D) It is a liquid substance

Ans. (C) **(SSC CGL 2016)**

Exp: Water is used in hot water bag because it has high specific heat. The specific heat of water is 1 calorie/gram°C or 4.186 joule/gram°C which is higher than any other common substance.

165. What is contained in Chlorophyll ?

(A) Sodium (B) Potassium

(C) Manganese (D) Magnesium

Ans. (D) **(SSC CGL 2016)**

Exp: Magnesium metal in the form of Mg^{+2} ions are present in chlorophyll a, the green colour pigment of plants, which absorb light and is essential for photosynthesis.

166. What is the product formed when sodium bicarbonate is heated strongly?

(A) Sodium carbonate (B) Sodium hydroxide

(C) Sodium peroxide (D) Sodium monoxide

Ans. (A) **(SSC CGL 2016)**

Exp: When sodium bicarbonate ($NaHCO_3$) is strongly heated it gives sodium carbonate.

$$2NaHCO_3 \xrightarrow{\Delta} Na_2CO_3 + CO_2 + H_2O$$

167. The most pure form of carbon among the options is

(A) Anthracite (B) Lampblack

(C) Graphite (D) Wood Charcoal

Ans. (C) **(SSC CGL 2016)**

Exp: The most pure form of carbon among the options is graphite because other forms of elemental carbon like carbon black, coke and charcoal are all impure. Anthracite has 90–95% carbon content.

168. Activated Charcoal is used to remove colouring matter from pure substances by ____.

(A) Bleaching (B) Oxidation

(C) Adsorption (D) Reduction

Ans. (C) **(SSC CGL 2016)**

Exp: Charcoal is an amorphous allotropic form of carbon. Charcoal is highly porous substance and can adsorb many times their own volume of gases. Its adsorption capacity can be further increased by heating at 1273K in a current of super heated steam. Charcoal thus prepared is called activated charcoal.

169. Silica gel is a

(A) Moisturizer (B) Flavouring agent

(C) Drying agent (D) Delicious food

Ans. (C) **(SSC CGL 2016)**

Exp: Silica gel acts as drying agent. Silica gel is a amorphous form of silica or Silicon dioxide (SiO_2). It is very porous and it contains about 4% water. To protect merchandise from moisture during storage, small packets of dry silica gel are placed in packing boxes.

170. Silver gets corroded due to _____ in air.

(A) Oxygen (B) Hydrogen sulphide

(C) Carbon dioxide (D) Nitrogen

Ans. (B) **(SSC CGL 2016)**

Exp: Silver gets corroded by reacting with hydrogen Sulphide in the air to form black Silver Sulphide compound.

171. Which of the metals has the maximum thermal conductivity?

(A) Iron (B) Aluminium

(C) Silver (D) Copper

Ans. (C) **(SSC CGL 2016)**

Exp: Silver metal has maximum thermal conductivity in the given options. Increasing order of thermal conductivity at 25°C for various metals.

Platinum < Iron < Tungsten < Aluminium < Gold < Copper < Silver.

172. Which one of the following forms of phosphorous is most reactive?

(A) Black Phosphorous (B) White Phosphorous

(C) Voilet Phosphorous (D) Red Phosphorous

Ans. (B) **(SSC CGL 2016)**

Exp: Three main allotropic form of Phosphorous are (A) White phosphorous , (B) Red phosphorous (C) Black phosphorous. White phosphorous is more reactive than the other because of angular strain in P_4 molecule where the angles are only 60° in other forms.

173. Magnesium is a constituent metal of _____.

(A) Chlorophyll molecule (B) DNA

(C) Mitochondria (D) Ribosomes

Ans. (A) **(SSC CGL 2016)**

Exp: Magnesium is a constituent metal of chlorophyll molecule.

174. Name the gas used in preparation of bleaching powder

(A) Oxygen (B) Hydrogen

(C) Nitrogen (D) Chlorine

Ans. (D) **(SSC CGL 2016)**

Exp:When chlorine gas is passed through dry slaked lime, bleaching powder ($CaOCl_2$) is formed. It is also called chloride of lime. Its chemical name is Calcium OxyChloride.

$Ca(OH)_2 + Cl_2 \rightarrow CaOCl_2 + H_2O$

175. Phosphorous is kept in water because

(A) Its ignition temperature is very high

(B) Its ignition temperature is very low

(C) Its critical temperature is high

(D) Its critical temperature is low

Ans. (B) **(SSC CGL 2016)**

Exp: White phosphorus (P_4) has very low ignition temperature (303 K) and therefore it catches fire in air so it is generally stored in under water.

176. In arc welding Argon is used because of its

(A) Low reactivity with metal

(B) Ability to lower the melting point of the metal

(C) High flammability (D) High calorific value

Ans. (A) **(SSC CGL 2016)**

Exp: Argon is used to protect metal surfaces from oxidation during the welding of steel. It is used to provide an inert atmosphere in metallurgical processes.

177. Inert gases are

(A) Miscible with water (B) Not stable

(C) Chemically unreactive

(D) Chemically very active

Ans. (C) **(SSC CGL 2016)**

Exp: The group 18 consist of elements He, Ne, Ar, Kr, Xe, and Rn. These gases at ordinary temperature do not have chemical reactivity and therefore, they are called **inert gases**.

178. Which of the following fuels causes minimum environmental pollution?

(A) Diesel (B) Kerosene

(C) Hydrogen (D) Coal

Ans. (C) **(SSC CGL 2016)**

Exp: Hydrogen is used as an efficient fuel because It has many advantages over conventional fossil fuels. It does not produce any pollution and releases larger energy per unit mass of fuel in comparison to gasolene and other fuels.

$2H_2 + O_2 \rightarrow 2H_2O$

179. Which of the following is the most important raw material for generation of power in India?

(A) Mineral Oil (B) Natural Gas

(C) Uranium (D) Coal

Ans. (D) **(SSC CGL 2016)**

Exp: In India, coal is the bulk of primary energy contributor with 56.90% share.

180. The purest form of water in nature is

(A) Rain water (B) Lake water

(C) River water (D) Sea water

Ans. (A) **(SSC CGL 2016)**

Exp: The purest form of water in nature is rain water.

181. Highest percentage of carbon is found in which form of coal?

(A) Anthracite (B) Bituminous

(C) Peat (D) lignite

Ans. (A) **(SSC CGL 2016)**

Exp: Highest percentage of carbon is found in Anthracite coal. It contains 92-98% carbon.

182. Which one of the following is a good electrical conductor?

(A) Graphite (B) Diamond

(C) Peat (D) Charcoal

Ans. (A) **(SSC CGL 2016)**

Exp: Since only three electrons of each carbon are used in making hexagonal rings in graphite, fourth valence electron of each carbon is free to move. This makes graphite a good conductor of heat and electricity.

183. Which of the following acts as best adsorbent?

(A) Charcoal (B) Activated Charcoal

(C) Activated Coconut Charcoal

(D) Carbon black

Ans. (C) **(SSC CGL 2016)**

Exp: In the given options, activated coconut charcoal acts as best adsorbent. It has predominantly pores in micro pore range. Almost 85-90% surface are of a coconut shell exist as micropores. These small pores match the size of contaminant molecules in drinking water and therfore are very effective in trapping them.

184. Which of the following metal has the least melting point?

(A) Gold (B) Silver
(C) Mercury (D) Copper

Ans. (C) [SSC CHSL 2014]

Exp: Mercury metal has the lowest melting point because it is found in liquid state at room temperature.

185. Which of the following elements has the lowest melting point?

(A) Iodine (B) Lead
(C) Tin (D) Mercury

Ans. (D) (SSC CHSL 2016)

Exp: Mercury metal has the lowest melting point because it is found in liquid state at room temperature.

186. Which is the highest quality of hard coal?

(A) Anthracite (B) Bituminous
(C) Lignite (D) Peat

Ans. (A) (SSC CGL 2016)

Exp: Anthracite coal is much harder than other forms of coal, so it is known as hard coal. It contains about 90-95% Carbon.

187. Which of the following metal is the heaviest?

(A) Iron (B) Silver
(C) Nickel (D) Osmium

Ans. (D) (SSC CPO 2017)

Exp: Osmium is the heaviest element in periodic table as it has the highest density.

188. Which of the following metal has the lowest density?

(A) Lithium (B) Iron
(C) Gold (D) Vanadium

Ans. (A) (SSC CPO 2017)

Exp: Lithium is the lightest solid metal & has lowest density. Lithium is reactive alkali metal.

189. Which of the following is the most reactive in nature?

(A) Potassium (B) Calcium
(C) Lead (D) Copper

Ans. (A) (SSC CPO 2017)

Exp: Potassium is the most reactive in nature. So, it is not found naturally in its elemental form. Due to its reactive nature, it is kept under the Kerosene oil.

190. Which of the following is not a property of a metal?

(A) Hardness (B) Lustrous
(C) Malleability (D) Poor conductivity of heat

Ans. (D) (SSC CPO 2017)

Exp: Metals are hard, lustrous & malleable.

Hardness:- Metals are hard due to Metallic bonding.

Lustrous:- On exposure of light, metals emit electrons from its surface, so they are lustrous (shiny in appearance).

Malleability:- Property of metals by which they can be converted into sheets.

Conductor :- Metals are good conductor of heat & electricity due to free electrons.

191. Which of the following is an Inert gas?

(A) Hydrogen (B) Nitrogen
(C) Oxygen (D) Argon

Ans. (D) (SSC CGL 2017)

Exp: Helium (He) , Neon (Ne), Argon (Ar), Krypton (Kr), Xenon (Xe) & Radon (Rn) are inert or noble gases due to completely filled stable configuration.

192. Which of the following cannot be beaten into Sheets?

(A) Gold (B) Silver
(C) Potassium (D) Aluminium

Ans. (C) (SSC CGL 2017)

Exp: Property of a metal by which it can be beaten into sheets is called as **Malleability**. eg:- Aluminium, Gold & Silver can be beaten into sheets while potassium cannot be beaten into sheets because of its high reactivity.

193. Magnesium (Mg) + Oxygen (O) = ?

(A) Mg_2O (B) MgO_4
(C) O_2Mg (D) MgO

Ans. (D) (SSC CGL 2017)

Exp: $2\,Mg + O_2 \longrightarrow 2\,MgO$

When Magnesium is burnt in presence of O_2, a powder is formed i .e MgO (Magnesium Oxide)

194. Metals react with sodium hydroxide to produce _____.

(A) Oxygen gas (B) Sodium
(C) Water (D) Hydrogen gas

Ans. (D) (SSC CGL 2017)

Exp: Amphoteric metals reacts with sodium hydroxide to produce hydrogen gas.

$$2Al + 2NaOH + 2H_2O \rightarrow 2NaAlO_2 + 3H_2\uparrow$$

Amphoteric metal — Sodium hydroxide — Water — Sodium aluminate — Hydrogen gas

195. Magnesium oxide (MgO) + Water (H_2O) = ?

(A) [Mg(OH)] (B) [Mg_2(OH)]
(C) [$Mg(O_2H)_2$] (D) [$Mg(OH)_2$]

Ans. (D) (SSC CGL 2017)

Exp: $MgO + H_2O \rightarrow Mg(OH)_2$

$Mg(OH)_2$ is basic in nature & it is used as an antacid.

196. What is formed when Magnesium is burnt?

(A) Baking Soda (B) Calcium Carbonate
(C) Ash (D) Vinegar

Ans. (C) (SSC CGL 2017)

Exp: When Magnesium is burnt in air, it forms a white powder i.e. Magnesium oxide, which is called as Ash.

197. The property of metal by which it can be drawn into wires is called _____.

(A) Malleability (B) Viscosity

(C) Ductility (D) Tensile strength

Ans. (C) **(SSC CGL 2017)**

Exp: Ductility is a property of a metal by which it can be converted into wires. Gold is the most ductile & malleable metal.

198. The property of metals by which they can be beaten into thin sheets is called _____.

(A) Ductility (B) Malleability

(C) Viscosity (D) Tensile strength

Ans. (B) **(SSC CGL 2017)**

Exp: The property of metals by which they can be beaten into thin sheets is called Malleability. Gold is the most ductile & malleable metal.

Chapter-09

Organic chemistry

1. Which among the following is used in making liquors, medicines and as a fuel in aircrafts?

(A) Propyl alcohol (B) Dimethyl alcohol
(C) Ethyl alcohol (D) Methyl alcohol

Ans. (C) **(SSC CHSL 2016)**

Exp: Ethyl Alcohol or Ethanol (C_2H_5OH) is used for making liquors, medicines and as a fuel in aircrafts.

Note:

1. 100% pure alcohol is known as absolute alcohol.
2. Power alcohol is a mixture of 20% Alcohol and 80% petrol.

2. Ethane gas has a slightly _____ taste.

(A) Sweet (B) Bitter
(C) Sour (D) Salty

Ans. (A) **(SSC CHSL 2016)**

Exp: Ethane gas has a slightly sweet taste.

3. The Chemical formula of Urea is

(A) $(NH)_2CO_2$ (B) (NH)CO
(C) $(NH)_2CO$ (D) $(NH_2)_2CO$

Ans. (D) **(SSC CHSL 2016)**

Exp: The chemical formula of Urea is NH_2CONH_2 or $(NH_2)_2CO$. Urea was the first organic compound which is prepared by Friedrich Wohler in the laborary in 1828 from inorganic compound ammonium cyanate.

4. Alkenes were earlier known as _____.

(A) Paraffins (B) Titoffins
(C) Olefins (D) Meloffins

Ans. (C) **(SSC CHSL 2016)**

Exp: Alkenes were earlier known as **Olefins** (Greek : Olefiant = oil forming) since the lower members of alkenes forms oily product on reaction with halogens such as chlorine and bromine.

5. Decane has how many hydrogen atoms?

(A) 22 (B) 33
(C) 11 (D) 44

Ans. (A) **(SSC CHSL 2016)**

Exp: In decane 'Dec' represent 10 carbon atoms while 'ane' represent it is an alkane. General formula of alkane is C_nH_{2n+2} where 'n' represents no. of carbon atoms.

Decane – $C_{10}H_{2\times10+2} = C_{10}H_{22}$

So, 22 hydrogen atoms are present in Decane.

6. Carcinogenic chemicals cause

(A) Heart diseases (B) Diabetes
(C) Cancer (D) Asthma

Ans. (C) **(SSC CHSL 2016)**

Exp: Carcinogenic are the agents or substances which causes cancer. Benzene and most of the polynuclear aromatic hydrocarbons are Carcinogenic.

Examples: 1,2 – Benzopyrene, 1,2 – benzanthracene etc.

7. Aromatic hydrocarbons contain at least ____benzene like ring in their molecules.

(A) Four (B) Three
(C) Two (D) One

Ans. (D) **(SSC CHSL 2016)**

Exp: Hydrocarbons and their alkyl, alkenyl and alkynl derivatives which contain one or more-benzene rings either fused or isolated in their molecules are called aromatic hydrocarbons. They are also called arenes (Aromatic alkenes)

8. Pentane has ____ structural isomers.

(A) 1 (B) 2 (C) 3 (D) 4

Ans. (C) **(SSC CHSL 2016)**

Exp: Pentane (C_5H_{12}) has three structural isomers.

1. $CH_3 - CH_2 - CH_2 - CH_2 - CH_3$
2. $CH_3 - \underset{\displaystyle CH_3}{\underset{|}{CH}} - CH_2 - CH_3$
3. $CH_3 - \underset{\displaystyle CH_3}{\underset{|}{\overset{\displaystyle CH_3}{\overset{|}{C}}}} - CH_3$

9. What is used to prevent freezing of fuel in space crafts ?

(A) Benzene (B) Glycol
(C) Acetylene (D) Ester

Ans. (B) **(SSC CHSL 2016)**

Exp: Ethylene Glycol is used to prevent freezing of fuel in space crafts.

10. Which among the following is used to generate light, to weld metals?

(A) Ethylene (B) Acetylene
(C) Glycol (D) Oxalic acid

Ans. (B) **(SSC CHSL 2016)**

Exp: Acetylene reacts with oxygen to produce oxyacetylene. Oxyacetylene flame is used to generate light, to weld metals.

11. _____ gets converted to phosgene, when exposed to sunlight.

(A) Chloroform (B) Acetone
(C) Benzene (D) Propylene

Ans. (A) **(SSC CHSL 2016)**

Exp: Chloroform undergoes oxidation in the presence of light and air to form phosgene (carbonyl chloride)

$$CHCl_3 + \frac{1}{2}O_2 \rightarrow Cl - \overset{O}{\overset{||}{C}} - Cl + HCl$$

Chloroform is stored in dark bottles to prevent the formation of phosgene, as it is highly poisonous.

12. Who discovered benzene?

(A) Hal Anger (B) Michael Faraday
(C) Bruce Ames (D) Nicolas Appert

Ans. (B) **(SSC CHSL 2016)**

Exp: Benzene (phene), C_6H_6 was first discovered by Michael Faraday (1825).

13. What is wood spirit?

(A) Methyl Alcohol (B) Ethyl Alcohol
(C) Butyl Alcohol (D) Propyl Alcohol

Ans. (A) **[SSC CHSL 2011]**

Exp: Methyl Alcohol or Methanol (CH_3OH) is known as wood spirit. It is also known as wood alcohol because it was formerly obtained by the destructive distillation of wood.

14. The compound that has least value for octane number is–

(A) N-Heptane (B) 2-Methyl heptane
(C) Iso-octane (D) 2,2-dimethyl Hexane

Ans. (A) **[SSC CGL Exam, 2014]**

Exp: The octane number of fuel is based on how two fuels ignite, under compression. Octane no of all fuels lies between n-Heptane and 2,2, 4- Tri Methyl pentane (Iso - octane). Octane number of n-Heptane is zero while iso-octane has 100.

15. Chloroform can be used as –

(A) Analgesic (B) Anaesthetic
(C) Antimalarial (D) Antibiotic

Ans. (B) **[SSC CHSL Exam, 2012]**

Exp: The first time chloroform was used as anaesthetic by James Simpson. But it is rarely used for this purpose now because it causes extensive liver damage. Chloroform undergoes oxidation in the presence of light and air to form phosgene (carbonyl chloride).

16. The process of conversion of sugar into Alcohol is known as–

(A) Fermentation (B) Respiration
(C) Photosynthesis (D) Excretion

Ans. (A) **[SSC Steno Exam, 2005]**

Exp: The process of conversion of sugar into Alcohol (Ethanol) is known as **Fermentation**.

$$\underset{\text{(Sucrose)}}{C_{12}H_{22}O_{11}} + H_2O \xrightarrow{\text{Invertase}} \underset{\text{(Glucose)}}{C_6H_{12}O_6} + \underset{\text{(Fructose)}}{C_6H_{12}O_6}$$

$$C_6H_{12}O_6 \xrightarrow{\text{Zymase}} 2C_2H_5OH + 2CO_2$$

17. Denatured spirit or denatured alcohol is mixed with–

(A) Petrol (B) Kerosene
(C) Water (D) Pyridine

Ans. (D) **[SSC Sec off. 2007]**

Exp: Denaturated spirit or denaturated alcohol is commercial ethyl alcohol to which small amounts of very poisonous substances like pyridine or methyl alcohol has been added.

18. The chief source of naphthalene is –

(A) Coaltar (B) Diesel
(C)Charcoal (D) Camphor

Ans. (A) **[SSC CHSL 2012]**

Exp: Naphthalene is the largest single constituent (6 to 10%) of coal tar. Naphthalene as 'moth ball' has been used to protect woolen goods from moths.

19. Formalin is an aqueous solution of –

(A) Methanal (B) Ethanol
(C) Fructose (D) Nitric acid

Ans. (A) **[SSC CGL Exam, 2006]**

Exp: 40% aqueous solution of formaldehyde (Methanal) is known as **formalin**. It is used as germicide, antiseptic and also for preserving biological specimens.

20. Isomer of ethyl alcohol is –

(A) Dimethyl ether (B) Diethyl ether
(C) Acetone (D) Methylethyl ether.

Ans. (A) **[SSC MTS 2006]**

Exp: Isomer of ethyl alcohol (C_2H_5OH) is dimethyl ether (CH_3OCH_3). Isomers are the compounds having same molecular formula but differ from each other in physical or chemical properties.

21. Fermentation of starch gives –

(A) Ethanol (B) Ethanal
(C) Methanal (D) Methanol

Ans. (A) **[SSC MTS 2006]**

Exp: Ethanol is obtained from the fermentation of starch. The process of conversion of starch, sugar to alcoholic products (Beer, Whisky and vodka etc.) in the presence of yeast or some bacteria is known as **fermentation**.

22. Which one of the following is a Heterocyclic compound?

(A) Benzene (B) Anthracene
(C) Naphthalene (D) Furan

Ans.(D) **[SSC CHSL 2013]**

Exp: Furan  is a heterocyclic compound. Heterocyclic

compounds are those cyclic compounds in which one or more of the ring carbons are replaced by another atom (hetero atom). Nitrogen, oxygen and sulphur are most common hetero atoms.
eg. pyrrole, thiophene, pyridine, tetrahydrofuran etc.

23. Bagasse is used in the manufacturing of–
(A) Paper (B) Plastic
(C) Paint (D) Varnish

Ans. (A) **[SSC FCI 2012]**

Exp: Bagasse is sugarcane fibre waste left after juice extraction. It is used for production of paper.

24. Aluminium carbide (Al_4C_3) on hydrolysis gives–
(A) CH_4 (B) C_2H_6
(C) C_2H_4 (D) C_2H_2

Ans.(A)

Exp: Upon hydrolysis, Aluminium carbide gives methane gas.

$$Al_4C_3 + 12H_2O \rightarrow 3CH_4 + 4Al(OH)_3$$

25. Which of the following gas is used for the artificial ripening of Fruits?

Or

Which gas is used for the artificial ripening of Green Fruits?
(A) Ethyne (B) Ethylene
(C) Ethane (D) Methane

Ans. (B) **[SSC CPO, CGL 2005, 06, 08]**

Exp: Ethylene gas is used for the artificial ripening of fruits. It is only gaseous plant hormone.

26. Ethanol containing 5% water is known as
(A) Rectified spirit (B) Absolute alcohol
(C) dilute alcohol (D) Power alchol

Ans. (A)

Exp: Rectified spirit contains 95.6% of ethanol and 4.4% of H_2O. It is purified by the means of repeated distillation called rectification.

27. Which of the following is used as a test for aliphatic primary amines?
(A) Pollen's test (B) Fehling's test
(C) Isocyanide test (D) Azodye test

Ans. (C)

Exp: On warming with chloroform and alcoholic solution of KOH, primary amines (both aliphatic and aromatic) form isocyanides or carbylamines with extremely unpleasant smell.

$$R-NH_2 \xrightarrow[KOH]{CHCl_3} R-NC + 3KCl + 3H_2O$$

28. The gas that usually cause explosion in coal mines is–
(A) Hydrogen (B) Carbon Monoxide
(C) Air (D) Methane

Ans. (D) **[SSC CHSL 2010]**

Exp: The gas that usually cause explosion in coal mines is methane (CH_4). The coal miners call it fire damp because it forms explosive mixture with air.

29. The temperature of oxy–acetylene flame is around–
(A) 2800°C (B) 3200°C
(C) 4000°C (D) 1500°C

Ans. (B) **[SSC CGL 2011]**

Exp: Acetylene burns in an atmosphere of pure oxygen to produce extremely high temperature (3200°C). This flame is used for welding.

30. The correct order of increasing basic strength in aqueous solutions is
(A) $NH_3 < CH_3NH_2 < (CH_3)_2NH$
(B) $CH_3NH_2 < (CH_3)NH < NH_3$
(C) $CH_3NH_2 < NH_3 < (CH_3)_2NH$
(D) $(CH_3)_2NH < NH_3 < CH_3NH_2$

Ans. (A)

Exp: Order of basic strength in aqueous solution depends not only upon electron releasing effect but also upon steric effect & Hydration effect.

31. Production of alcohol from organic compounds by micro-organism is known as–
(A) Anaerobic respiration (B) Aerobic respiration
(C) Combustion (D) Fermentation

Ans. (D) **[SSC CHSL 2012]**

Exp: The process of conversion of carbon compounds (Organic) in alcohol by Micro organism is called fermentation.

32. The pair of compounds used as anaesthetic in medicine is–
(A) Nitrous oxide, Chloroform
(B) Chloroform and Nitrogen Dioxide
(C) Nitrogen Dioxide and ether
(D) Ether and Ammonia

Ans. (A) **[SSC CGL 2014]**

Exp: Nitrous oxide (N_2O) & Chloroform ($CHCl_3$) are used as anaesthetic in medicines.

Note: Ether (Diethyl ether) is also used as anaesthetic.

33. Which one of the following is the constituent of teargas?
(A) Ethane (B) Ether
(C) Ethanol (D) Chloropicrin

Ans. (D)

Exp: Chloropicrin (CCl_3NO_2) or Nitrochloroform is the constituent of tear gas. It is currently used as fungicide, herbicide insecticide and broad spectrum antibiotics.

34. Chemical name of Gammahexane is–
(A) Toluene (B) Chlorobenzene
(C) Aniline (D) Benzene Hexa Chloride

Ans. (D) **[SSC CPO 2015]**

Exp: Benzene reacts with chlorine in the presence of ultraviolet light to form benzenehexachloride (BHC). BHC is a powerful insecticide. It is sold under the name **Lindane**.

35. Which of the following known as 'Marsh gas'?

(A) CO (B) CO_2

(C) CH_4 (D) H_2

Ans. (C)

Exp: CH_4 (Methane) is known as Marsh gas because it evolves as bubbles from marshy land by decaying of animals and plant materials.

36. What is Baeyer's reagent?

(A) Bromine water

(B) Acidic Potassium Permanganate

(C) Hydrogen peroxide

(D) Alkaline Potassium Permanganate

Ans. (D) **[SSC MTS 2013]**

Exp: 1% cold Alkaline potassium permanganate solution ($KMnO_4$) is known as **Baeyer's reagent**.

37. Which one of the following reacts with Fehling's solution?

(A) HCHO (B) C_2H_5OH

(C) CH_3COOH (D) CH_3COCH_3

Ans. (A) **[SSC MTS 2014]**

Exp: Carbon compounds of Aldehyde group reacts with Fehling's solution and HCHO is a compound of Aldehyde group.

38. The most extensive use of molasses after fermentation is to produce

(A) Methanol (B) Sugar

(C) Ethanol (D) Sugarcane

Ans. (C) **(SSC CGL 2016)**

Exp: Molasses is a cheap source of glucose, fructose, and sucrose and it forms an excellent raw material for making ethyl alcohol. Today less than 10% of ethyl alcohol is made by this method. In India, molasses is still major source of ethyl alcohol.

39. Which organism is responsible for alcohol fermentation?

(A) Chlorella (B) Yeast

(C) Agaricus (D) Puccinia

Ans. (B) **(SSC CGL 2016)**

Exp: Yeast cells convert sugar solution into alcohol by fermentation. Invertase and zymase enzymes participate in this process.

$$\underset{}{C_{12}H_{22}O_{11}} + H_2O \xrightarrow{\text{Invertase}} \underset{\text{(Glucose)}}{C_6H_{12}O_6} + \underset{\text{(Fructose)}}{C_6H_{12}O_6}$$

$$\underset{\text{Glucose}}{C_6H_{12}O_6} \xrightarrow{\text{Zymase}} \underset{\text{Ethyl alcohol}}{2C_2H_5OH} + 2CO_2$$

40. During fermentation of sugar, the compound which is always formed is

(A) Methyl Alcohol (B) Ethyl Alcohol

(C) Acetic Acid (D) Ethylene

Ans. (B) **(SSC CGL 2016)**

Exp: During fermentation of sugar ethyl alcohol (ethanol) is always formed. Fermentation of sugar takes place in presence of yeast cells.

41. What are Aldehydes ?

(A) Mild oxidising agents

(B) Strong oxidising agents

(C) Strong reducing agents

(D) Mild reducing agents

Ans. (C) **(SSC CGL 2016)**

Exp: Aldehydes are easily oxidised to corresponding acids with same no of carbon atoms with the help of oxidising agents such as acidified $KMnO_4$ or acidified $K_2Cr_2O_7$ solution. Reducing agents are easily oxidised itself and reduce other substances.

Example.

$$CH_3CHO + |O| \longrightarrow CH_3COOH$$

$$C_6H_5CHO + |O| \longrightarrow C_6H_5COOH$$

Since Aldehydes can be easily oxidized, they act as strong reducing agents.

42. Alcohol obtained by the process of Saponification is –

(A) Ethyl alcohol (B) Methyl alcohol

(C) Wood spirit (D) Glycerol

Ans. (D) **[SSC CHSL 2013]**

Exp: Glycerol is obtained from the process of Saponification it's a kind of sugar alcohol.

Triglyceride+Sodium hydroxide → Glycerol+3 Soap molecules

43. Which of the following is also known as Carbolic Acid?

(A) Phenol (B) Hydroxide

(C) Sulphuric Acid (D) Ethanol

Ans. (A) **(SSC CGL 2017)**

Exp: Phenol is also known as Carbolic acid. Its molecular formula is C_6H_5OH. It is used as anti-microbial agent.

Chapter-10

Chemistry in everyday life

1. _____ fibre is used in making bulletproof vests.

(A) Nylon-66 (B) Terylene
(C) Kevlar (D) Lexan

Ans. (C) **(SSC CHSL 2016)**

Exp: Kevlar is a polyamide which is used to make bulletproof vests. 1,4-diaminobenzene and terephthaloyl chloride react to form kevlar.

2. What is the full form of PVC?

(A) Phosphonil vinyl Carbonate
(B) Polyvinyl S Carbonate
(C) Polyvinyl Carbonate (D) Polyvinyl Chloride

Ans. (D) **(SSC CHSL 2016)**

Exp: Polyvinyl chloride (PVC) is polymerised product of vinyl chloride in the presence of benzoyl peroxide. PVC is a thermoplastic polymer. It is used for artificial floor covering.

3. Which fibre is used for making bristles of brushes .

(A) Kevlar (B) Nylon-66
(C) Terylene (D) Lexan

Ans. (B) **(SSC CHSL 2016)**

Exp: Nylon-66 is used for making bristles of brushes. It is a polymerised product (polyamides) of adipic acid and hexamethylene diamine.

4. Which among the following is false about natural rubber?

(A) It is an elastomer
(B) It is a monomer of cis-isoprene
(C) Natural rubber is a polymer of chloroprene
(D) It is heated with sulphur compounds to improve its properties

Ans. (C) **(SSC CHSL 2016)**

Exp: Natural rubber may be considered as a linear polymer of Isoprene (2-methyl-1, 3 butadiene). Natural rubber possesses elastic properties so, it is also termed as **Elastomer**. To improve physical properties a process of vulcanisation is carried out. This process consist of heating a mixture of raw rubber with sulphur and additive.

5. Which of the following is a Synthetic rubber?

(A) Leoprene (B) Monoprene
(C) Neoprene (D) Isoprene

Ans. (C) **(SSC CHSL 2016)**

Exp: In the given options, Neoprene is a synthetic rubber. Neoprene or polychloroprene is polymer of chloroprene.

6. Milbemycin is used in the eradication of _____.

(A) Agricultural Fungus (B) Agricultural Pests
(C) Agricultural Herbs (D) Agricultural Weeds

Ans. (B) **(SSC CHSL 2016)**

Exp: Milbemycin is used as broad spectrum antiparasite. It is used in the eradication of agricultural pests.

7. Plastic bottles are made of a polymer called PET. The expanded form of PET is

(A) Polyethylene terephthalate
(B) Polyethyl terelene
(C) Polyethylene triphosphate
(D) Polyethyl tetrachloride

Ans. (A) **(SSC CHSL 2016)**

Exp: The expanded form of PET or PETE is Polyethylene terephthalate. Its commercial name is Terylene. It is also used for making clothes and helmets.

8. In chemistry, soap is a salt of a ____.

(A) Fatty acid (B) Glycol
(C) Phosphorous (D) Ammounium Carbonate

Ans. (A) **(SSC CHSL 2016)**

Exp: Saponification is a process that produces soap. In chemistry, soaps are sodium or potassium salts of higher fatty acids like stearic acid, palmitic acid, Oleic acid etc.

9. The brand name Teflon represents which polymer?

(A) Polystyrene (B) Polypropylene
(C) Polytetrafluoroethylene
(D) Polyethylene terephthalate

Ans. (C) **(SSC CHSL 2016)**

Exp: Teflon represents polytetrafluoro ethylene (PTFE). It is a polymer of Tetrafluoro ethylene. It is used for making nonstick cooking utensils.

10. Which is widely used in the plastic industry for manufacturing Bakelite?

(A) Ethyl Alcohol (B) Phenol
(C) Ortho-Cresol (D) Catechol

Ans. (B) **[SSC See off. 2006]**

Exp: Bakelite is formed by condensation reaction of urea & formaldehyde. It is a thermosetting polymer (the polymer which becomes hard on heating).

11. Which of the following is used as raw material for the manufacture of rayon?

(A) Coal (B) Petroleum
(C) Cellulose (D) Plastic

Ans. (C) **[SSC CHSL 2015]**

Exp: Cellulose diacetate is also known as Rayon. It is obtained by the acylation of cellulose (natural polymer) with acetic anhydride in the presence of sulphuric acid. It is a semi synthetic polymer.

Semisynthetic polymers are obtained from natural polymers by subjecting them to some chemical process.

12. Barbituric acid and its derivatives are well known as–

(A) Tranquilizers (B) Antiseptics
(C) Antibiotics (D) Antipyretics

Ans. (A)

Exp: Barbituric acid and its derivatives are well known as Tranquilizers (medical drug, which reduce tension or anxiety).

13. The helical structure of protein is stabilized by

(A) Dipeptide bonds (B) Hydrogen bonds
(C) Ester bonds (D) Peptide bonds

Ans. (B)

Exp: The helical structure of proteins has been confirmed by X-rays diffraction. In the helix structure, NH group of one unit is linked to CO group by hydrogen bonding. The hydrogen bonds hold the helix in position.

14. The sugar which is not a disaccharide

(A) Lactose (B) Galactose
(C) Sucrose (D) Maltose

Ans. (B)

Exp: Galactose ($C_6H_{12}O_6$) is a monosaccharide. Monosaccharide have general formula ($C_nH_{2n}O_n$). In monosaccharides, ratio of carbon, hydrogen and oxygen is 1 : 2 : 1. Disaccharide gives two molecules of monosaccharide on hydrolysis.

15. Which one of the following is non-reducing sugar?

(A) Glucose (B) Sucrose
(C) Maltose (D) Lactose

Ans. (B)

Exp: Saccharides which reduce fehling solution, Tollen's reagent or Benedict's solution are called reducing sugars while those which fail to respond to those reactions are termed as non reducing sugars.

ex: Sucrose, Starch, Cellulose, Glycogen

16. Which of the following is a biodegradable polymer?

(A) Cellulose (B) Polythene
(C) Polyvinyl chloride (D) Nylon-6

Ans. (A)

Exp: The biodegradable polymer are the polymers which are degraded by the micro-organisms within a suitable period of time.

Ex: Polyglycolic acid (PGA), polyhydroxy butyrate (PHB).

17. Which of the following is related to the discovery of Nylon?

(A) Louis Pasteur (B) John Cabot
(C) J. Nicephore Niepce
(D) Dr. Wallace H. Carothers

Ans. (D) **[SSC MTS 2008]**

Exp: Nylon was discovered by American chemist Dr. wallac H. Carothers in 1935. Nylon is the material used in parachutes.

18. PVC is obtained by the polymerization of –

(A) Propane (B) Vinyl chloride
(C) Styrene (D) Acetylene

Ans. (B) **[SSC CPO 2012]**

Exp: PVC (Polyvinyl Chloride) is formed by the polymerization of vinyl chloride. It is a homopolymer. It is used for making rain coats, water pipes and hand bags.

19. Polyethene is formed by –

(A) Ethylene (B) Propylene
(C) Acetylene (D) Annulene

Ans. (A) **[SSC Sec. officer 2006]**

Exp: Polyethene (Polythene) is a polymer of ethylene. It is a thermoplastic.

20. Which one of the following is a Natural Polymer?

(A) Bakelite (B) Cellulose
(C) PVC (D) Nylon

Ans. (B)

Exp: Cellulose is a natural polymer. It is a polymer of glucose. Some other natural polymers are protein, silk, nucleic acid, rubber, polysaccharides.

21. Glycogen, Cellulose and starch are the polymers of–

(A) Fructose (B) Glucose
(C) Lactose (D) Maltose

Ans. (B) **[SSC CGL 2012]**

Exp: Glycogen, cellulose and starch are the polymers of glucose. All are polysaccharides.

22. Which of the following element is used for vulcanisation of rubber?

(A) Sulphur (B) Bromine
(C) Silicon (D) Phosphorous

Ans. (A)

Exp: Sulphur element is used for vulcanization of the rubber. On vulcanisation, sulphur forms cross links at the reactive sites of double bonds and thus the rubber gets stiffened. 5% of sulphur is used for manufacturing of rubber tyres.

23. The process of heating of Rubber with sulphur to increase its quality is known as–

(A) Vulcanisation (B) Acceleration
(C) Galvanization (D) Sulphonation

Ans. (A) **[SSC CGL Exam, 2014]**

Exp: The process of heating of rubber with sulphur between 373K to 415K to increase it quality is known as **Vulcanisation**.

24. Natural rubber is a polymer of–

(A) Isoprene (B) Ethylene
(C) Styrene (D) Butadiene

Ans. (A) **[SSC MTS 2011, SSC CGL 2006]**

Exp: Natural rubber is a polymer of Isoprene (2- methyl - 1, 3- butadiene). All the double bonds in rubber are cis, hence natural rubber is cis-polyisoprene. Main source of rubber is *Hevea brasiliensis* tree.

25. Bakelite is a polymer of Phenol and

(A) Formaldehyde (B) Acetaldehyde
(C) Benzaldehyde (D) Cinnamaldehyde

Ans. (A) **[SSC Steno 2011]**

Exp: Bakelite are polymers of phenol and formaldehyde. It is a cross linked polymer. It is used for making combs electrical switches, handles of various utensils etc.

26. Which one of the following is a synthetic polymer?

(A) Silk (B) Protein
(C) Polystyrene (D) Starch

Ans. (C) **[SSC LDC Exam, 2005]**

Exp: Polystyrene is a synthetic polymer. It is a polymer of styrene. It is a thermosplastic polymer. It is used for making toys, radio & T.V. cabinets, wrapping material.

27. Which among the following is a petroleum wax?

(A) Honey Wax (B) Paraffin Wax
(C) Jojoba Wax (D) Carnauba Wax

Ans. (B) **[SSC CGL Exam, 2005]**

Exp: Paraffin wax is known as petroleum wax. It is a mixture of higher hydrocarbons. It is obtained from petroleum, coal or oil shale. Honey wax is obtained from honey bee. Carnauba also called Brazil wax and palm wax is obtained from palm leaves.

28. Wax used for making candles is chemically a mixture of–

(A) Aliphatic Hydrocarbons
(B) Aromatic Hydrocarbons
(C) Cyclic Hydrocarbons
(D) Aliphatic and Aromatic Hydrocarbons

Ans. (A) **[SSC Tax Asst. 2008]**

Exp: Wax used for making candles is chemically a mixture of aliphatic hydrocarbons.

29. Petroleum is a Mixture of –

(A) Carbohydrates (B) Carbonates
(C) Hydrocarbons (D) Carbides

Ans. (C) **[SSC CPO 2007]**

Exp: Petroleum is a mixture made up of mostly hydrocarbons. It consists alkanes (37–70%), cycloalkanes (16–64%) and aromatic hydrocarbons (8–15%). Its unpleasent odour is due to sulphur compounds.

30. Which of the following could be used as fuel in propellant of Rockets?

(A) Liquid Hydrogen + Liquid Nitrogen
(B) Liquid Oxygen + Liquid Argon
(C) Liquid Nitrogen + Liquid oxygen
(D) Liquid Hydrogen + Liquid oxygen

Ans. (D) **[SSC CGL 2011]**

Exp: A mixture of liquid hydrogen and liquid oxygen is used as a fuel in rockets.

31. Glycol is added to aviation gasoline because it–

(A) Prevents freezing of petrol
(B) Reduces consumption of petrol
(C) Reduces evaporation of petrol
(D) Increase efficiency of petrol

Ans. (A) **[SSC CGL 2011]**

Exp: Glycol is also called Ethylene Glycol, it is a dihydric alcohol. It is added to aviation gasoline because it prevents freezing of petrol. It can be used as an antifreeze compound in car radiators.

32. Aqueous Hydrolysis of sucrose formed –

(A) Only Lactose (B) Only Glucose
(C) Glucose and Fructose
(D) Glucose and Lactose

Ans. (C) **[SSC MTS 2006]**

Exp: In the presence of enzyme invertase, Sucrose is converted into glucose and fructose by aqueous hydrolysis. Sucrose ($C_{12}H_{22}O_{11}$) is a disaccharide sugar. It is known as sugar of sugarcane.

33. Glucose is a type of –

(A) Pentose Sugar (B) Hexose Sugar
(C) Tetrose Sugar (D) Diose Sugar

Ans. (B) **[SSC CHSL 2014]**

Exp: Glucose is a type of Hexose sugar. Its chemical formula is $C_6H_{12}O_6$.

34. The class of drugs used for the treatment of stress is

or

The drug which lowers anxiety and provide peace

(A) Tranquilizer (B) Diuretics
(C) Pain killer (D) Antihistamine

Ans. (A) **[SSC CGL 2012]**

Exp: Tranquilizers are used for the treatment of stress and mild or even severe mental disease. They form an essential component of sleeping pills.

35. The branch of medicine involving synthetic chemical compounds is–

(A) Allopathic (B) Homeopathy
(C) Unani (D) Ayurveda

Ans. (A) **[SSC CGL 2014]**

Exp: Allopathy is a medical practice which involves the treatment of diseases by using synthetic drug or chemicals.

36. Zinc Phosphide is commonly used as –

(A) Fungicide (B) Herbicide
(C) Rodenticide (D) None of these

Ans. (C) **[SSC Tax Asst 2008]**

Exp: The substance which is used to kill rat is called rodenticide.

Examples:- Zinc phosphide, Thallium sulphate, Sodium monochloroacetate, Sodium fluoroacetate.

37. Which of the following gas is used to destroy the microbes?

(A) Chlorine (B) Oxygen
(C) Hydrogen (D) Neon

Ans. (A) **[SSC Steno 2005]**

Exp: Chlorine in the concentration of 0.2 to 0.4 ppm in aqueous solution is disinfectant. Chlorine destroys the microbes present in water.

38. Substance which are used as a food preservative–

(A) Sodium carbonate (B) Tartaric acid
(C) Acetic acid
(D) Sodium salts of benzoic acids

Ans. (D) **[SSC Tax Asst., MTS 2002, 06 & 08]**

Exp: Food preservatives prevent spoilage of food due to microbial growth. Eg:- Sodium benzoate

39. Which gas is used as a disinfectant in drinking water?

(A) Hydrogen (B) Oxygen
(C) Fluorine (D) Chlorine

Ans. (D) **[SSC CGL 2006]**

Exp: Disinfectant are substances which are applied on the surface of non-living objects to destroy microbes. Chlorine in the concentration of 0.2 to 0.4 ppm in aqueous solution acts as disinfectant. Chlorine destroy the microbes present in water.

40. Match the following–

A. Copper		1.	Fertilizer Sulphate
B. Penicillin		2.	Insecticide
C. Urea		3.	Antifungal
D. Malathion		4.	Antibiotic

	A	B	C	D
(A)	1	2	3	4
(B)	2	4	1	3
(C)	3	4	1	2
(D)	4	3	2	1

Ans. (C) **[SSC CPO 2012]**

Exp: Coppersulphate ($CuSO_4$) – Antifungal
Urea (NH_2CONH_2) – Fertilizer
Penicillin – Antibiotic
Malathion – Insecticide

41. 'Saponification' is a process by which–

(A) Soap is prepared
(B) Sulphur is extracted
(C) Plastic is prepared
(D) Protein is identified.

Ans. (A) **[SSC CHSL 2012]**

Exp: Saponification is the alkaline hydrolysis of the fatty acid esters. Example: The chemical reaction between fatty acid and sodium hydroxide is a saponification reaction.

Triglyceride + Sodium hydroxide → Glycerol + 3 soap molecules.

42. What is the by Product obtained in soap industry?

(A) Caustic soda (B) Glycerol
(C) Caustic Potash (D) Naphthalene

Ans. (B) **[SSC Sec. off. – 2006]**

Exp: NaOH (Sodium Hydroxide) is a white solid crystal. Its aqueous solution is smooth as same as soap. It is also known as caustic soda. It is also used in the manufacturing of soap. Hydrolysis of fatty acids with caustic soda forms soap and glycerol and this process is known as '**Saponification**'.

43. The process involved in the making of soap is–

(A) Saponification (B) Hydrolysis
(C) Polymerization (D) Liquification

Ans. (A) **[SSC CPO 2008]**

Exp: Saponification is the alkaline hydrolysis of the fatty acid esters. Example: The chemical reaction between fatty and sodium hydroxide is a saponification reaction.

Triglyceride + Sodium hydroxide → Glycerol + 3 soap molecules.

44. Glycol is used to manufacture which of the following?

(A) Nylon (B) Artificial silk
(C) Terylene (D) Rubber

Ans. (C) **(SSC CGL 2016)**

Exp: Glycol (Ethylene glycol) and Terephthalic acid form condensation product is called **Terylene or Dacron**.

45. Which of the following is used as non-stick coating for cooking utensils?

(A) Perspex (B) Styrofoam
(C) Polystyrene (D) Teflon

Ans. (D) **(SSC CGL 2016)**

Exp: Teflon or Polytetrafluoro ethylene (PTFE) is prepared by the polymerisation of tetrafluoro ethylene in the presence of benzoyl peroxide. It is used for making non-stick surfaces of cooking pans. At high temperature (573K) it may crack.

46. The antiseptic compound present in Dettol is–

(A) Iodine (B) Cresol
(C) Biothional (D) Enloroxylenol

Ans. (D) **[SSC CGL 2013]**

Exp: Dettol contains the antiseptic compound enloroxylenol. Dettol is a mixture of chloroxylenol and terpineol dissolved in a suitable solvent.

47. $KMnO_4$ can be used as –

(A) Fertilizer (B) Insecticide
(C) Disinfectant (D) Pesticide

Ans. (C) **[SSC CHSL 2010]**

Exp: $KMnO_4$ (Potassium Permanganate) can be used as a disinfectant (germicide).It is used to purify well water. It is commonly known as **Red Medicine or Lal dawa**.

48. Tincture of iodine is a solution of Iodine in –

(A) Potassium iodide (B) Ethyl alcohol
(C) Water (D) Sodium chloride

Ans. (A) **[SSC Tax Asst. 2006]**

Exp: Tincture of iodine or Iodine tincture is an antiseptic. 2 – 7% elemental iodine along with potassium iodide or sodium iodide dissolved in mixture of ethanol & water.

49. Terylene is a condensation polymer of ethylene glycol and which acid?

(A) Benzoic Acid (B) Salicylic acid
(C) Phthalic acid (D) Terephthalic acid

Ans. (D) **(SSC CGL 2016)**

Exp: Terylene is also known as Dacron and it is the condensation product of ethylene glycol and terephthalic Acid. Terylene is used in the manufacture of terycot, terywool & terysilk, magnetic recording tapes, conveyer belts, aprons for industrial workers.

50. Which of the following fibres is considered as the strongest natural fibre?

(A) Cotton (B) Jute
(C) Wool (D) Silk

Ans. (D) **(SSC CGL 2016)**

Exp: Silk is natural protein fibre, made by silkworm. It is one of the strongest natural fibres. The rearing of silkworm is known as **Sericulture**.

51. Which of the following is a natural polymer?

(A) Bakelite (B) Nylon
(C) Polythene (D) Starch

Ans. (D) **(SSC CGL 2016)**

Exp: Natural polymers occur in nature mostly in plants and animals. Examples – Starch, cellulose, proteins natural rubber, nucleic acids etc.

52. Synthetic detergents are prepared from

(A) Potassium salts of higher fatty-acids
(B) Sodium salts of higher fatty-acids
(C) Hydrocarbons of petroleum
(D) Glycerides

Ans. (C) **(SSC CGL 2016)**

Exp: Synthetic detergents are normally prepared from petrochemicals, fats and oils.

53. Which of the following gas is used in bulb?

(A) Hydrogen (B) Carbon-dioxide
(C) Carbon monoxide (D) Argon

Ans. (D) **(SSC CPO 2017)**

Exp: Argon gas is used in bulbs because argon is an inert gas & doesn't react even at higher temperatures.

54. Chlorine gas is a major component of which of the following?

(A) Water
(B) Tear gas
(C) Liquified Petroleum Gas
(D) Gobar gas

Ans. (B) **(SSC CPO 2017)**

Exp: Chemical formula of Tear gas is $C_{10}H_5ClN_2$. So, chlorine is component of tear gas LPG is a mixture of flammable hydrocarbon gases including propane & butane while Gobar gas mainly consists of methane.

55. In which of the following silicon is not used?

(A) Solar Panels (B) IC manufacturing
(C) Optical glass (D) Ink pen

Ans. (D) **(SSC CPO 2017)**

Exp: Silicon is used in solar panels, optical glass & IC chips as silicon is a semi-conductor. But in ink, silicon is not present.

56. Which among the following is used in fire extinguisher?

I. Carbon dioxide
II. Oxygen
III. Sulphur dioxide

(A) Only I (B) Only II
(C) Only III (D) All options are correct.

Ans. (A) **(SSC CPO 2017)**

Exp: Fire Extinguishers are the devices which are used to control fire. From the given options, Carbon dioxide is used in fire extinguisher.

57. Bleaching action of Chlorine is due to which reaction?

(A) Oxidation (B) Hydrolysis
(C) Redox (D) Decomposition

Ans. (A) **(SSC CPO 2017)**

Exp: Chlorine on reaction with water releases nascent Oxygen.

$Cl_2 + H_2O \rightarrow HCl + HOCl$

$HOCl \rightarrow HCl + [O]$

This nascent oxygen reacts with coloured matter to make it colourless.

Coloured matter + [O] $\rightarrow$ Colourless matter + H_2O.

Thus, chlorine has its bleaching action due to Oxidation phenomenon.

58. Which of the following is used for ripening of fruits?

(A) Methylene (B) Ethylene
(C) Acetone (D) Methane

Ans. (B) **(SSC CPO 2017)**

Exp: Ethylene is a gaseous plant hormone. It is used for ripening of fruits. Ethylene is also called as ethene ($CH_2 = CH_2$).

59. What is the major component of Gobar Gas?

(A) Propane (B) Butane

(C) Methane (D) Ethylene

Ans. (C) **(SSC CPO 2017)**

Exp: Biogas is produced from cattle dung in a biogas plant i.e. commonly known as **Gobar Gas**. Gobar gas mainly consists of Methane (CH_4).

60. Rock Salt contains which mineral?

(A) Gypsum (B) Sodium

(C) Potassium (D) Magnesium

Ans. (B) **(SSC CPO 2017)**

Exp: Rock salt is Sodium Chloride (NaCl). So, Rock salt contains sodium mineral.

61. Which of the following elements are commonly found in most fertilizers?

(A) Sodium, Potassium, Phosphorous

(B) Sodium, Potassium, Calcium

(C) Nitrogen, Potassium, Phosphorous

(D) Nitrogen, Potassium, Calcium

Ans. (C) **(SSC CPO 2017)**

Exp: Fertilizers are the substance which are added to soil to improve its nutrient quality (fertility).

Nitrogen (N), Potassium (K) & Phosphorous (P) are the main three constituents of fertilizers. Therefore, they are called as **NPK fertilizers**.

62. What is a Vermicompost?

(A) Organic fertilizer (B) Inorganic fertilizer

(C) Toxic Substance (D) Type of soil

Ans. (A) **(SSC CPO 2017)**

Exp: Formation of compost by using earth worms (Red Earth worms) is called as **Vermicompost**. It is a organic Manure or organic fertilizer.

63. What is dry ice?

(A) Solid Carbon dioxide (B) Solid Nitrogen dioxide

(C) Solid Sulphur dioxide (D) Solid Water

Ans. (A) **(SSC CGL 2017)**

Exp: Dry ice is solid CO_2. At atmospheric pressure solid CO_2 is converted directly into vapour without a liquid phase

64. PET is a very familiar form of _____. It is used for making bottles.

(A) Nylon (B) Acrylic

(C) Polyester (D) Rayon

Ans. (C) **(SSC CGL 2017)**

Exp: PET refers to polyethylene terephthalate. It is a thermoplastic polymer. It is a condensation polymer of terephthalic acid & ethylene glycol. PET is used for making bottles, synthetic fibres and coating etc.

65. Which acid is released when an ant bites?

(A) Hydrochloric Acid (B) Formic Acid

(C) Acetic Acid (D) Phosphoric Acid

Ans. (B) **(SSC CGL 2017)**

Exp: Formic acid or Methanoic acid (HCOOH) is released when a red ant bites.

66. Which of the following metal shown by its symbol is generally used for making filaments of bulb?

(A) Fe (B) An (C) Ag (D) W

Ans. (D) **(SSC CGL 2017)**

Exp: Tungsten is generally used for making filaments of bulb because it has very high melting point (3422°C). Symbol of tungsten is W.

67. In which industry Potassium nitrate is used commercially?

(A) Glass manufacturing

(B) Electroplating

(C) Fire cracker manufacturing

(D) Leather industry

Ans. (C) **(SSC CGL 2017)**

Exp: Potassium nitrate is used for manufacturing the fire crackers because it is a good oxidant. It helps in oxidation of fire work mixture.

68. Which among the following is used to treat Indigestion?

(A) Antacid (B) Antiseptic

(C) Analgesic (D) Antibiotic

Ans. (A) **(SSC CGL 2017)**

Exp: Antacids are basic substances which neutralise the stomach acidity on ingestion. They are used to treat Indigestion.

eg:- $Mg(OH)_2$

69. Which base is present in soap?

(A) Sodium hydroxide (B) Silicon dioxide

(C) Calcium hydroxide (D) Ammonium hydroxide

Ans. (A) **(SSC CGL 2017)**

Exp: Sodium hydroxide is found in soaps. Soaps are formed by reacting a base with fatty acid.

Sodium hydroxide + Glycerol Tristearate → Sodium stearate (soap) + Glycerol

70. Which fibre is also called as artificial silk?

(A) Nylon (B) Rayon

(C) Polyester (D) Acrylic

Ans. (B) **(SSC CGL 2017)**

Exp: Rayon is also known as Artificial silk because it resembles silk. Rayon is a synthetic fibre. It is cheaper than silk. Rayon is used for making fibres, clothes etc.

71. Fire extinguishers emit which gas?

(A) Carbon monoxide (B) Chlorine

(C) Carbon dioxide (D) Nitrogen

Ans. (C) **(SSC CGL 2017)**

Exp: Fire extinguishers are used to stop the fire. From the given options, fire extinguishers contain CO_2, i.e. heavier than oxygen which stops fire.

72. _____ is obtained by evaporation of sea.

(A) Sugar (B) Iron

(C) Salt (D) Steel

Ans. (C) **(SSC CGL 2017)**

Exp: Salt is obtained by evaporation of seawater as seawater contains sodium chloride, magnesium chloride etc.

73. The rubbing surface of a matchbox has powdered glass and a little red _____.

(A) Antimony (B) Arsenic

(C) Silicon (D) Phosphorous

Ans. (D) **(SSC CGL 2017)**

Exp: Friction between match box surface & match stick lights up fire. Tip of match has potassium chlorate (an oxidant), sulphur, starch & glue. Striking surface has red phosphorous.

74. A _____ thread is actually stronger than a steel wire.

(A) Wool (B) Cotton

(C) Jute (D) Nylon

Ans. (D) **(SSC CGL 2017)**

Exp: A nylon thread is actually stronger than a steel wire because nylon thread can support more weight compared to steel wire of same thickness.

75. Fabric made from_____ does not get wrinkled easily.

(A) Cotton (B) Flax

(C) Silk (D) Polyester

Ans. (D) **(SSC CGL 2017)**

Exp: Fabric made from polyester does not get wrinkled easily because it has high wrinkle resistant.

Chapter-11

Environmental Pollution

1. Ozone hole is caused by chemicals like _____.

(A) Nitrogen oxide (B) Hydrogen sulphide
(C) Chlorofluoro carbon (D) Carbon monoxide

Ans. (C) **(SSC CHSL 2016)**

Exp: Chlorofluorocarbon and nitric oxide have been found to be the most responsible for depletion of ozone and creating ozone hole. Ozone hole was discovered in 1984 by British Antarctic survey scientist, Joseph Farman, Brain Gardiner and Jonathan shanklin.

2. The poisonous gas accidentally released in Bhopal Gas Tragedy is

(A) Methane (B) Nitrous Oxide
(C) Methyl Isocyanate (D) Cyanogen

Ans. (C) **(SSC CHSL 2016)**

Exp: Bhopal gas tragedy was caused by (MIC) methyl isocyanate (CH_3NCO) on december 2, 1984 in Bhopal (M.P) in the Union Carbide factory. MIC is used for manufacturing the insecticide, Carbaryl.

3. The Great Smog of 1952 was a severe air-pollution event which affected _____.

(A) Paris (B) London
(C) New York (D) Delhi

Ans.(B) **(SSC CHSL 2016)**

Exp: The great smog of 1952 was a severe air pollution event which affected London.

London smog or classical smog or sulphurous smog:– This type of smog was first observed in London in December 1952 which killed many people. It is formed due to presence of SO_2 and humidity in the air which combine to form H_2SO_4. It is formed in the early morning hours of winter month.

smoke + fog = smog

4. Which of the following gases is produced due to incomplete combustion of fuel?

(A) Carbon dioxide (B) Carbon monoxide
(C) Methane (D) Ethane

Ans. (B) **(SSC CHSL 2016)**

Exp: Carbon monoxide is formed by incomplete combustion of carbon and carbon containing fuels.

$2C + O_2 \rightarrow 2CO$

This type of incomplete combustion occurs during burning of petrol or diesel in automobiles therefore CO is always present in automobile exhausts.

5. Which of the following is not a green house gas?

(A) Carbon dioxide (B) Water vapour
(C) Carbon monoxide (D) Nitrous oxide

Ans. (C) **(SSC CHSL 2016)**

Exp: Greenhouse gases are :
Carbon dioxide (CO_2)-60%, Methane (CH_4)-20%
Chlorofluoro carbon (CFC)-14%, Nitrous oxide (N_2O)-6%

6. Haemoglobin has the highest affinity with which of the following?

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

Ans. (C) **(SSC CHSL 2016)**

Exp: Haemoglobin has the highest affinity with CO. CO is able to form a complex with haemoglobin (carboxyh-aemoglobin) which is about 300 times more stable than the oxyhaemoglobin.

7. Which of the following types of water is known to be absolutely free from any impurity?

(A) Mineral Water (B) Distilled Water
(C) Spring Water (D) Boiled Water

Ans. (B) **(SSC CHSL 2016)**

Exp: Distilled water has no impurity. Distillation is a method of water purification.

8. Which rays cause skin damage?

(A) X-rays (B) UV rays
(C) Infrared rays (D) Yellow rays

Ans. (B) **(SSC CHSL 2016)**

Exp: UV rays cause burning or tanning of skin. UV rays damage DNA of skin & cause cancer.

9. Which of the following is a greenhouse gas or a gas which can deplete the ozone layer?

(A) B_2H_6 (B) NF_3
(C) CCl_3F (D) C_6H_6

Ans. (C) **(SSC CHSL 2016)**

Exp: CCl_3F is Freon. Freons are the chlorofluorocarbon (CFCs) or hydrochlorofluorocarbons (HCFCs) compounds. They are used as refrigerants and as aerosol propellants. Freons are responsible for Ozone depletion

10. The Ozone layer is present in which atmospheric layer?

(A) Lithosphere (B) Ionosphere
(C) Stratosphere (D) Biosphere

Ans. (C) **(SSC CHSL 2016)**

Exp: Stratosphere is a second layer of Earth's atmosphere, present above troposphere layer.

11. Which of the following constitutes highest percentage of Green House gases?

(A) Ethane (B) Methane
(C) Carbon dioxide (D) Propane

Ans. (C) **(SSC CHSL 2016)**

Exp: Greenhouse gases are :
Carbon dioxide (CO_2)-60%, Methane (CH_4)-20%
Chlorofluoro carbon (CFC)-14%, Nitrous oxide (N_2O)-6%

12. Which of the following is a greenhouse gas or a gas which can deplete the ozone layer?

(A) Ar (B) HN_3 (C) CO_2 (D) C_4H_6

Ans. (C) **(SSC CHSL 2016)**

Exp: Water vapour CO_2, CH_4, N_2O, Ozone are **Green House Gases** which deplete Ozone layer.

13. Which of the following is a greenhouse gas or a gas, which can deplete the ozone layer?

(A) As (B) Kr (C) C_4H_8 (D) CH_4

Ans. (D) **(SSC CHSL 2016)**

Exp: Water vapour CO_2, CH_4, N_2O, Ozone are **Green House Gases**.

14. Which of the following is a greenhouse gas or a gas which can deplete the ozone layer?

(A) B_2H_6 (B) Ne (C) C_6H_{14} (D) O_3

Ans. (D) **(SSC CHSL 2016)**

Exp: **Exp:** Water vapour CO_2, CH_4, N_2O, Ozone (O_3) are **Green House Gases**.

15. Which of the following is a greenhouse gas or a gas which can deplete the ozone layer?

(A) BCl_3 (B) $Ni(CO)_4$
(C) CH_3OH (D) $CClF_3$

Ans. (D) **(SSC CHSL 2016)**

Exp: $CClF_3$ is Freon. freons are the chlorofluorocarbon (CFCs) or hydrochlorofluorocarbons (HCFCs) compounds. They are used as refrigerants and as aerosol propellants. Freons are responsible for Ozone depletion. Water vapour CO_2, CH_4, N_2O, Ozone are **Green House Gases**.

16. Which of the following is a greenhouse gas or gas which can deplete the ozone layer?

(A) Br_2 (B) OF_2
(C) $CHCl_2F$ (D) CO

Ans. (C) **(SSC CHSL 2016)**

Exp: $CHCl_2F$ is Freon. Freons are the chlorofluorocarbon (CFCs) or hydrochlorofluorocarbons (HCFCs) compounds. They are used as refrigerants and as aerosol propellants. Freons deplete Ozone layer.

17. The common name of dichlorodifluoromethane is _____.

(A) Galena (B) Freon
(C) Gypsum (D) Borax

Ans. (B) **(SSC CHSL 2016)**

Exp: Freons are the chlorofluorocarbon (CFCs) or hydrochlorofluorocarbons (HCFCs) compounds. They are used as refrigerants and as aerosol propellants. Freons deplete Ozone layer.

18. Which of the following is a greenhouse gas or a gas which can deplete the ozone layer?

(A) N_2O (B) AsH_3
(C) N_2 (D) C_5H_{12}

Ans. (A) **(SSC CHSL 2016)**

Exp: Water vapour CO_2, CH_4, N_2O, Ozone are **Green House Gases** which deplete Ozone layer.

19. Air has maximum proportion of which inert gas?

(A) Carbon dioxide (B) Nitrous oxide
(C) Argon (D) Carbon monoxide

Ans. (C) **(SSC CHSL 2016)**

Exp: In the given options, Argon is an inert gas 0.93%. Argon is present in air. CO_2 = 0.04%.

20. Which of the following is a greenhouse gas or a gas which can deplete the ozone layer?

(A) CH_2ClF (B) C_2H_2
(C) PF_5 (D) $COCl_2$

Ans. (A) **(SSC CHSL 2016)**

Exp: CH_2ClF is freon. Freons are the chlorofluorocarbon (CFCs) or hydrochlorofluorocarbons (HCFCs). They are used as refrigerants and as aerosol propellants. Freons are responsible for Ozone depletion

21. Methane an air pollutant is produced _____.

(A) By action of ultraviolet light on nitrogenous compounds.
(B) As a by-product of manufacturing ammonical fertilizers
(C) By burning of coal in insufficient air
(D) By digestion of food by animals

Ans. (D) **(SSC CHSL 2016)**

Exp: Methane (CH_4) is the simplest hydrocarbon. It is released into the air in large quantities by the anaerobic decomposition of organic matter in soil, water and sediments.

$$2CH_2O \xrightarrow{\text{Bacteria}} CH_4 + CO_2$$

Domestic animals contribute a very huge amount of methane into the air.

22. Dissolved oxygen in rivers is close to _____ parts per million.

(A) 125 (B) 25 (C) 5 (D) 0

Ans. (C) **(SSC CHSL 2016)**

Exp: DO in river is 3-5 ppm. (DO) Dissolved oxygen is used to check the pollution level. Greater the DO less will be the pollution.

23. Sulphur dioxide pollution is indicated by an excessive growth of which of the following?

(A) Algal Blooms (B) Lichens
(C) Bryophytes (D) Protozoa

Ans. (B) **(SSC CHSL 2016)**

Exp: Lichens show symbiotic relationship between algae and fungi. If air is very badly polluted with sulphur dioxide there may be no lichens present.

24. What does BOD_5 refer to?

(A) Biochemical Oxygen Demand in 5 days
(B) Biochemical Oxygen Demand in 5 hours
(C) Biochemical Oxygen Demand in 5 minutes
(D) Biochemical Oxygen Demand in 5 Months

Ans. (A) **(SSC CHSL 2016)**

Exp: Determination of BOD of a sample of water requires 20-30 days for the complete decomposition of waste. Therefore usually we determine BOD_5, i.e. the amount of oxygen consumed in 5 days.

Pure water has 3-5 ppm BOD. The untreated municipal sewage has BOD_5 of 100–400 ppm.

25. Release of which among the following is the primary reason for depletion of the ozone layer?

(A) Nitrous oxide (B) Hydrogen dioxide
(C) Chlorofluoro carbon (D) Carbon monoxide

Ans. (C) **(SSC CHSL 2016)**

Exp: Chlorofluoro carbon (CFC) i.e. compounds containing chlorine, fluorine and carbon commonly known as freon. Freons are responsible for Ozone depletion.

26. Which gas contributes most to the Greenhouse effect?

(A) Water vapour (B) Ozone
(C) Oxygen (D) Nitrogen

Ans. (A) **(SSC CHSL 2016)**

Exp: In the given options, only water vapour gas contributes more. But ozone contribution is negligible.

27. Which atmospheric layer contains ozone layer?

(A) Genosphere (B) Zonosphere
(C) Stratosphere (D) Ionosphere

Ans. (C) **(SSC CHSL 2016)**

Exp: In the stratosphere (11–50 km), the oxygen started partially being converted into ozone. Now at an altitude of 25 – 30 km, we have a layer in which the concentration of ozone is about 10ppm. It is called ozone layer.

28. Which of the following gas was leaked in the Bhopal Gas tragedy in December 1984?

(A) Methyl isocyanate (B) Methyl isochlorate
(C) Methyl phosphate (D) Methyl isopropate

Ans. (A) **(SSC CHSL 2016)**

Exp: Methyl isocyanate (CH_3CNO) gas was leaked in the Bhopal gas tragedy in December 1984.

29. What will be the form of Nitrogen in sewage water is completely oxidized?

(A) Nitrite (B) Ammonia
(C) Nitramine (D) Nitrate

Ans. (D) **[SSC MTS 2013]**

Exp: If sewage water is completely oxidized then Nitrogen gets converted into nitrates.

30. Catalytic Converters are generally made from–

(A) Hydrogen (B) Carbon
(C) Transition Metals (D) Alkaline Metals

Ans. (C) **[SSC CGL 2015]**

Exp: Catalytic converters are generally made from transition metals which convert toxic gases to less toxic pollutants.

31. The Gas causes acid rain in an industrial area is–

(A) Sulphur dioxide (B) Methane
(C) Carbon dioxide (D) Carbon monoxide

Ans. (A) **[SSC CHSL 2013]**

Exp: The gas causes acid rain in industrial areas is sulphur dioxide (SO_2).

$$SO_2 \xrightarrow{\text{oxidation}} SO_3$$

$$SO_3 + H_2O \longrightarrow H_2SO_4$$

32. Acid rain in the environment is caused by the higher concentration of –

(A) CO and CO_2 (B) SO_2 and NO_2
(C) Ozone and dust (D) H_2O and CO

Ans. (B) **[SSC FCI 2012]**

Exp: Acid rain in the environment is caused by the higher concentration of SO_2 & NO_2. Both gases react with water to form H_2SO_4 & HNO_3. H_2SO_4 contributed 60–70% and HNO_3 contributes 30–40%. When the pH of rain water falls below 5.6, it becomes acid rain.

33. Air pollution by "Fly Ash" is caused by–

(A) Fertilizer plant
(B) Coal Combustion in thermal power plant
(C) Cement industry (D) Floor Mill

Ans. (C) **[SSC CPO 2012]**

Exp: Portland cement contains 35% of fly ash, which causes air Pollution.

34. Acute Lead poisoning is also known as –

(A) Itai–Itai (B) Plumbism
(C) Neuralgia (D) Byssinosis

Ans. (B) **[SSC CHSL 2010]**

Exp: Disease caused by lead poisoning is known as Plumbism. Abdominal pain, weight loss, delay in development are some symptoms.

35. Maximum permissible concentration of copper in drinking water in mg/L is –

(A) 0.01 (B) 0.05
(C) 1.0 (D) 2.0

Ans. (D) **[SSC CHSL 2011]**

Exp: According to the notification published by WHO 'Guidelines for drinking water quality' in 2011 (4th edition), Maximum permissible concentration of Copper in drinking water is 2.0mg/L

36. Brass gets discoloured in air due to the presence of which gas in air?

(A) Nitrogen (B) Hydrogen sulphide
(C) Oxygen (D) Carbon dioxide

Ans. (B) **[SSC CGL 2013]**

Exp: Copper and Zinc combined to form Brass. Copper reacts with Hydrogen sulphide to form a black coloured compound copper sulphide and as a result of it brass gets discoloured.

37. Which one of the following is the Moto of Pollution controlling programme to reduce the disposal of waste in rivers?

(A) Oxygen consumer (B) Oxygen producer
(C) Carbon producer (D) Sulphur producer

Ans. (A) **[SSC Steno Exam, 2015]**

Exp: The main Moto of pollution controlling programme is to reduce the disposal of oxygen consuming waste in rivers. The pollutant which decreases the amount of oxygen in water is known as **Oxygen consumers**.

38. The main cause of air pollution in big cities is–

(A) Waste water (B) Suspended particles
(C) Combustion of Fossil Fuel
(D) Thermal power Plant

Ans. (B) **[SSC Steno Exam, 2012]**

Exp: Small solid particles and liquid droplets suspended in air are collectively called as Suspended particles (Particulates). Sources of particulates-

(A) Natural sources- Volcanic eruption, grinding, blowing of dust and soil by the wind spraying of salts by seas and oceans etc.
(B) Man made sources - soot, flyash

39. The word 'Brown air' is used for–

(A) Acidic Smoke (B) Industrial Smoke
(C) Photochemical Smog (D) Sulphur Smoke

Ans. (C) **[SSC CGL Exam, 2015]**

Exp: Brown air word is used for photochemical smog Photochemical smog is obtained by the reaction of air pollutant and sunlight. Its main constituent gases are Hydrocarbon, Nitrogen oxide, PAN (Peroxyl acetyl Nitrate).

40. Tajmahal is affected by which of the following?

(A) SO_2 (B) CO
(C) NO (D) CO_2

Ans. (A) **[SSC Steno 2014]**

Exp: Taj Mahal is affected by acid rain which mainly contains H_2SO_4 & HNO_3. SO_2 & NO_2 react with rain water to form H_2SO_4 & HNO_3 respectively.

41. Automobile exhausted in the harmful compound–

(A) Carbon dioxide (B) Carbon monoxide
(C) Smoke (D) All of these

Ans. (D) **[SSC Steno Exam, 2014]**

Exp: Automobile exhausts harmful compounds such as carbon dioxide, carbon monoxide, smoke, Nitrogen oxide, sulphur dioxide etc.

42. Amount of sulphur dioxide can be reduced by the use of–

(A) More efficient car engine
(B) By using catalytic convertor in industry.
(C) By using static electricity in chimneys of factories to attract it.
(D) Fuel containing low sulphur

Ans. (D) **[SSC MTS 2013]**

Exp: Sulphur dioxide pollution can be controlled in a number of ways as follows–

(i) By using Low sulphur or sulphur free fuels like natural gas.
(ii) By removing sulphur from the fuel (eg:- from fuel oil) before burning.
(iii) By making sulphur-free Liquified gaseous fuel from coal.

43. Burning Pyrites ore gives out–

(A) Carbon dioxide gas (B) Sulphur dioxide gas
(C) Nitrogen dioxide gas (D) Nitric oxide gas

Ans. (B) **[SSC Steno 2011, SSC CHSL 2010]**

Exp: Pyrites ores are sulphide of metals. Burning of pyrite ore gives out sulphur dixoide gas. The SO_2 produced, is ultilised for the manufacturing of H_2SO_4.
e.g. Iron pyrite (FeS_2), Copper pyrites ($CuFeS_2$).

44. Disadvantage of using DDT as pesticide is –

(A) It becomes ineffective after some time
(B) Not easily degradable in nature
(C) Less effective than others
(D) Its High cost

Ans. (B) **[SSC CHSL 2012]**

Exp: As a pesticide DDT does not decompose easily in nature while its concentration goes on increasing from one level to another in a food chain is known as **Bio Magnification.**

45. Example of macro pollutants are –

(A) CH_4 (Methane) (B) Cl_2 (Chlorine)
(C) CFCs (Chlrorofluoro carbons)
(D) PAN (Peroxyl acetyl Nitrate)

Ans. (D) **[SSC Steno 2012]**

Exp: PAN (Peroxyl acetyl Nitrate) is a macro pollutant. It is a pollutant present in photochemical smog.

46. What is Peroxyl?

(A) Acidic acid (B) Macro pollutant
(C) Vitamin (D) Plant hormone

Ans. (B) **[SSC CGL Exam, 2015]**

Exp: PAN (Peroxyl acetyl Nitrate) is a macro pollutant. It is a powerful eye & respiratory irritant present in photo chemical smog.

47. Photochemical smog is the resultant of reaction among–

(A) Higher concentration of NO_2, O_3, CO in the evening

(B) CO, CO_2, NO_2 at Low temperature

(C) CO, O_2 and peroxyl acetyl Nitrate is the presence of sunlight

(D) NO_2, O_3 and Peroxyl Nitrate in the sunlight.

Ans. (D) **[SSC CGL Exam, 2015]**

Exp: Photochemical smog is the result of reaction of (NO_2) Nitrogen dioxide and vapourised compounds in the presence of sunlight. Following conditions are necessary for its formation.

1. Sunlight
2. Nitrogen dioxide
3. Temperature greater than 18°C

By the result of this reaction toxic constituent peroxylacetyl Nitrate is produced.

48. The toxic gas present in the smoke exhausted by cars is–

(A) CO (B) CO_2 (C) C_2H_4 (D) CH_4

Ans. (A) **[SSC MTS 2014]**

Exp: Car and other automobiles exhaust mainly contains CO, lead and SO_2 and out of these CO is the most toxic.

49. Pollutant from Motor car exhaust that causes mental disease is –

(A) Lead (B) NO_2

(C) SO_2 (D) Hg

Ans. (A) **[SSC CHSL 2010]**

Exp: Lead is the pollutant exhausted from motor car that causes mental disease.

50. In which year Chernobyl nuclear power plant of the former USSR had accident that caused escape of radio nuclides into atmosphere?

(A) 1979 (B) 1980 (C) 1984 (D) 1986

Ans. (D) **[SSC CGL 2012]**

Exp: Accident at Chernobyl nuclear power plant occurs on April 26 in 1986.

51. Taj Mahal is said to be suffering from "Marble Cancer". What is marble Cancer?

(A) Smokes Filling the Taj Mahal from adjoining industries.

(B) Acidic rain which corrodes Marble

(C) Large no of fungus in Taj Mahal Marbles

(D) Yellowing of marble on account of soot particles.

Ans. (B)

Exp: The marble cancer refers to the corrosion of building and statues made up of marbles by the action of sulphuric acid and Nitric acid. Acid rain is the cause of 'Marble Cancer' of Taj Mahal. Marble cancer causes disintegration and yellowing of the building or statue. Taj Mahal is loosing its white shine because of marble cancer.

52. Which one of the following gas is not a part of atmosphere?

(A) Nitrogen (B) Helium

(C) Chlorine (D) None of these

Ans. (C) **[SSC CPO Exam, 2008]**

Exp: Nitrogen is present in 78%, oxygen is 21% and carbon dioxide, water vapour and Noble gases are 1%. Chlorine is not the part of atmosphere.

53. Freon is used as a –

(A) Insecticide (B) Herbicide

(C) Fungicide (D) Coolant

Ans. (D) **[SSC MTS 2006]**

Exp: The chlorofluoro carbon compounds of methane and ethane are collectively known as **freon**. They are used as refrigerants and as aerosol propellants. Freons are responsible for Ozone depletion. Freon -12 (CCl_2F_2) is one of the most common freon in industrial use.

54. Black Lung disease occurs in people working in –

(A) Electroplating industry

(B) Organic solvent industry

(C) Paint Manufacturing industry

(D) Coal mines

Ans. (D) **[SSC CHSL 2011]**

Exp: Black lung disease is caused by long exposure to coal dust. It is common in coal miners and others who works with in coal industry.

55. Micro organism which monitor the air pollution–

(A) Bacteria (B) Lichen

(C) Alage (D) Fungi

Ans. (B) **[SSC CHSL Exam, 2013]**

Exp: Lichens are indicator of air pollution mainly SO_2 gas.

A lichen consists of an Alga and a fungus living together in a symbiotic relationship.

The Alga by photsynthesis produce food while the fungus protect the Alga and provides water and minerals to it. The fungus forms the main body of lichens.

56. Main Gaseous pollutant of thermal power plants is–

(A) H_2S (B) NH_3

(C) NO_2 (D) SO_2

Ans. (D) **[SSC Tax Asst. Exam,2009]**

Exp: Combustion of sulphur containing coal and oil fuel in the thermal power plant produce SO_2 gas.

SO_2 at a concentration of 5ppm causes throat and eye irritation resulting into cough tears and redness in eyes. It causes breath-lessness and affects larynx. (Voice box).

57. Acid rain destroy vegetation because it contains–

(A) Nitric Acid (B) Ozone

(C) Carbon Monoxide (D) Sulphuric acid

Ans. (D) **[SSC Tax Asst. 2006]**

Exp: Acid rain contains about 60-70% H_2SO_4 & 30-40% HNO_3.

58. A hard fluid present in smog which causes irritation in eyes is–

(A) Nitric Acid (B) Sulphur dioxide

(C) Peroxylacetyl Nitrate (D) Carbon dioxide

Ans. (C) **[SSC CHSL 2010]**

Exp: Nitrous oxide reacts with volatile organic compounds (except methane) to form a Peroxylacetyl nitrates or PAN a third component of smog. PAN makes smog more irritating to eyes.

59. Acid rain is caused by–

(A) NO_2 and O_2 (B) CO and CO_2

(C) SO_2 and O_2 (D) SO_2 and NO_2

Ans. (D) **[SSC CGL 2014]**

OR

Acid rain is caused due to pollution of atmosphere by–

(A) Oxides of carbon and Nitrogen

(B) Oxides of Nitrogen and Phosphorous

(C) Oxides of Nitrogen and Sulphur

(D) None of these

Ans. (C) **[SSC CPO 2015]**

Exp: Acid rain is caused by the gaseous pollutant SO_2 and NO_2 present in atmosphere. In air, Sulphur dioxide (SO_2) react with water (H_2O) to form sulphuric acid (H_2SO_4) and Nitrogen dioxide (NO_2) react with water to form Nitric acid (HNO_3). Acid rain has pH less than 5.6.

60. Photochemical smog occurs in warm, dry and sunny climate. One of the following is not amongst the components of photochemical smog. Identify it

(A) NO_2 (B) O_3

(C) SO_2

(D) Unsaturated hydrocarbons

Ans. (C)

Exp: It is a mixture of a number of irritation causing compounds like NO_2, O_3, PAN, aldehydes, ketones, hydrocarbons and CO. It is oxidizing in character.

61. Which one of the following gas is most toxic?

Or

Which of the following gas is exhausted by automobiles cause air pollution and Mainly Harmful. **[SSC Tax Asst. 2007]**

(A) Carbon dioxide (B) Carbon monoxide

(C) Sulphur dioxide (D) Chlorine

Ans. (B)

Exp: Carbon monoxide gas is most toxic from the given options. It is produced by incomplete combustion of fuel such as natural gas, coal or wood. Vehicular exhausts are the largest source of carbon monoxide. It accounts for over 50% of the total air pollution. Another source of air pollution is cigarette smoke. It reduces the oxygen carrying capacity of blood.

62. Chief pollution of smoke of cigarette contains–

(A) Carbon monoxide and Dioxin

(B) Carbon monoxide and Nicotine

(C) Carbon monoxide and Benzene

(D) Dioxin and Benzene

Ans. (B) **[SSC Tax Asst. 2008]**

Exp: Carbon monoxide is main air pollutant. Carbon monoxide reduces the oxygen carrying capacity of blood and nicotine is **Carcinogenic**. (Cancer producing substance).

63. Smoke of tobacco is injurious to health because it contains –

(A) Carbon Monoxide (B) Nicotine

(C) Polycyclic Hydro carbon

(D) Methylene

Ans. (B) **[SSC Steno 2010]**

Exp: Smoke of tobacco contains Nicotine. Effect of Nicotine-

(i) Releases adrenaline, increase heart beat rate and blood pressure.

(ii) High concentration of nicotine paralyse nerve cells

(iii) Retards foetal growth in expecting mothers.

64. Producer gas is highly poisonous due to the presence of–

(A) Nitrogen (B) Carbon Monoxide

(C) Hydrogen sulphide (D) Sulphur dioxide

Ans. (B) **[SSC MTS 2014]**

Exp: Producer gas is a mixture of gases mainly nitrogen and carbon monoxide. Due to presence of carbon monoxide producer gas is highly poisonous.

65. Which gas causes suffocation and death when coal is burnt in a closed room?

(A) Ethane (B) Carbon dioxide

(C) Carbon Monoxide (D) Methane

Ans. (C)

Exp: Carbon monoxide is produced due to incomplete combustion of coal. Toxic nature of CO is due to its ability to form a complex carboxy-haemoglobin which is about 300 times more stable than oxyhaemoglobin complex. This prevents haemeoglobin to carry oxygen there by causing suffocation ultimately leading to death.

66. It is not advisable to sleep under the tree at night because trees release–

(A) Carbon dioxide (B) Oxygen

(C) Carbon monoxide (D) Sulphur dioxide

Ans. (A) **[SSC CPO 2012]**

Exp: Plants release CO_2 at night. At night respiration is predominant over photosynthesis because sun light is absent (sun light is necessary for photosynthesis). So, O_2 gas concentration becomes low.

67. Air pollutant contains –

(A) Radiations and gases (B) Only Liquid

(C) Only gases (D) Only radiations

Ans. (A) **[SSC MTS 2014]**

Exp: Air pollutant contains gaseous materials particulate matter and radioactive substances which emit radiations. Gaseous pollutants contain oxides of carbon (CO & CO_2), oxides of nitrogen (NO & NO_2), oxides of sulphur (SO_2 & SO_3), Hydrocarbons, photochemical oxidants (PAN, Ozone, Smog, Aldehydes) etc.

68. Oxides of sulphur present in atmosphere washed down by rain to cause–

(A) Industrial Smog
(B) Depletion of fossil fuel reserves
(C) Eutrophication in Lakes
(D) Lowering of pH of soil

Ans. (D) **[SSC GD 2015]**

Exp: Oxides of sulphur present in atmosphere react with rain water to form Sulphuric Acid. Acids decreases pH value of soil.

69. Green House effect means –

(A) Farming in green Houses for the conservation of energy.
(B) Trapping of solar energy due to carbon dioxide.
(C) Trapping of solar energy by the upper layer of earth.
(D) Increase in temperature due to atmospheric pollution.

Ans. (B) **[SSC MTS 2013]**

Or

Green House Effect means

(A) Pollution in houses in tropical region
(B) Prevention of ultra-violet radiation by the ozone layer
(C) Trapping of solar energy due to atmospheric gases
(D) Damage to green painted buildings

Ans. (C) **(SSC CGL 2016)**

Exp: Green house effect means trapping of solar energy due to atmospheric gases. CO_2, CH_4, CFC, N_2O are green house gases. The warming of earth or global warming due to the trapping of infrared radiations reflected from the earth's surface by CO_2 layer in the atmosphere is called green house effect.

70. Which one of the following groups of gases contributes to Green House effect?

[SSC CHSL 2013]

Or

Green House Gas is– **[SSC MTS 2008]**

Or

Which of the following atmospheric gas is responsible for the Green House effect?

[SSC FCI Exam, 2012]

Or

Which of the following atmospheric gases are green House gases. **[SSC MTS 2013]**

Or

Which of the following affect more 'Green House effect'?

(SSC MTs 2011)

1. Carbon dioxide **2. Nitrogen**
3. Nitrous Oxide **4. Water vapours**
(A) 1,3 and 4 **(B) 1 and 4**
(C) 1 and 3 **(D) 1, 2 and 4**

Ans. (A)

Exp: The relative contribution of different green house gases to global warming are –
Carbon dioxide (CO_2) – 60%
Methane (CH_4)– 20%
Chlorofluoro carbons (CFC) – 14%, Nitrous Oxide (N_2O) – 6%
Water vapour and Ozone contribution is negligible.

71. Which one of the following pollutant is responsible for the ozone Hole?

(A) CO_2 (B) SO_2 (C) CO (D) CFC

Ans. (D) **[SSC CGL 2014]**

Exp: CFC (Chloro Fluorocarbon) is responsible for the Ozone Hole.

72. Which one of the following metal highly pollute the water?

(A) Arsenic (B) Lead
(C) Magnesium (D) Potassium

Ans. (A) **[SSC LDC 2005]**

Exp: Arsenic in compound state is found at most of the places over earth. In the vapours of volcano, ocean and in many mineral water. It is responsible for the high pollution of water.

73. Phenolics as Pollutant can be removed from waste water by use of–

(A) Ion exchange method
(B) Reverse osmosis method
(C) Electrolytic decomposition technique
(D) Polymeric adsorbents

Ans. (A) **[SSC CGL 2012]**

Exp: Phenolics as pollutant is removed from waste water by Ion exchange method. Ion exchange method is also used in separation of metals, catalytic processes, medicines, purification of Juice and in the production of sugar.

74. Highly polluting industries comes under the category of–

(A) Orange (B) Red
(C) Yellow (D) Black

Ans. (B) **[SSC CHSL 2012]**

Exp: According to Forest Environment ministry highly polluting industries are categorized in red category.

75. Which of the following Agriculture practices have been primarily responsible for the pollution of our water resources?

1. Use of Live Stock Manure
2. Use of chemical fertilizer
3. Excessive use of chemical pesticides
4. Deforestation

(A) 1 and 2 (B) 1, 2 and 4
(C) 2 and 3 (D) 1, 3 and 4

Ans. (C) **[SSC CHSL 2012]**

Exp: Modern agriculture practices include excessive use of chemical fertilizers and pesticides which pollutes water resources.

76. Which one of the following does not causes any pollution?

(A) Burning of Rubber (B) Burning of petrol
(C) Use of solar energy (D) All of these

Ans. (C) **[SSC CHSL 2012]**

Exp: Solar energy does not cause any pollution, while burning of rubber produces carbon dioxide and sulphur dioxide. Burning of Petrol also produces carbon dioxide, carbon Monoxide, sulphur dioxide etc.

77. BOD value of water indicates the–

(A) Amount of organic debris
(B) Amount of oxygen, used for biochemical oxidation
(C) Amount of oxygen, used for biochemical reduction.
(D) Amount of ozone, used for biochemical oxidation.

Ans. (B) **[SSC FCI Exam, 2012]**

Exp: BOD (Biochemical oxygen demand) indicates the amount of oxygen used for the biochemical oxidation.Greater the value of BOD, higher will be the pollution level.

78. Which of the following can be found as pollutants in the drinking water in some parts of India.

1. Arsenic 2. Orbital
3. Fluoride 4. Formaldehyde
5. Uranium

(A) 2, 4 and 5 (B) 1 and 3
(C) 1, 2, 3, 4 and 5 (D) 1, 3 and 5

Ans. (D) **[SSC CGL 2015]**

Exp: Generally the water we drink contains a lot of chemical impurities. In some parts of India water pollutants are found in drinking water are Arsenic, Fluoride and uranium (in Punjab) etc.

79. Size of suspended particles lies between–

(A) $10^{-2} - 10^{-4}$ A° (B) $10^{-5} - 10^{-7}$ A°
(C) $10^{-8} - 10^{-10}$ A° (D) $10^{-1} - 10^{-2}$ A°

Ans. (B) **[SSC MTS Exam, – 2013]**

Exp: Size of suspended particle Lies between $10^{-5} - 10^{-7}$ A^0

80. Main Constituent of air is–

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

Ans. (A) **[SSC Tax asst. 2007]**

Exp: The composition of air is as follows.
Nitrogen = 78%, Oxygen = 21%, CO_2 = 0.032% and small amount of other gases. Ar = 0.93%.

81. Which atmospheric gas absorbs ultraviolet rays?

(A) Ozone (B) Methane
(C) Nitrogen (D) Helium

Ans. (A) **[SSC MTS 2011]**

Exp: Ozone is an allotrope of oxygen. Ozone molecule contains 3 oxygen atoms (O_3). In the stratosphere, Ozone is being photodissociated and generated by the absorption of short wavelength ultraviolet (UV) radiatons.

$$O_3 \xrightarrow{\text{UV radiations}} O_2 + [O]$$

Absorption of UV radiations by ozone blanket is proportional to its thickness. Thickness of ozone is expressed in Dobson units (DU).

82. Super Sonic Jet causes pollution by thinning of–

(A) O_3 Layer (B) SO_2 Layer
(C) O_2 Layer (D) CO_2 Layer

Ans. (A) **[SSC CGL 2011]**

Exp: Supersonic Jet causes pollution by thinning Layer of O_3 (Ozone). Ozone Layer protects earth from ultraviolet radiation coming direct from sun.

83. Bhopal Gas Tragedy was caused by –

[Steno 2011, Tax Asst. 2006, MTS 2002]

Or

Which pollutant is mainly responsible for the Bhopal Gas tragedy?

[SSC CHSL 2013]

(A) Nitrogen (B) Carbon monoxide
(C) Chlorine (D) Methyl isocyanate

Ans. (D)

Exp: Bhopal gas tragedy was caused by methyl isocyanate (MIC) on december 2 1984 in Bhopal (M.P) in the Union Carbide factory. MIC was used to manufacture the insecticide.

84. Permissible concentration of residual chlorine in drinking water in mg/L is –

(A) 1.0 (B) 5.0 (C) 0.2 (D) 0.05

Ans. (C) **[SSC CHSL 2012]**

Exp: According to WHO, permissible concentration of residual chlorine in drinking water is upto 0.5 mg/L. 0.2 mg/L is the nearest value to 0.5 mg/L in the given options.

85. The most abundant Noble gas in the atmosphere is –

(A) Helium (B) Neon
(C) Argon (D) Krypton

Ans. (C) **[SSC CPO 2008]**

Exp: Except Radon, all Noble gases are present in the atmosphere and out of them argon (0.93%) is most abundant.

86. The largest source of pollution in the world is

(A) Herbicides and insecticides

(B) Automobile exhausts

(C) Sewage and garbage (D) Industrial effluents

Ans. (C) **(SSC CGL 2016)**

Exp: The largest source of pollution in world is sewage and garbage.

Sewage is a type of waste water that is produced from a community of people. It consists mostly of grey water (from showers, sinks, dishwashers and clothes washers) blackwater (water used to flush toilets combined with the human waste), soaps and detergents and toilet paper. While garbage is an undesired or unwanted substance discarded by residents.

87. Acid rain is caused due to pollution of atmosphere by

(A) Oxides of nitrogen and sulphur

(B) Oxides of nitrogen and phosphorous

(C) Oxides of carbon and nitrogen

(D) Oxides of nitrogen and methane

Ans.(A) **(SSC CGL 2016)**

Exp: Acid rain is caused due to pollution of atmosphere by oxides of nitrogen and sulphur. In air, sulphur dioxide (SO_2) reacts with water to form sulphuric acid (H_2SO_4) and Nitrogen dioxide (NO_2) reacts with water to form Nitric acid (HNO_3). Acid rain has pH less than 5.6

88. A level of atmosphere which is composed partly of electrons and positive ions is called

(A) Troposphere (B) Ionosphere

(C) Stratosphere (D) Mesosphere

Ans. (B) **(SSC CGL 2016)**

Exp: Mesosphere and thermosphere (collectively called ionosphere) contain gases (N_2, O_2, O_2^+, NO^+, etc.) in the ionized form. These ions reflect back the radio waves to the earth.

89. The most serious air pollutant causing health hazard is

(A) Sulphur dioxide (B) Carbon dioxide

(C) Ozone (D) Nitrogen oxide

Ans. (A) **(SSC CGL 2016)**

Exp: The most serious air pollution causing health hazard is sulphur dioxide. SO_2 affects the respiratory system particularly lung function, irritates the skin and mucous membrane of the eyes, nose throat and Lungs.

90. Why is Carbon monoxide a pollutant because it

(A) Reacts with haemoglobin

(B) Makes nervous system inactive

(C) Reacts with oxygen

(D) Inhibits glycolysis

Ans. (A) **(SSC CGL 2016)**

Exp: Carbon monoxide is poisonous because it combines with haemoglobin of the RBC about 200 times more easily than does oxygen, to form carboxyhaemoglobin.

$Hb + CO \longrightarrow HbCO$

Carboxyhaemoglobin.

91. Which layer of the earth's atmosphere contains the Ozone layer?

(A) Troposphere (B) Mesosphere

(C) Ionosphere (D) Stratosphere

Ans. (D) **(SSC CGL 2016)**

Exp: In the stratosphere, the oxygen started partially being converted into Ozone. At an altitude of 25–30 km, a layer in which the concentration of ozone is about 10 ppm. It is called Ozone layer. Therefore, this region is also called as **Ozonosphere.**

92. Sullage water is _____

(A) Waste water released from kitchen

(B) Waste water released from toilets

(C) Waste water released from factories

(D) Waste water released from hospitals

Ans. (A) **(SSC CGL 2016)**

Exp: Sullage water is also called gray water. It is a water generated in households sinks, shower and bath without contamination of faecal matter.

93. Chernobyl disaster is the result of pollution by_____.

(A) Oil spill (B) Acid rain

(C) Carbon dioxide (D) Radioactive waste

Ans. (D) **(SSC CGL 2016)**

Exp: Chernobyl disaster occured on 26 April 1986 in graphite moderated reactor at the Chernobyl nuclear power plant. It was a catastrophic nuclear accident.

94. Which of the following caused radioactive pollution along the coast of Kerala?

(A) Plutonium (B) Zinc

(C) Thorium (D) Radium

Ans. (C) **(SSC CGL 2016)**

Exp: Monazite sands are ore of thorium. It is found on the sea-coast of Kerala state in India. So, radio-active pollution occurs due to thorium.

95. Ozone saves the biosphere by absorbing high energy radiations called_____.

(A) Infrared rays (IR) (B) Gamma rays

(C) Ultraviolet rays (UV) (D) X-rays

Ans. (C) **(SSC CGL 2016)**

Exp: Ozone saves the biosphere by absorbing high energy radiations called Ultraviolet rays (UV). Ozone layer acts as shield against UV rays. UV rays damage DNA of skin and cause cancer.

96. One of the best solutions to get rid of non biodegradable waste is

(A) Burning (B) Dumping
(C) Burying (D) Recycling

Ans. (D) **(SSC CGL 2016)**

Exp: Recycling is the best solution to get rid of non biodegradable waste. Recycling is waste minimization strategy in which reusable materials are recovered from a waste material.

97. Ultraviolet radiation in the stratosphere is absorbed by

(A) SO_2 (B) Ozone
(C) Oxygen (D) Argon

Ans. (B) **(SSC CGL 2016)**

Exp: Ultraviolet radiation in the stratosphere is absorbed by Ozone layer.

98. The depletion in Ozone layer is caused by_____.

(A) Nitrous oxide (B) Carbon dioxide
(C) Chlorofluorocarbons (D) Methane

Ans. (C) **(SSC CGL 2016)**

Exp: The depletion of ozone layer is caused by chlorofluoro carbon and Nitric oxide. One chlorine atom can destroy about 1 lakh ozone molecules.

99. The commonly used coolant in refrigerators is

(A) Ammonia (B) Nitrogen
(C) Freon (D) Oxygen

Ans. (C) **(SSC CGL 2016)**

Exp:Chlorofluorocarbons (CFC) i.e, compounds containing carbon, chlorine and Fluorine commonly known as Freons. These are introduced into the atmosphere from aerosol sprays in which they function as propellants and from refrigerating equipment in which they act as coolant.

100. What causes the mottling of the dental enamel ?

(A) High levels of chlorine in water
(B) High levels of nitrate in the water
(C) High levels of fluorides in the water
(D) High levels of calcium in the water

Ans. (C) **(SSC CGL 2016)**

Exp: High level of fluorides (present in drinking water & toothpaste) causes mottling of the Dental Enamel **(Dental fluorosis).** Black, Brown spots appear in mottled teeth. Permissible limit of Fluoride is 1-1.5 ppm or 1-1.5 mg/dm^3.

101. Which of the following is usually not an air-pollutant?

(A) Hydrocarbons (B) Sulphur dioxide
(C) Carbon dioxide (D) Nitrous oxide

Ans. (D) **(SSC CGL 2016)**

Exp: Primary air pollutants are:
(i) Oxides of carbon (CO & CO_2)
(ii) Oxides of Nitrogen (NO & NO_2)
(iii) Oxides of sulphur (SO_2)
(iv) Hydrocarbons (CH_4)
(v) Suspended particulate matter.

102. Which of the following is the treatment of water pollution?

(A) Bag house filter (B) Windrow composting
(C) Venturi scrubber (D) Reverse Osmosis

Ans. (D) **(SSC CGL 2016)**

Exp: The process of movement of solvent through a semipermeable membrane from the solution to the pure solvent by applying external pressure on solution side is called **reverse osmosis.** Reverse osmosis is used for the desalination of sea water for getting fresh drinking water.

103. Besides CO_2, the other green house gas is

(A) CH_4 (B) N_2
(C) Ar (D) O_2

Ans. (A) **(SSC CGL 2016)**

Exp: Greenhouse gases are :
Carbon dioxide (CO_2)-60%, Methane (CH_4)-20%
Chlorofluoro carbon (CFC)-14%, Nitrous oxide (N_2O)-6%

104. The most abundant element in the earth's atmosphere is

(A) Argon (B) Nitrogen
(C) Oxygen (D) Krypton

Ans. (B) **(SSC CGL 2016)**

Exp: Earth atmosphere contains Nitrogen-(78.09%) and Oxygen-(20.95%), Argon-(0.934%) and Carbondioxide-(0.034%).

105. _____ is a byproduct of sewage treatment and can be decomposed to produce bio-gas

(A) Sewage (B) Sludge
(C) Sewer (D) Scum

Ans. (B) **(SSC CGL 2016)**

Exp: Sewage treatment involves three stages. Sludge is a semisolid residue produced in first step during treatment of sewage and waste water.

106. Who coined the Chipko slogan "Ecology is Permanent Economy"?

(A) Chan Prasad Bhatt (B) Sundarlal Bahuguna
(C) Shayam Prasad Bahuguna
(D) Bachni Devi

Ans. (B) **(SSC CGL 2016)**

Exp: Sundarlal Bahuguna coined the Chipko slogan "Ecology is Permanent Economy". The first chipko action took place spontaneously in April 1973 in the village of Mandal in the Upper Alaknanda Valley and over the next five years spread to many districts of the Himalayas in Uttarakhand.

107. Which of the following green house gases has the greatest heat trapping ability?

(A) Chlorofluorocarbon (B) Methane

(C) Carbon dioxide (D) Nitrous oxide

Ans. (A) **(SSC CGL 2016)**

Exp: Chlorofluorocarbon has the greatest heat trapping ability

108. Particulates (< 1 μm size) remaining suspended in air indefinitely and transported by wind currents are called

(A) Mists (B) Fumes

(C) Aerosols (D) Smoke

Ans. (C) **(SSC CGL 2016)**

Exp: Aerosols are colloidal solution of fine solid particles or liquid droplets in air.

eg. Haze, dust, fog etc.

109. The least preferred technique in the disposal of Municipal Solid Waste is

(A) Incineration (B) Composting

(C) Land filling (D) Briquetting

Ans. (D) **(SSC CGL 2016)**

Exp: (i) **Incineration:-** waste treatment which involves burning.

(ii) **Composting:-** Biodegradable garbage is converted into soil rich fertiliser.

(iii) **Landfill:-** Disposal of waste by burial.

(iv) **Briquetting:-** process to convert loose biomass waste like cotton stalks into high density solid blocks which can be further used as fuel

110. The 'solid waste' is also known as

(A) Sedge (B) Toxic waste

(C) Sludge (D) Scrubber

Ans. (C) **(SSC CGL 2016)**

Exp: Sludge is a solid waste and can be produced from wastewater treatment and during synthesis of Biogas.

111. Which of the following is a greenhouse gas or a gas which can deplete the ozone layer?

(A) BF_3 (B) O_2

(C) $CHClF_2$ (D) Cl_2

Ans. (C) **(SSC CHSL 2016)**

Exp: $CHClF_2$ is freon. Freons are the chlorofluorocarbon (CFCs) or hydrochlorofluorocarbons (HCFCs) compounds. They are used as refrigerants and as aerosol propellants. Freons are responsible for Ozone depletion.

112. Which of the following is a greenhouse gas or a gas which can deplete the ozone layer?

(A) BBr_3 (B) NH_3

(C) CH_2N_2 (D) CCl_2F_2

Ans. (D) **(SSC CHSL 2016)**

Exp: CCl_2F_2 is freon. Freons are the chlorofluorocarbon (CFCs) or hydrochlorofluorocarbons (HCFCs) compounds. They are used as refrigerants and as aerosol propellants. Freons are responsible for Ozone depletion.

113. Which of the following primarily causes lead pollution?

(A) CFL Lamp (B) Automobile Industry

(C) Polymer (D) Diesel Engine

Ans. (B) **(SSC CPO 2017)**

Exp: Automobile industry causes lead pollution. In automobile a compound of lead i.e. tetraethyl lead $(C_2H_5)_4Pb$ is used as an antiknocking material. Due to this, lead pollution occurs.

114. What was the main aim of Montreal Protocol?

(A) Protection of Ozone layer

(B) Bio-diversity Conservation

(C) Global Warming (D) Climate Change

Ans. (A) **(SSC CPO 2017)**

Exp: The Montreal Protocol is a global agreement to protect the stratospheric Ozone layer.

115. Supersonic jets cause thinning of which layer?

(A) O_2 layer (B) O_3 layer

(C) CO_2 layer (D) SO_2 layer

Ans. (B) **(SSC CPO 2017)**

Exp: Supersonic jets release nitrogen dioxide which has the potential to destroy significant quantity of Ozone in stratosphere. So, thinning of ozone layer occurs.

116. Which of the following is an air pollutant?

I. Water vapour

II. Carbon dioxide

III. Hydrogen Gas

(A) Only I (B) Only II

(C) Only III (D) Both II and III

Ans. (B) **(SSC CPO 2017)**

Exp: Air pollutants are agents which pollute the air.

e.g: Carbon monoxide, Lead, Nitrogen-oxide, Sulphur dioxide & particulate matter are some air pollutants.

117. Which of the following is a major component of water pollution in Bengal Basin?

(A) Chromium (B) Arsenic

(C) Calcium (D) Potassium

Ans. (B) **(SSC CPO 2017)**

Exp: Arsenic is a major component of water pollution in Bengal Basin due to aeration of arsenopyrites buried in the sediments.

118. Which of the following is/are CORRECT?

(A) SPM - Suspended Particulate Matter

(B) COD - Chemical Oxygen Demand

(C) None of these (D) Both

Ans. (D) **(SSC CPO 2017)**

Exp: SPM - Suspended Particulate Matter

COD - Chemical Oxygen Demand

119. Which of the following primarily produces Nitrogen dioxide leading to air pollution?

(A) CFL Lamp (B) Automobile Industry
(C) Polymer (D) Diesel Engine

Ans. (B) **(SSC CPO 2017)**

Exp: Automobile industry produces the Nitrogen dioxide (NO_2) which is responsible for air pollution.

120. Bleaching liquors are inorganic pollutants produced mainly by which Industry/Industries?

I. Paper and Pulp Industry
II. Iron and Steel Industry
III. Mining Industry

(A) Only I (B) Only II
(C) Only III (D) Both II and III

Ans. (A) **(SSC CPO 2017)**

Exp: Bleaching liquors are inorganic pollutants produced mainly by paper & pulp industry.

121. Which of the following pair is correct?

Pollutants	**Industry**
Bleaching liquor	Paper & Pulp
Cellulose fibres	Pharmaceuticals
Drugs & Antibiotic	Mining

(A) only I (B) only II
(C) only III (D) Both I and II

Ans. (A) **(SSC CPO 2017)**

Exp:

Pollutant		**Industry**
Bleaching liquor	:	Paper & Pulp industry
Cellulose fibres	:	Pulp & Paper industry
Drug & Antiboitic	:	Pharmaceutical industry

122. Cellulose fibres are organic pollutant mainly produced by which Industry/Industries?

I. Mining Industry
II. Soap and detergent Industry
III. Paper and Pulp Industry

(A) Only I (B) Only II
(C) Only III (D) Both II and III

Ans. (C) **(SSC CPO 2017)**

Exp: Cellulose fibres are organic pollutant mainly produced by Paper & Pulp industry. Organic pollutants are those organic compounds which are resistant for degradation by chemical, physical and bio-chemical process. So, they accumulate & pollute wherever they are present.

123. Match the correct pair/pairs:

Pollutant		**Industry**
1. Tertiary ammonium salt	–	Soap Industry
2. Bleaching liquor	–	Paper and pulp Industry
3. Cellulose fibres	–	Pharmaceuticals Industry

(A) Only I (B) Only II
(C) Only III (D) Both I and II

Ans. (D) **(SSC CPO 2017)**

Exp:

Product/Pollutant	**Industry**
Tertiary Ammonium Salts	: Soap Industry
Bleaching Liquor	: Paper & Pulp industry
Cellulose fibres	: Paper & pulp industry

Chapter-12

Physical Chemistry

1. Which among the following is an endothermic reaction?

(A) Respiration (B) Combustion
(C) Sweating (D) Burning of natural gas

Ans. (C) **(SSC CHSL 2016)**

Exp: Endothermic reactions involve absorption of heat. Sweating (Also known as perspiration) occurs to maintain body temperature (thermoregulation).

2. Name the catalyst used in the conversion of milk into curd.

(A) Pepsin (B) Invertase
(C) Lactase (D) Diastase

Ans. (C) **(SSC CHSL 2016)**

Exp: Lactase enzyme works as catalyst in the conversion of milk into curd. Enzymes are known as Biocatalysts.

3. What does a catalyst do in a reaction ?

(A) Changes potential energy of reactants
(B) Changes kinetic energy of reactants
(C) Changes potential energy of products
(D) Changes activation energy

Ans. (D) **(SSC CHSL 2016)**

Exp: A chemical reaction takes place by a reaction path, first converted to activated state and then finally to the products. Catalyst provides an alternative route for the reaction with a lower activation energy.

4. The unit of ionic Product of water (Kw) is–

(A) $Mol^2\ ltr^{-1}$ (B) $Mol^2\ ltr^{-2}$
(C) $Mol^{-1}\ ltr^2$ (D) $Mol^{-1}\ ltr^{-1}$

Ans.(B) **[SSC CHSL 2010]**

Exp: Unit of Concentration is mol/litre. Ionic product of water is represented as–

$Kw = [H^+][OH^-]$

So unit of Ionic product of water will be $mole^2\ litre^{-2}$.

5. Which one of the following has highest value of specific heat?

(A) Glass (B) Copper
(C) Lead (D) Water

Ans. (D) **[SSC DEO 2008]**

Exp: From the given options water has highest value of specific heat. Its value is 1 Cal/g ^{0}C or 4.186 J/g ^{0}C.

6. Which one of the following is known as solution?

(A) Compound (B) Homogeneous mixture
(C) Heterogeneous mixture
(D) Suspension

Ans. (B) **[SSC CGL Exam, 2014]**

Exp: A solution is a homogeneous mixture of two or more substances whose composition can be varied within certain limits.

7. Electrolysis of copper sulphate solution with copper electrodes gives–

(A) Copper at cathode and oxygen at anode
(B) Copper at anode and oxygen at cathode
(C) Copper dissolve itself to give copper at cathode and anode.
(D) Hydrogen at cathode and oxygen at anode

Ans. (A) **[SSC Steno 2011, SSC CHSL 2010]**

Exp: Aqueous solution of copper sulphate contains ion of Cu^{2+}, SO_4^{2-}, H^+, OH^- and Molecules of water. During electrolysis of copper sulphate reduction of Cu^{2+} into Cu occurs at cathode and OH^- ions are oxidized in oxygen at anode.

8. If the equilibrium constant for the system: $H_2+I_2 \rightleftarrows 2HI$ and $2HI \rightleftarrows H_2 + I_2$ are K_1 and K_2 Respectively, the relationship between K_1 and K_2 is–

(A) $K_1 = K_2$ (B) $K_1 = 2K_2$
(C) $K_1 = K_2/2$ (D) $K_1 = 1/K_2$

Ans. (D) **[SSC CHSL Exam, 2014]**

Exp: $H_2+I_2 \rightleftharpoons 2HI$

$$K_1 = \frac{[HI]^2}{[H_2][I_2]} \quad \text{.... (i)}$$

$2HI \rightleftharpoons H_2 + I_2$

$$K_2 = \frac{[H_2][I_2]}{[HI]^2} \quad \text{.... (ii)}$$

from equation (ii) and (ii)

$$K_1 = \frac{1}{K_2}$$

or

$K_1.K_2 = 1$

9. In a rechargeable cell what kind of energy is stored within the cell?

(A) Electric energy (B) Potential energy
(C) Kinetic energy (D) Chemical energy

Ans. (D) **[SSC Sec. off. – 2006]**

Exp: Chemical energy is stored in a rechargeable cell. A device which stores energy (removed as electrical energy in discharging process) is called as Accumulator or battery.

10. Which acid is stored in batteries?

(A) Hydrochloric acid (B) Sulphuric acid
(C) Acetic acid (D) Nitric acid

Ans. (B) **[SSC CHSL Exam, 2011]**

Exp: A 38% solution of sulphric acid is used as an electrolyte in lead storage battery. When the density of H_2SO_4 falls below 1.2 gml^{-1}, the battery needs recharging.

11. Which of the following pairs of Material is commonly used in rechargeable batteries used in Torch Lights, Electric Shaver etc.

(A) Iron and Cadmium
(B) Nickel and Cadmium
(C) Lead and Lead per oxide
(D) Zinc and Carbon

Ans. (B) **[SSC CGL 2005]**

Exp: Rearchargeable batteries can be charged again. Ni-Cd, Li ion batteries are secondary batteries.

12. What happens during the charging of Lead operated battery?

(A) SO_2 is formed
(B) Consumption of Lead Sulphate
(C) Lead is Formed
(D) Consumption of sulphuric acid

Ans. (B) **[SSC MTS 2013]**

Exp: Consumption of lead sulphate ($PbSO_4$) takes place during the charging of lead operated battery. During charging of battery lead is deposited on anode and PbO_2 on the cathode & density of sulphuric acid also Increases.

$$2PbSO_4 + 2H_2O \xrightarrow{\text{Charge}} Pb + PbO_2 + 2H_2SO_4$$

13. Catalyst are those substances–

(A) Which increase rate of reaction
(B) Which decrease rate of reaction
(C) Does not affect the rate of reaction
(D) None of these

Ans. (A) **[SSC CPO Exam, 2006]**

Exp: Catalyst are the subtance which alter the rate of reaction without being consumed in the reaction.

Rate of reaction is defined as the change in any one of the reactant or product per unit time.

14. When H_2 gas is allowed to expand from a region of High pressure to a region of Low pressure the temperature of gas–

(A) Decreases to a small extent
(B) Increases
(C) Does not change (D) Decreases suddenly.

Ans. (B) **[SSC CGL 2012]**

Exp: Joule thomson effect-when a real gas is allowed to expand adiabatically from a region of high pressure to a region of low pressure, it is accompanied by cooling (except for hydrogen and helium).

15. Example of Aerosol is –

(A) Milk (B) River water
(C) Smoke (D) Blood

Ans. (C) **[SSC FCI 2012]**

Exp: Aersols are type of colloid in which solid or liquid is dispersed in gas.

eg. smoke, dust, storm, Haze, mist fog, cloud, insecticide spray.

16. In a reaction of type A + B → C + D one could ensure it, to be a First order reaction by–

(A) Increasing the concentration of a Product
(B) Increasing the concentration of a reactant
(C) Increasing the temperature
(D) Adding a catalyst

Ans. (B) **[SSC CHSL 2015]**

Exp: In a reaction of type A+B → C+D one could ensure it to be a first order reaction by increasing the concentration of reactant.

17. Blood may be purified by–

(A) Dialysis (B) electro-osmosis
(C) coagulation (D) filteration

Ans. (A)

Exp: Dialysis: The process of removing the particles from colloidal solution by diffusion process through suitable membranes.

Note: Blood is a colloidal solution.

18. Isotonic solutions have equal.

(A) Vapour pressure (B) osmotic pressure
(C) boiling point (D) freezing point

Ans. (B)

Exp: The solutions having same osmotic pressure are called isotonic solutions.

Note: 0.91% (m/v) solution of sodium chloride (saline water) is isotonic with fluids inside human Red blood cells (R.B.C). In this solution RBC neither swell nor shrink.

19. Strong electrolytes are those which –

(A) dissolve readily in water
(B) conduct electricity.
(C) dissociate into ions even at high concentration
(D) dissociate into ions at high dilution.

Ans. (C)

Exp: Strong electrolytes are completely ionised (dissociates) in water. In solution they are excellent conductors. eg- HNO_3, HCl, NaOH, KOH etc.

20. Which of the following is not a crystalline solid?

(A) Salt (B) Sugar
(C) Copper sulphate (D) Rubber

Ans. (D) **[SSC LDC 2005]**

Exp: Rubber is not a crystalline solid but it is an amorphous solid.

Examples of Amorphous solid- Rubber, Glass, Plastic, Cement and Paraffin.

Examples of crystalline solid- Quartz, Copper Sulphate, rocksalt, Sugar, Mica and diamonds.

21. The two specific Heats of gases are related by–

(A) CP–CV = R (B) CP–CV = R
(C) CP/CV = R (D) CP+CV = R

Ans. (B) **[SSC CGL 2015]**

Exp: Specific Heat is the amount of Heat required to raise the temperature by 1°C. At a given volume it is used to increase the temperature only. At a given pressure specific Heat at constant pressure is always greater than the specific Heat at constant volume and their relation is expressed as CP – CV = R.

22. What is the value of Gas constant 'R' in erg per degree per mol?

(A) 8.314×10^7 (B) 8.341×10^7
(C) 8.413×10^7 (D) 4.183×10^7

Ans. (A) **[SSC MTS 2013]**

Exp: 8.314×10^7 erg per degree per mol.

23. Enzyme which coagulate the milk into curd–

(A) Rennin (B) Pepsin
(C) Regin (D) Citrate

Ans. (A) **[SSC Steno 2011]**

Exp: Rennin enzyme coagulates the milk into curd.

24. Which one of the following is an Example of gel?

(A) Cheese (B) Milk
(C) Facial cream (D) None of these

Ans. (A) **[SSC Steno 2011]**

Exp: Cheese is an Example of Gel. Gelatin and gelly are Examples of Gel.

25. What changes will happen to a bowl of ice and water kept at exactly zero degree Celsius?

(A) All ice will melt (B) All water will become ice
(C) No change will happen
(D) Only some ice melts

Ans. (C) **[SSC CGL 2010]**

Exp: At 0°C there will be no change in the bowl of ice and water.

26. Water and ice crystal are in equilibrium at 0°C. when pressure is applied to this system–

(A) More of the ice becomes water
(B) No effective change occur
(C) Water changes to vapor
(D) More amount of ice is formed

Ans. (B) **[SSC CPO 2012]**

Exp: On applying pressure when on the system, there is no effect on the ice and water, when both are in equilibrium at 0^0C.

27. Light Scattering take place in–

(A) Colloidal solution (B) Acidic Solution
(C) Basic Solution (D) Electrolytic Solution.

Ans. (A) **[SSC CGL 2013]**

Exp: In a colloidal solution size of particle Lies between 1 nm–1000 nm. These particles causes scattering of Light Scattering of Light can be observed by the Ultra microscope, known as **Tyndall effect**.

28. Muddy water is treated with alum in Purification process–

(A) Coagulation (B) Absorption
(C) Emulsification (D) Adsorption

Ans. (A) **[SSC CGL 2015]**

Exp: By Coagulation process, Muddy water can be converted into clean water. Alum is added to muddy water, then by coagulation, Flocculation and sedimentation we get clean water.

29. Alum is used for the water treatment in the process named–

(A) Coagulation (B) Peptization
(C) Softening (D) Electro osmosis

Ans. (A) **[SSC FCI 2012]**

Exp: Alum is used in the process coagulation. Its chemical name is Potassium aluminate sulphate $[K_2SO_4.Al_2(SO_4)_3.24H_2O]$

30. Which of the following is used to Purify the muddy water?

(A) Common salt (B) Potash alum
(C) Aluminium Powder (D) Bleaching Powder

Ans. (B) **[SSC Sec. off 2006]**

Exp: Potash alum is used for the coagulation of muddy water

31. Suspended colloidal particles in water can be removed by the process of –

(A) Filtration (B) Absorption
(C) Adsorption (D) Coagulation

Ans. (D) **[SSC CHSL 2012]**

Exp: In water treatment, Coagulation occurs when a coagulant is added to water. Here Potash Alum is added to water to remove Sand, Soil and Colloidal impurities. Alum dissociates into K^+, Al^{3+} and SO_4^{2-}. In this Al^{3+} coagulate the negatively charged colloidal impurities.

32. Alum stops bleeding in a minor cut because of–

(A) Salvation (B) Emulsion
(C) Dialysis (D) Coagulation

Ans. (D) **[SSC Tax Asst. 2006]**

Exp: Alum stops bleeding in a minor cut. Its chemical name is potassium aluminum sulphate. It stops bleeding because of coagulation. Blood is a colloid of proteins in water & the K^+, Al^{3+} & SO_4^{2-} ions coagulate them, causing a blood clot.

33. Cloud is a colloidal of –

(A) Air in a dispersion medium of water
(B) Fog in a dispersion medium of water
(C) Mist in a dispersion medium of air
(D) Water drop in a dispersion medium of air.

Ans. (D) **[SSC CGL 2005]**

Exp: Cloud is a colloidal dispersion of water drop in a dispersion medium of air. Cloud consist of small water drops and after some time these drops combined together and condense to form clouds.

34. An Emulsion is a colloid of a –

(A) Gas in a Liquid (B) Liquid in a Liquid
(C) Liquid in a Gas (D) Gas in a Solid

Ans. (B) **[SSC Sec. Off – 2007]**

Exp: Emulsion is a colloid of a Liquid into a Liquid such as milk, Emulsified oil etc.

35. Milk is a –

(A) Emulsion (B) Suspension
(C) Gel (D) Sol

Ans. (A) **[SSC CHSL 2011]**

Exp: An emulsion is a suspension of droplets of one liquid into another liquid. Milk is an emulsion of fat in water. Butter is an emulsion of water in fat. The solute is known as the dispersed phase and the solvent is known as the dispersion medium.

36. A colloidal system in which a Liquid is dispersed in a Liquid is called –

(A) Gel (B) Emulsion
(C) Sol (D) Precipitate

Ans. (B) **[SSC CGL 2013]**

Exp: When a Liquid as disperse phase is mixed in Liquid as dispersion medium then it's known as emulsion eg. Milk.

37. Which of the following is strongest coagulant?

(A) Zinc Chloride (B) Aluminum Chloride
(C) Barium Chloride (D) Magnesium Sulphate

Ans. (B)

Exp: Aluminium chloride is strongest coagulant order of increasing coagulating effect is given as follows-

$Na^+ < Mg^{++} < Al^{+++}$, As ionic charge increases, coagulation power increases.

38. Warming Ammonium chloride with sodium hydrochloride in a test tube is an example of

(A) Open system (B) Closed system
(C) Isobaric system (D) Isothermal system

Ans. (A) **(SSC CGL 2016)**

Exp: Warming ammonium chloride with sodium hydrochloride in a test is an example of open system. A system which can exchange matter as well as energy with the surroundings is called an open system.

39. An eudiometer measures

(A) Atmospheric pressure
(B) Time
(C) Volume of gases (D) Vapour pressure

Ans. (C) **(SSC CGL 2016)**

Exp: An eudiometer was invented by Marsilo Landriani. It is a laboratory device that measures the change in volume of a gas mixture in physical or chemical reaction.

40. Which of the following is not a donor atom?

(A) Phosphorus (B) Antimony
(C) Arsenic (D) Aluminium

Ans. (D) **(SSC CGL 2016)**

Exp: In semiconductors donor or electron rich impurities are those having five valence electrons for example P, As, Sb, Bi etc. while acceptor or electron deficient impurities are those having three valence electrons example Boron (B), Aluminium (Al) or gallium (Ga).

41. Which one of the following non-metals shows allotropy in the liquid state?

(A) Carbon (B) Sulphur
(C) Phosphorous (D) Bromine

Ans. (B) **(SSC CGL 2016)**

Exp: A colloidal sol of sulphur is obtained by bubbling H_2S gas through the solution of bromine water, sulphurdioxide etc. $H_2S + Br_2 \rightarrow 2HBr + S$ (sol)

$2H_2S + SO_2 \rightarrow 2H_2O + 3S$ (sol)

42. The absolute zero is a temperature at which _____

(A) molecular motion in a gas would cease
(B) water freezes
(C) all gases become liquid
(D) all gases become solid

Ans. (A) **(SSC CGL 2016)**

Exp: Absolute zero is the lowest possible temperature at which particles are completely at rest. Zero degree celsius = –273.15 Kelvin.

43. An emulsion is a colloidal solution of

(A) Liquid in liquid (B) Solid in liquid
(C) Gas in solid (D) Solid in Solid

Ans. (A) **(SSC CGL 2016)**

Exp: An emulsion is a colloidal solution of liquid in liquild. eg. Milk, butter, cold cream, vanishing cream etc.

Note: Milk is an emulsion of soluble fats in water.

44. Which among the following is an example of solid sol?

(A) Milk of magnesia (B) Foam
(C) Coloured gemstones (D) Rubber

Ans. (C) **(SSC CGL 2017)**

Exp: Solid sols are colloidal solution in which solid particles are dispersed in solid dispersion medium.

eg:- Coloured gemstones like ruby.

Foam is also a colloidal solution in which a gas is dispersed in liquid medium.

eg:- Shaving cream.

45. Which among the following is not an example of emulsion?

(A) Chocolate milk (B) Butter

(C) Whipped Cream (D) Curd

Ans. (D) **(SSC CGL 2017)**

Exp: Emulsions are colloidal solutions in which liquid is dispersed into liquid dispersion medium. eg:- Butter, Chocolate - Milk & Whipped cream.

46. What is the process of conversion of solid state directly to gaseous state called?

(A) Evaporation (B) Condensation

(C) Sublimation (D) Distillation

Ans. (C) **(SSC CGL 2017)**

Exp: Sublimation is a process in which solid is directly converted into vapour form without going in liquid phase. The substances which show sublimation process, are called as **sublimatory substance** or **sublime.**

eg:- Iodine, Naphthalene & Camphor etc.

47. Fog, clouds, mist are examples of _____.

(A) Aerosol (B) Solid sol

(C) Foam (D) Gel

Ans. (A) **(SSC CGL 2017)**

Exp: Aerosol is a colloid of fine solid particles or liquid droplets in air.

eg: Fog, cloud, mist.

Solid Sol:- It is a colloidal solution in which solid is dispersed in solid dispersion medium eg:- Gemstones like Ruby.

Foam:- It is colloidal solution of gas in a liquid or solid.
eg: Sponge

Gel:- It is colloidal solution of solid dispersed in a liquid or semi-rigid solid. eg:- Gelatin.

Chapter-13

Miscellaneous

1. Gun Powder is a Mixture of–

(A) Sand and TNT (B) TNT and Charcoal
(C) Nitrate, Sulphur and Charcoal
(D) Sulphur, Sand and Charcoal

Ans. (C) **[SSC CGL 2008]**

Exp: Gunpowder is also known as black powder. It is the earliest known chemical explosive. It is a mixture of sulphur, charcoal, and potassium nitrate (saltpeter). The sulphur and charcoal act as fuels, and the saltpeter is an oxidizer.

2. Which of the following mixture cause the explosion of TNT (Trinitrotoluene)

(A) Ammonium Chloride (B) Ammonium Nitrate
(C) Ammonium Sulphate (D) Ammonium Nitrite

Ans. (B) **[SSC MTS 2006]**

Exp: Mixture of TNT and Ammonium Nitrate forms a highly explosive product is known as Amatol.

3. Ammonal is a mixture of–

(A) Aluminium powder and Ammonium nitrate
(B) Aluminium powder and Ammonium chloride
(C) Aluminium powder and Ammonium sulphate
(D) Aluminium powder and Potassium Nitrate.

Ans. (A) **[SSC CPO Exam, 2008]**

Exp: Ammonal is a mixture of Aluminium powder and Ammonium nitrate. Aluminium powder functions as fuel and ammonium nitrate as an oxidizer.

Note:- Mixture is affected by humidity because ammonium nitrate is highly hygroscopic.

4. Trinitrotoluene is

(A) used to melt metals (B) used to fuse two metals
(C) used as an abrasive (D) used as an explosive

Ans. (D) **(SSC CGL 2016)**

Exp: On prolonged heating of Toluene with concentrated Nitric acid & Sulphuric acid, TNT (2, 4, 6 - TrinitroToluene) is formed. It is used as an explosive.

5. Who discovered cement?

(A) Agassit (B) Albertus Magnus
(C) Joseph Aspdin (D) Jonseen

Ans. (C) **[SSC CGL 2010]**

Exp: Cement is discovered by Joseph Aspdin in 1824. He named his cement Portland

6. Chemical composition of cement is

(A) Limestone and Clay
(B) Limestone, Clay and Gypsum
(C) Limestone and Gypsum
(D) Clay and Gypsum

Ans. (B) **(SSC CGL 2016)**

Exp: Raw materials required for the manufacturing of cement are :

(i) Limestone ($CaCO_3$) which provides lime
(ii) Clay which provides both silica and alumina
(iii) Gypsum ($CaSO_4.2H_2O$) which decreases setting rate of cement

7. Cement is formed by strongly heating a mixture of –

(A) Lime stone and Graphite
(B) Lime Stone and clay
(C) Chalk and Graphite (D) Clay and Graphite

Ans. (B) **[SSC CGL 2011]**

Exp: Cement is a mixture of compounds like silicates of calcium and aluminates, which are formed by calcium oxide, silica, aluminium oxide and iron oxide. For the formation of cement, limestone and clay mixture is heated at a high temperature in furnace. Then, this mixture is grinded in powdered form with addition of Gypsum and thus the final product is formed, known as Portland cement.

8. Cement is a mixture of –

(A) Calcium Silicate and calcium aluminates
(B) Calcium Silicate and Ferrite
(C) Calcium aluminates and calcium Ferrite
(D) Lime Stone and Silicon dioxide.

Ans. (A) **[SSC FCI 2012]**

Exp: Portland cement consists of compounds of lime (calcium oxide, CaO) mixed with silica (silicon dioxide, SiO_2) and alumina (aluminium oxide, Al_2O_3).

9. Limestone is a raw material used by which industry?

(A) Aluminium (B) Fertilizers
(C) Cement (D) Petrochemicals

Ans. (C) **(SSC CGL 2016)**

Exp: Limestone is a raw material used by cement industry. Other constituents of cement are clay and gypsum.

10. The process of setting of cement under water is essentially:

(A) An oxidation process
(B) A reduction process
(C) A double decomposition process
(D) A hydration process.

Ans. (D)

Exp: When water is added to cement, cement starts setting. During the setting of cement, hydration of dicalcium silicate ($2CaO.SiO_3$), tricalcium aluminate ($3CaO.Al_2O_3$) and tetracalcium aluminate ferrite ($4CaO.Al_2O_3.Fe_2O_3$) occurs & colloidal jelly is formed which starts solidifying.

11. Setting of cement is:

(A) An exothermic reaction

(B) An endothermic reaction

(C) Neither exothermic nor endothermic

(D) None

Ans. (A)

Exp: Setting of cement is an exothermic process. Hence, cement structures have to be cooled during setting by sprinkling water.

12. _____decreases the rate of setting of cement.

(A) Alumina (B) Silica

(C) Gypsum (D) Magnesium oxide

Ans. (C) **(SSC CHSL 2016)**

Exp: 2 – 3% of gypsum is added to slow down the process of setting of cement and thereby imparting greater strength to it.

13. The addition of Gypsum to Portland cement helps in–

(A) Increasing the strength of cement

(B) Rapid setting of cement

(C) Preventing rapid setting of cement

(D) Reduction in the cost of cement

Ans. (C) **[SSC CGL 2011]**

Exp: In Portland cement, Gypsum ($CaSO_4.2H_2O$) is added to control the rapid setting of cement.

14. Concrete is a mixture of:

(A) Cement, sand, gravel and water

(B) Cement, lime and water

(C) Cement, sand and water (D) None

Ans. (A)

Exp: Concrete is a mixture of cement, sand, gravel and water. This mixture (i.e. concrete) sets in an extremely hard structure and is used in the construction of floors and roofs.

15. Glass is a –

(A) Super Heated Solid (B) Super Cooled Liquid

(C) Super Cooled Gas (D) Super heated Liquid

Ans. (B) **[SSC CGL 2011, SSC Stenographer 2005]**

or

What is glass?

(A) Super Cooled Liquid (B) Crystalline Solid

(C) Liquid Crystal (D) None of these

Ans. (A) **[SSC MTS 2013, SSC CPO 2011]**

or

Glass is also called

(A) Supercooled liquid (B) Super liquid

(C) Ideal liquid (D) Distilled liquid

Ans. (A) **(SSC CHSL 2016)**

Exp: Glass is a non–crystalline solid. It is also known as Super Cooled Liquid because liquid state glass is converted into solid State and Solid State contains it all properties of Liquid State. Simple Glass is a Solid Solution of Silica, Sodium Silicate and Calcium Silicate. Glass is a super cooled Liquid in the form of a non–crystalline solid so it does not have any crystalline Structure and does not have any fixed melting point.

16. Which one of the following is used for sun glasses?

(A) Crookes glass (B) Pyrex glass

(C) Crystal glass (D) None of the above

Ans. (A)

Exp: Crookes glass contain Cerium Oxide(CeO_2) which sharply absorbs the U.V rays from the sunlight.

17. Which type of Glass is used for making glass reinforced plastic?

(A) Pyrex glass (B) Quartz glass

(C) Flint glass (D) Fibre glass

Ans. (D) **[SSC CGL Exam, 2011]**

Exp: Fibre glass is used for making glass reinforced plastic.

18. Which of the following is responsible for extra strength of Pyrex glass?

(A) Potassium carbonate (B) Borax

(C) Ferric oxide (D) Lead oxide

Ans. (B)

Exp: Borax is responsible for extra strength of Pyrex Glass. Borax is used in the manufacturing of Pyrex Glass. Pyrex glass is introduced by Corning Glass Works Company firstly.

19. Adding which substance gives green colour to glass ?

(A) Calcium Oxide (B) Iron Oxide

(C) Chromium Oxide (D) Manganese Oxide

Ans. (C) **(SSC CHSL 2016)**

Exp: **Compound**		**Colour**
Chromium Oxide	–	Green colour
Manganese dioxide	–	Red
Iron (III) Oxide	–	Brown
Cabalt Oxide	–	Dark blue

20. Adding which substance gives blue colour to glass?

(A) Manganese Oxide (B) Cobalt Oxide

(C) Chromium Oxide (D) Iron Oxide

Ans. (B) **(SSC CHSL 2016)**

Exp: **Compound**		**Colour**
Chromium Oxide	–	Green colour
Manganese dioxide	–	Red
Iron (III) Oxide	–	Brown
Cabalt Oxide	–	Dark blue

21. Which glass is used to make spectacles?

(A) Crookes glass (B) Potash glass

(C) Jena glass (D) Soda glass

Ans. (A) **(SSC CHSL 2016)**

Exp: Crookes glass contains cerium oxide (CeO_2) which sharply absorbs the ultraviolet rays from the sunlight so utilised in making spectacles.

22. _____ is used for making chemical apparatus like beakers, flasks etc.

(A) Potash glass (B) Hard glass

(C) Soda glass (D) Jena glass

Ans. (B) **(SSC CHSL 2016)**

Exp: Hard glass or Potash line glass ($K_2O.CaO.6SiO_2$):– It is also called Boherian glass. It is mixture of potassium and calcium silicates. It is quite resistant to the action of water and acids. It is used in making chemical apparatus which can withstand high temperature.

23. The calorie requirement of the body increases in winter as compared to summer because more calories are necessary to–

(A) Sustain body temperature
(B) Break more proteins
(C) Make more fat in the body
(D) Compensate for falling hair.

Ans. (A) **[SSC CPO 2012]**

Exp: The calories requirement of the body increases in winter as compared to summer because more calories are necessary to sustain body temperature.

24. Pasteurization is a process in which milk is heated at–

(A) At 60°C for 10 min (B) 63°C for 20 min
(C) 63°C for 30 min (D) 72°C for 10 min

Ans. (C) **[SSC Sec off. 2007]**

Exp: Pasteurization of milk requires about 63°C temperature maintained for 30 minutes or 72°C holding for 15 seconds. This process is used to destroy *Mycobacterium tuberculosis* and most of the micro organism found in milk.

25. Combustion is a –

(A) Biological Process (B) Physical Process
(C) Chemical Process
(D) Physical and chemical process

Ans. (C) **[SSC CGL 2014]**

Exp: The change which affect the composition as well as chemical properties of matter and result in the formation of a new substance is called a chemical change. These changes are generally irreversible in nature.

26. Which one of the following fuel causes Least environmental Pollution?

(A) Hydrogen (B) Coal
(C) Diesel (D) Kerosene

Ans. (A) **[SSC CPO 2015]**

Exp: Hydrogen is the least pollution causing fuel. It is used in electro chemical cells and internal combustible engines. It is also used in electric vehicles and electric appliances.

27. Wheat harvesting is an Example of–

(A) Gravity separation
(B) Chromatographic separation
(C) Fractional distillation
(D) Extraction

Ans. (A) **[SSC Steno 2014]**

Exp: Wheat harvesting is an example of gravity separation. It is an industrial method of separating two components from their mixture where the constituent particles have different denstites.

28. Water is not effective in extinguishing a fire caused by petrol because–

(A) The Flame is too hot for water to cool it down
(B) Water and petrol react chemically
(C) Water and petrol are miscible with each other
(D) Water and petrol are immiscible with each other and petrol forms upper Layer continue to burn.

Ans. (D) **[SSC CGL 2008, SSC CHSL 2011]**

Exp: Water is not effective in extinguishing a fire caused by petrol because water and petrol are immiscible with each other and petrol forms upper Layer continue to burn.

29. Diesel oil is preferred for heavy motor vehicles because it–

(A) It is cheaper
(B) Provides less damage to engine
(C) It has more capacity and saves fuel.
(D) Has large scale production from raw material.

Ans. (C) **[SSC MTS 2008]**

Exp: Diesel oil is favourable for Heavy Motor Vehicle because it has more capacity and saves the Fuel.

30. Quality of Petrol is expressed in terms of –

(A) Cetane number (B) Octane number
(C) Gold Number (D) None of these

Ans. (B)

Exp: Quality of petrol is expressed in terms of its octane numbers. It is the measure of ignition quality of fuel. Higher this no. less susceptible is the fuel to knock (explosion caused by its premature buring in the combustion chamber).

31. Which one of the following is main constituent of LPG?

(A) Methane (B) Ethane
(C) Propane (D) Butane

Ans. (D) **[SSC MTS 2011]**

or

In LPG cylinder under the high pressure mainly mixture of Gases filled in Liquid form–

(A) Methane and Ethane (B) Ethane and Hexane
(C) Propane and Butane (D) Hexane and Octane

Ans. (C) **[SSC Tax Asst. 2007]**

or

Kitchen or Cooking Gas is a mixture of –

(A) Methane and Ethylene
(B) Carbon dioxide and Oxygen
(C) Butane and Propane
(D) Carbon Mono oxide and Carbon dioxide

Ans. (C) **[SSC CPO 2010]**

Exp: LPG (Liquefied Petroleum Gas) is a mixture of Butane (C_4H_{10}), Propane (C_3H_8) and Ethane (C_2H_6) but its main constituents are butane & propane. Butane is present in more amount as compared to Propane. A powerful Odorant, ethanethiol (C_2H_5SH; also known as ethyl mercapton) is added so that leaks can be detected easily.

Note: Ethyl mercapton is a sulphur compound.

32. PNG (Piped Natural Gas) is used for –

(A) Mining (B) Welding
(C) Anaesthesia (D) Cooking

Ans. (D) **[SSC CGL 2013]**

Exp: PNG (Piped Natural Gas) is used for cooking. It is a safe fuel. In case of leakage PNG being lighter than air, disperse in the air.
It is one of the cleanest burning fuels. When it burns completely, gives out CO_2 & water vapour.

33. Which among the following causes permanent Hardness of water?

(A) Magnesium Bicarbonate
(B) Sodium Chloride
(C) Calcium Sulphate (D) Calcium bicarbonate

Ans. (C) **[SSC CGL 2014]**

Exp: Calcium Sulphate causes permanent Hardness of water. It cannot be removed by boiling.Permanent Hardness of water is due to the sulphates of Calcium and Magnesium

34. Process of removal of calcium and magnesium is known as –

(A) Filtration (B) Sedimentation
(C) Flocculation (D) Water softening

Ans. (D) **[SSC Tax Asst. 2009]**

Exp: Soft water forms lather with soap but hard water does not. The water which does not form lather with soap is known as Hard water. Hardness of water is due to the presence of impurity of bicarbonates, sulphates, chlorides of Calcium and Magnesium. Process of removal of calcium and Magnesium from water is known as **water softening**.

35. What is the process of removal of Hardness of water?

(A) Purification (B) Filtration
(C) Water softening (D) Refining

Ans. (C) **[SSC MTS 2014]**

Exp: Water Softening is the removal of calcium, magnesium, and certain other metal cations present in hard water. Water softening is usually achieved by using lime or ion-exchange resins.

36. Water gas is a mixture of–

(A) Carbon monoxide and Hydrogen
(B) Carbon monoxide and Nitrogen
(C) Carbon dioxide and Nitrogen
(D) Carbon dioxide and Nitrogen

Ans. (A) **[SSC CHSL 2011]**

Exp: Water gas is a mixture of Carbon monoxide (CO) and Hydrogen (H_2)

37. Water gas constitutes –

(A) CO and H_2O (B) CO_2 and CO
(C) CO and H_2 (D) CO_2 and H_2

Ans. (C) **[SSC CPO Exam, 2015]**

Exp: Water gas is a mixture of Carbon monoxide and Hydrogen. Mixture of CO and H_2 gas is used to synthesise the Methanol it is also known as **Syngas.**

38. Which one of the following refer to white soft that covers the land in some areas during the dry Season?

(A) Erg (B) Usar
(C) Reh (D) Reg

Ans. (C) **[SSC CGL 2015]**

Exp: Reh is related to the soluble sodium salts, which covers the some part of land in dry season. It is used as an detergent in rural backward areas.

39. Detergents used for cleaning clothes and utensils contain–

(A) Bicarbonates (B) Nitrates
(C) Sulphonates (D) Bismuthates

Ans. (C) **[SSC MTS 2006, SSC CGL 2005]**

Exp: A detergent is a special kind of carbon compound, which has cleaning action as same as soap. Detergent can be used in both types of water soft water as well as Hard Water. It mainly Contains sulphonates.

40. What is the unit of relative density?

(A) kg/m (B) kg/m^2
(C) kg/m^3 (D) It has no unit

Ans. (D) **(SSC CHSL 2016)**

Exp: Relative density

$$= \frac{\text{Density of on object}}{\text{Density of water at } 4^\circ C} = \frac{kg/m^3}{kg/m^3}$$. Relative density has no unit.

41. Detergent cleans the surface on the principle of –

(A) Viscosity (B) Surface tension
(C) Elasticity (D) Buoyancy

Ans.(B) **[SSC CPO 2008]**

Exp: Detergent acts on the principle of surface tension. They reduce the surface tension of water.

42. The Process of Ozonation in water treatment is known as–

(A) Ionization (B) Sedimentation
(C) Precipitation (D) Disinfection

Ans. (D) **[SSC CHSL 2012]**

Exp: Ozone is used in the water treatment for disinfection and oxidation of water. First of all Ozone is used for the treatment of water in Holland in 1893 .

43. Water can be separated from the mixture of water-alcohol by the process of:-

(A) Decantation (B) Evaporation
(C) Sublimation (D) Distillation

Ans. (D) **[SSC Tax Asst 2006]**

Exp: Water can be separated by the mixture of Alcohol-Water by the process of Distillation.

44. Which one of the following substances is highly plastic?

(A) Quartz (B) Mica
(C) Granite (D) Clay

Ans. (D) **[SSC Tax Asst 2009]**

Exp: The Objects which regain their original configuration completely after removing the deforming force are known as perfectly Elastic body. And the objects which do not regain their original configuration completely and gets permanently deformed are called perfectly Plastic. In real there is no perfectly plastic and no perfectly elastic body, even all object lies between the border line of perfectly elastic and perfectly plastic. But quartz can be taken as perfectly elastic and wax and clay can be considered as perfectly plastic.

45. Which one of the following is the best fuel in terms of energy released per gram of fuel?

(A) Hydrogen (B) Methane
(C) Ethanol (D) Butane

Ans. (A) **[SSC CHSL 2011]**

Exp: Hydrogen is the best fuel in terms of energy released per gram of fuel.

Fuel	Energy (Joule/gram)
Hydrogen	64186
Methane	55600
Ethanol	30000
Butane (LPG)	49100

46. An egg sinks in soft water but floats in a concentrated solution of salt water because–

(A) Egg absorbs Salt from the solution and expands
(B) Albumin dissolves in Salt Solution and egg becomes lighter
(C) The Density of Salt Solution exceeds the density of eggs
(D) Water has High surface tension.

Ans. (C) **[SSC CGL 2008]**

Exp: An Egg sinks in soft water but floats in a concentrated solution of salt because the density of salt solution exceeds the density of egg.

47. Which one of the following Liquid has least density?

(A) Clean water (B) Salt water
(C) Petrol (D) Mercury

Ans. (C) **[SSC PO 2009]**

Exp: From the given options petrol has least density.

Liquid	Clean water	Salt water	Petrol	Mercury
Density (gm/cm^3)	1.00	1.03	0.71	13.53

48. Impure camphor is purified by the process of:–

(A) Sublimation (B) Filtration
(C) Sedimentation (D) Evaporation

Ans. (A) **[SSC CPO 2006]**

Exp: Sublimation is the process in which solid directly changes into gaseous state, without forming any liquid state. Camphor, Iodine & Naphthalene are **Sublimatory substance**.

49. Which one of the following is not a mixture–

(A) Air (B) LPG
(C) Gasoline (D) Distilled water

Ans. (D) **[SSC DEO 2009]**

Exp: Distilled water is the purest form of water, while air, gasoline and LPG are mixtures.

50. When water itself combines chemically with some element or mineral it is called–

(A) Carbonation (B) Desalination
(C) Oxidation (D) Hydration

Ans.(D) **[SSC CHSL 2012]**

Exp: When water itself combines chemically with some element or mineral then it is known as Hydration.

51. Iodine can be separated from a mixture of Iodine and potassium chloride by–

(A) Filtration (B) Sublimation
(C) Distillation (D) Sedimentation

Ans. (B) **[SSC CHSL 2010]**

Exp: Iodine can be separated from a mixture of Iodine and potassium chloride by the process of sublimation.

52. What is the fourth State of Matter?

(A) Gas (B) Vapour
(C) Plasma (D) Electron

Ans. (C) **[SSC CGL 2005]**

Exp: There are mainly three states of matter solid, Liquid and Gas, but fourth state is known as Plasma (colloidal form).

53. Spirit in contact with body gives cool sensation because it is –

(A) A Liquid (B) A conductor
(C) A transparent (D) Highly volatile

Ans. (D) **[SSC Steno– 2010]**

Exp: Spirit gives cooling sensation in contact with body because it is highly volatile and evaporates the water from body and takes out some heat of the body.

54. A Liquid is said to be boiled when its–

(A) Vapour pressure becomes zero.
(B) Vapour pressure is greater than the surrounding pressure.
(C) Vapour pressure is less than the surrounding pressure.
(D) Vapour pressure is equal to the surrounding pressure.

Ans. (D) **[SSC CPO 2012]**

Exp: A Liquid starts boiling when its vapour pressure becomes equal to the surrounding pressure.

55. Hygroscopic objects are those which instantly absorb–

(A) Hydrogen sulphide (B) Carbon monoxide
(C) Ammonia (D) Water vapours

Ans. (D) **[SSC MTS 2014]**

Exp: Hygroscopic substances are those which absorb humidity (water vapours) from their surrounding instantly such as Sugar, Honey, Ethanol etc.

56. Quantity (Amount) of water vapours present in atmosphere is measured in –

(A) In the form of Humidity
(B) In the form of Smog and Fog

(C) In the form of Nodes
(D) All of these

Ans. (A) **[SSC FCI 2012]**

Exp: Humidity is the amount of water vapours present in the atmosphere.

57. The Physical method Commonly used to purify Sea water is–

(A) Filtration (B) Evaporation
(C) Sedimentation (D) Distillation

Ans. (D) **[SSC Steno 2012]**

Exp: Distillation method is used commonly to purify sea water.

58. Sea water can be purified by the process of–

(A) Distillation (B) Evaporation
(C) Filteration (D) Fractional distillation

Ans. (A) **[SSC CPO 2008]**

Exp: Distillation is a process of separating the component from a liquid mixture by selective evaporation and condensation.

59. Which of the following Statements is not true regarding covalent compounds?

(A) Compounds are generally Liquids and Gases
(B) Melting and Boiling points are low
(C) Slow reaction (D) Fast Reaction.

Ans. (D) **[SSC CPO 2012]**

Exp: Covalent compounds have following Characteristics:-
1. Compounds are generally Liquids and Gases.
2. Compounds have low Melting points and Boiling point
3. Reaction takes place at very slow rate.

60. Nitrolim is prepared by heating:

(A) CaO with N_2 (B) CaO with O_2
(C) CaC_2 with N_2 (D) CaC_2 with O_2

Ans. (C)

Exp: Nitrolim is mixture of Calcium cyanamide ($CaCN_2$) and carbon and is prepared by heating CaC_2 in an atmosphere of N_2.

$$CaC_2 + N_2 \xrightarrow{\Delta} \underbrace{CaCN_2 + C}_{\text{Nitrolim}}$$

61. The lighting bolts in the atmosphere cause the formation of:

(A) NO (B) NH_3
(C) NH_4OH (D) NH_2OH

Ans. (A)

Exp: During the lighting bolts, atmospheric N_2 and O_2 combine together to form NO.

$$\underbrace{N_2 + O_2}_{\text{(From atomosphere)}} \xrightarrow[\text{ting bolts}]{\text{During ligh–}} 2NO$$

62. Which compound of lead is used as anti-knocking agent ?

(A) Lead tetra acetate (B) Basic lead sulphate
(C) Tetraethyl lead (D) Sublimed white lead

Ans. (C)

Exp: CO is produced in the atmosphere due to the incomplete combustion of petrol in the internal engine of automobiles. Thus the automobiles exhaust contains CO which makes the the air polluted. In order to minimise air pollution caused by CO, tetraethyl lead, $(C_2H_5)_4$ Pb is mixed with petrol. This compound provides more time to the petrol for its combustion and hence makes the petrol to burn at slow speed or more completely. Due to the slow burning of petrol, the quantity of CO released by the automobiles is decreased and hence pollution of air caused by CO is also minimised.

63. Hypo is used in photography for:

(A) Developing picture
(B) Picture printing
(C) Colouring picture
(D) The fixation of picture.

Ans. (D)

Exp: Hypo is used in photography as a fixer, i.e. for fixing the picture.

64. Silver salt used in photography is ?

(A) AgCl (B) $AgNO_3$
(C) AgF (D) AgBr

Ans. (D)

Exp: Out of the given salts of Ag, AgBr is the most sensitive compound to light and hence undergoes photo reduction to metallic Ag on exposure of light.

$$2AgBr \xrightarrow{\text{Light(hv)}} 2Ag + Br_2$$

65. Sodium thiosulphate is used in photography because of its:

(A) Oxidising behaviour
(B) Reducing behaviour
(C) Complexing behaviour
(D) Photo chemical behaviour

Ans. (C)

Exp: Because of complexing behaviour of sodium thiosulphate ($Na_2S_2O_3$), this salt dissolves the unreacted AgBr as soluble complex compound, $Na_3[Ag(S_2O_3)_2]$ and thus fixes the image.

$$AgBr + 2Na_2S_2O_3 \rightarrow Na_3[Ag(S_2O_3)_2] + NaBr$$

66. Fluid commonly used for making Bio-gas –

(A) Animal Waste (B) Aquatic Plants
(C) Plant waste (D) None of these

Ans. (A) **[SSC FCI 2012]**

Exp: Biogas can be produced by anaerobic digestion or fermentation of animal waste . It is a renewable source of energy.

67. Gobargas mainly contains –

or

Main constituent of biogas is–

(A) Carbon monoxide (B) Carbon dioxide
(C) Hydrogen sulphide (D) Methane

Ans. (D) **[SSC MTS 1999, CPO 2005][SSC Tax Asst. 2008]**

Exp: The average composition of biogas is:
(i) CH_4 (Methane) = 50 – 60%
(ii) CO_2 = 32 – 40%
(iii) H_2 = 5 – 10%
(iv) N_2 = 2 – 6%
(v) H_2S = small amount constituent
Out of these, the constituent methane (an extremely good fuel) makes biogas as an excellent fuel.

68. Burning of candle is a –
(A) Photo chemical reaction
(B) Physical change
(C) Exothermic reaction
(D) Endothermic reaction

Ans. (C) **[SSC MTS 2014]**

Exp: Burning of Candle is an exothermic reaction. Heat is evolved in Exothermic reactions. It is possible when the energy of reactants is more than the energy of products.

69. Paper is made by–
(A) Cellulose of plants (B) Plants flower
(C) Fruit Juice (D) Proteins of Plants

Ans. (A) **[SSC FCI 2012]**

Exp: Paper is made from raw material called pulp. Cotton fibres are used for paper making. Paper is made by cellulose of plants.

70. Which one of the following element is used in the manufacturing of Fertilizers?
(A) Potassium (B) Aluminium
(C) Lead (D) Fluorine

Ans. (A) **[SSC MTS 2011]**

Exp: Potassium element is used in the manufacturing of fertilizers. Fertilizer having potassium known as **Potash Fertilizers**. eg:- Potassium chloride, Potassium nitrate, Potassium sulphate etc.

71. Select the correct statement.
(A) Mixtures are homogeneous.
(B) In a mixture the components are present in a fixed ratio.
(C) The component of a mixture cannot be separated.
(D) The properties of a mixture are same as that of its component.

Ans. (D) **[SSC CPO 2012]**

Exp: Mixture is a material containing two or more substances either elements or compounds or both in any proportion. A mixture refers to the only physical combination (not chemical combination) of substances in which each substance retains its own chemical identity. There are two types of mixture- Homogenous and Heterogenous. The components of mixtures can be separated by following methods:- Filtration, Sublimation, Distillation, Magnetic separation, Solvent Extraction etc.

72. What is the main source of manufacturing of Nitrogenous Fertilizer?
(A) Ammonia (B) Nitrogen
(C) Nitric acid (D) Nitrogen dioxide

Ans. (A)

Exp: Ammonia is the main source of manufacturing of Nitrogenous fertilizer. It is prepared by **Haber's process.**

$$N_2 + 3H_2 \underset{}{\overset{Fe,Mo}{\rightleftharpoons}} 2NH_3.$$

73. Which among the following does not contain Nitrogen element?
(A) Urea
(B) Super phosphate of Lime
(C) Indian Salt Shora (D) Chile Salt Shora

Ans. (B) **[SSC MTS 2013]**

Exp: Super phosphate of lime $Ca(H_2PO_4)_2$ is a phosphorus fertilizer so it does not contain Nitrogen element while others have Nitrogen element.

74. Too much baked edible oils should not be used repeatedly
(A) The oil vapour can cause indoor pollution
(B) Carcinogenic substances like benzopyrene are produced.
(C) Nutrient value of food is lost
(D) Loss and wastage of oil.

Ans. (B)

Exp: Edible oil contains carcinogenic substances such as Benzopyrene, which can cause cancer. So, edible oils should not be used repeatedly.

75. What happens when a drop of Glycerol is added to $KMnO_4$ spread on paper?
(A) There is violent explosion
(B) There is a crackling sound
(C) The paper ignites
(D) There is no reaction

Ans. (C) **[SSC CGL 2015]**

Exp: When a drop of glycerol is added to $KMnO_4$ spread on paper, and then paper ignites. $KMnO_4$ act as a strong oxidant.

76. Concentration of a material which is Lethal to 50% animal is called as –
(A) LD_{50} (B) LC_{50}
(C) NOAEL (D) ADI

Ans. (B) **[SSC CHSL Exam, 2014]**

Exp: The concentrations of the material (chemicals) in air that kills 50% of the test animals during the observation period, is called as the LC_{50} value.

77. Non-Metal found in Liquid state is –
(A) Bromine (B) Nitrogen
(C) Fluorine (D) Chlorine

Ans. (A) **[SSC CHSL 2013]**

Exp: Bromine is the only non-metal which is found in liquid state at normal temperature.

78. Which of the following is not a chemical change?
(A) Burning of paper
(B) Digestion of food
(C) Conversion of water into steam
(D) Burning of coal

Ans. (C) **[SSC MTS Exam 2014]**

Exp: Conversion of water into steam is a physical change. Because it is a physical change and it is reversible process. So water can be obtained again from this steam.

79. Which of the following contains high content of Lead?

(A) Cool (B) Cooking Gas
(C) High octane fuel (D) Low octane fuel

Ans. (C) **[SSC CPO Exam, 2011]**

Exp: High octane fuel contains high amount of Lead.

80. The effect or response produced by two or more chemicals are less than the sum of the effects or response that the chemical would produce individually known as –

(A) Antagonism (B) Independent
(C) Additive (D) Synergism

Ans. (A) **[SSC CGL 2013]**

Exp: In chemistry, Antagonism is a phenomenon wherein two or more agents in combination have an overall effect that is less than the sum of their individual effects.

81. Water does not evaporate, if–

(A) Temperature is Less than 0^0C
(B) Humidity is 0%
(C) Humidity is 100%
(D) Temperature is 100^0C

Ans. (C) **[SSC Stenographer 2011]**

Exp: If Humidity is 100% in atmosphere, then water will not boil because amount of water vapours in atmosphere reaches to its maximum value and possibility of evaporation becomes zero.

82. The amount of chlorine available in water after disinfection called as –

(A) Free Chlorine (B) Residual chlorine
(C) Free available chlorine
(D) Combined available chlorine

Ans. (B) **[SSC Tax Asst. 2008]**

Exp: Amount of chlorine available in water after disinfection is called **Residual chlorine**.

83. The mass of 10 moles of water is–

(A) 18g (B) 180g
(C) 90g (D) 45g

Ans. (B) **[SSC CGL 2012]**

Exp: Mass of 1 mole of water is 18g,
$H_2O = 1 \times 2 + 16 = 18g$
mass 10 mole of water $= 10 \times 18 = 180g$

84. When pressure is increased, the boiling point of water

(A) Decreases (B) Increases
(C) Remains same (D) Depends

Ans. (B)

Exp: The temperature at which a substance boils is known as its boiling point. On increasing pressure boiling point of substance increases.

85. What is the fundamental unit of amount of a substance ?

(A) Mole (B) Candela
(C) Kelvin (D) Meter

Ans. (A) **(SSC CHSL 2016)**

Exp: No. of moles $= \frac{\text{Given mass of substance}}{\text{Molecular mass of substance}}$

86. _____is the major component of natural gas.

(A) Acetone (B) Methane
(C) Chlorine (D) Hexane

Ans. (B) **(SSC CHSL 2016)**

Exp: Natural gas is a fossil fuel contains mixtures of hydrocarbons. Methane is main component of natural gas.

87. Which among the following is not a characteristic of transition metals?

(A) Tendency to gain electrons
(B) Low electronegativity
(C) Low ionization energy
(D) Malleability

Ans. (A) **(SSC CHSL 2016)**

Exp: Metals are electropositive in nature i.e. metals have tendency to loose electrons not to gain electrons.

88. The conversion of hard water into soft water by boiling or adding calcium hydroxide is called _____.

(A) Baker's process (B) Temp's process
(C) Clarke's process (D) Lake's process

Ans. (C) **(SSC CHSL 2016)**

Exp: Clarke's method is used to convert hard water into soft water. In this method calculated amount of lime is added to hard water. It precipitates out Calcium Carbonate and Magnesium Hydroxide which can be filtered off.

89. What is the Greenhouse Effect?

(A) The fall in population of plants due to human activity
(B) It is the warming of earth's surface due to its atmosphere
(C) The polluting effect of burning fossil fuels
(D) The heating of the atmosphere due to depletion of the ozone layer

Ans. (B) **(SSC CHSL 2016)**

Exp: Green house effect means trapping of solar energy due to atmospheric gases. CO_2, CH_4, CFC, N_2O are green house gases. The warming of earth's surface due to the trapping of infrared radiations reflected from the earth's surface by CO_2 layer in the atmosphere is called green house effect.

90. Which chemical is used to ripe mangoes artificially?

(A) Sulphur Dioxide (B) Nitrous Oxide
(C) Calcium Carbide (D) Phosphorous

Ans. (C) **(SSC CHSL 2016)**

Exp: Calcium carbide is used to ripe mangoes artificially. Calcium carbide produce acetylene gas which acts as the natural ripening agent.

91. For what is Mohs scale used?

(A) To measure brightness of a substance
(B) To measure viscosity of a liquid
(C) To measure elasticity of a material
(D) To measure hardness of minerals

Ans. (D) **(SSC CHSL 2016)**

Exp: Mohs scale is used to measure the relative hardness of minerals. It characterizes the scratch resistance of various minerals through the ability of a harder material to scratch a softer material. Some minerals and their hardners is given below.

Minerals	Hardness
Talc	1
Gypsum	2
Quartz	7
Topaz	8
Corundum	9
Diamond	10

92. Name the international treaty designed to protect the Ozone layer from CFCs.

(A) Sigma protocol (B) Montreal protocol
(C) Ozone protocol (D) Green protocol

Ans. (B) **(SSC CHSL 2016)**

Exp: The Montreal Protocol (1987) is a global agreement to protect the Ozone layer by phasing out the production and consumption of ozone depleting substances (ODS).

93. Which of the following is an effective Fire Extinguisher?

(A) Argon (B) Halons
(C) Halogen (D) Helium

Ans. (B) **(SSC CHSL 2016)**

Exp: Halons are effective fire extinguisher. Halons are a family of chemicals similar to chlorofluoro carbons (CFCS), but containing at least one atom of bromine. Halons are also part of a group of chemicals known as the volatile organic compounds.

94. Who Invented Laser?

(A) William Friese Greene (B) Arthur Fry
(C) Gordon Gould (D) Otto von Guericke

Ans. (C) **(SSC CHSL 2016)**

Exp: Laser was invented by Gordon Gould.

95. Who Invented LED?

(A) Nick Holonyak (B) Elias Howe
(C) Chuck Hull (D) Christiaan Huygens

Ans. (A) **(SSC CHSL 2016)**

Exp: LED refers to light emitting diode. LED was invented by Nick Holonyak.

96. What is dehydration?

(A) Removal of acid from a molecule
(B) Removal of base from a molecule
(C) Removal of water from a molecule
(D) Removal of alkali from a molecule

Ans. (C) **(SSC CHSL 2016)**

Exp: Dehydration reactions can be defined as the removal of water molecules from the reacting molecules.

Note: Sulphuric acid is a strong dehydrating agent.

97. Which is the most economical method of removing solid matter from water?

(A) Using deactivated carbon
(B) Electrolysis
(C) Distillation (D) Sedimentation

Ans. (D) **(SSC CHSL 2016)**

Exp: Sedimentation is the most economical method of removing solid matter from water.

98. Nitrogen fixation is a process of

(A) Assimilation of nitrate
(B) Utilisation of nitrogen gas
(C) Conversion of organic nitrogen into proteins
(D) Conversion of molecular nitrogen into ammonia

Ans. (D) **(SSC CGL 2016)**

Exp: Nitrogen fixation is a process of conversion of molecular nitrogen into ammonia or other molecules available for living organism.

99. A hard coal containing little volatile matter is called _____.

(A) Loess (B) Anthracite
(C) Atoll (D) Lava

Ans. (B) **(SSC CHSL 2016)**

Exp: Anthracite coal is also known as Hard coal. It contains 92-98% Carbon and little volatile matter.

100. Who invented Aerosol can?

(A) Erik Rotheim (B) Erik Mathew
(C) Erik Tim (D) Eric Flayer

Ans. (A) **(SSC CHSL 2016)**

Exp: Aerosol spray can was invented in 1926 Eric Rotheim from Norway.

101. What is the chemical formula of aluminium nitride?

(A) AlN (B) Al_2N
(C) AlN_2 (D) AlN_2

Ans. (A) **(SSC CHSL 2016)**

Exp: Aluminiumion = Al^{3+}
Nitride ion = N^{3-}
So, chemical formula of Aluminium Nitride will be AlN.

102. The upper part of the heterosphere is composed almost completely of which gas?

(A) Ozone (B) Nitrogen
(C) Oxygen (D) Hydrogen

Ans. (D) **(SSC CHSL 2016)**

Exp: Heterosphere lies above the homosphere, on average heterosphere begins at an altitude of about 80 km. In the heterosphere the concentration of the heavier gases such as nitrogen or oxygen decreases more rapidly with increasing altitudes. Hydrogen gas concentration is high.

103. _____ is an anaesthetic agent.

(A) Acetylene (B) Glycol
(C) Diethylether (D) Ethylene

Ans. (C) **(SSC CHSL 2016)**

Exp: Diethylether (ether) is used as anaesthetic agent used in surgery. However, now a days better compounds like enflurane and isoflurane are available.

104. The boiling point of liquids vary as

(A) Pressure varies (B) Temperature varies
(C) Volume varies (D) Density varies

Ans. (A) **(SSC CGL 2016)**

Exp: Boiling point of liquid is the temperature at which its vapour pressure of liquid is equal to the pressure of the air. Boiling point depends on pressure.

105. At boiling point of liquids , its

(A) Temperature increases
(B) Atmospheric pressure increases
(C) Temperature remains constant
(D) Vapour pressure decreases

Ans. (C) **(SSC CGL 2016)**

Exp: Temperature remains constant during the boiling of water even though heat is supplied continuously. This is because, the heat supplied is absorbed by water molecules and this heat increases their kinetic energy.

106. The biogas used for cooking is a mixture of which of the following ?

(A) Carbon dioxide & oxygen
(B) Isobutane& propane
(C) Methane & Carbon monoxide
(D) Methane & Carbon dioxide

Ans. (D) **(SSC CGL 2016)**

Exp: The biogas used for cooking is a mixture of Methane & Carbon dioxide.

107. Biofertilizers convert nitrogen to_____.

(A) Nitrates (B) Ammonia
(C) Nitrogenase (D) Amino acids

Ans. (B) **(SSC CGL 2016)**

Exp: Biofertilizers are micro organism which bring about nutrient enrichment of soil by enhancing the availability of nutrients to crop. Biofertilizers convert nitrogen to ammonia by the nitrogen fixation process.

108. Which of the following State has become India's first carbon free State?

(A) Himachal Pradesh (B) Madhya Pradesh
(C) Uttar Pradesh (D) Maharashtra

Ans. (A) **(SSC CGL 2016)**

Exp: Himachal Pradesh State has become India's first carbon free State.

109. Calcium salts which is used as fertilizer:-

(A) Calcium Carbide (B) Calcium Carbonate
(C) Calcium Cyanide (D) Calcium Sulphate

Ans. (D) **(SSC CGL 2016)**

Exp: Calcium Sulphate (Gypsum) is listed as inorganic fertilizer. It is used to improve soil quality.

110. Sea water is saltier than rain water because

(A) Sea animals are salt producing
(B) The air around the sea is saltish
(C) Rivers wash away salts from earth and pour them into the sea
(D) Sea beds have salt producing mines

Ans. (C) **(SSC CGL 2016)**

Exp: Sea water is Saltier than rain water because it contains large amount of the salt, sodium chloride. Salts are brought to the sea through many sources like rivers and streams which collect various minerals, salts and silt on their course and drain them into the Oceans.

111. Which one of the following is not a non-conventional source of energy?

(A) Solar Energy (B) Natural Gas
(C) Wind Energy (D) Tidal Power

Ans. (B) **(SSC CGL 2016)**

Exp: Non-conventional energy sources are those sources that are renewable, infinite and restorable. For example, Wind energy, tidal energy, solar energy.

112. Nitrification is the biological process of converting

(A) N_2 into nitrate (B) N_2 into nitrite
(C) Ammonia into nitrite (D) Ammonia into N_2

Ans. (C) **(SSC CGL 2016)**

Exp: Nitrification is an important step in the nitrogen cycle in soil. In this process ammonia (NH_3) or Ammonium ion (NH_4^+) is converted to nitrite ion (NO_2^-) and then nitrate ion (NO_3^-) by bacteria. For eg. Nitrosomonas.

113. Which of the following produces the most solid waste?

(A) Agriculture (B) Power Plants
(C) Manufacturing Industry
(D) Packaging Industry

Ans. (C) **(SSC CGL 2016)**

Exp: Manufacturing industry produces the most solid waste.

114. Spraying of DDT on crops causes pollution of _____.

(A) Air & Soil (B) Crops & Air
(C) Soil & Water (D) Air & Water

Ans. (C) **(SSC CGL 2016)**

Exp: Spraying of DDT on a crops causes pollution of soil and water. DDT has an extremely low volatility and may be the least soluble chemical known which makes it extremely persistent in soils and aquatic sediments.

115. The waste management technique that involves the use of micro-organisms to remove or neutralize pollutants from contaminated site is called

(A) Bio sensor (B) Bio magnification
(C) Bio remediation (D) Bio concentration

Ans. (C) **(SSC CGL 2016)**

Exp: Bioremediation is a waste management technique that involves the use of micro-organism to remove or neutralize pollutants from contaminated site.

116. The source of energy that causes the least global warming is

(A) coal (B) Geothermal energy

(C) Natural Gas (D) Petroleum

Ans.(B) **(SSC CGL 2016)**

Exp: In the given options Geothermal energy causes the least global warming.

117. Which of the following is a commercial source of energy?

(A) Agricultural waste (B) Dried dung
(C) Sun (D) Natural gas

Ans. (D) **(SSC CGL 2016)**

Exp: The sources of energy that are available to the users at economic price are referred as commercial energy. For example: Coal, Petroleum, natural gas and electricity. These are generally exhaustible.

118. Honey that has high concentration of sugar does not decay because

(A) Bacteria cannot survive in an active state as it is totally deprived of oxygen
(B) It contains natural antioxidant that prevents bacterial attack
(C) Bacteria cannot survive in an active state in a solution of high osmotic strength as water is drawn out
(D) None of these

Ans. (C) **(SSC CGL 2016**

Exp: Honey that has high concentration of sugar does not decay because bacteria cannot survive in an active state in a solution of high osmotic strength as water is drawn out.

119. At low temperature, Lead behaves as a:

(A) Semi conductor (B) Super conductor
(C) Insulator (D) Conductor

Ans. (B) **(SSC CGL 2016)**

Exp: At low temperature, Lead behaves as a super conductor. Superconductivity was discovered by Kamerlingh onnes on April 8, 1911. It is the ability of certain materials to conduct electric current with practically zero resistance.

120. Precipitation in the form of a mixture of rain and snow is called

(A) Drizzle (B) Hail
(C) Sleet (D) Snow

Ans. (C) **(SSC CGL 2016)**

Exp: Sleet (Rain and snow mixed) is precipitation composed of rain and partially melted snow. This can occur where the temperature in the lower part of atmosphere is slightly above the freezing point (0°C or 32°F)

121. The elements known as primary nutrients for plants

(A) Nitrogen, Phosphorus and Potassium
(B) Nitrogen, Oxygen and Silicon
(C) Potassium, Boron and Nitrogen
(D) Nitrogen, Phosphorus and Iron

Ans. (A) **(SSC CGL 2016)**

Exp: The elements used as primary nutrients for plants are nitrogen, phosphorous and potassium.

122. Which of the following sources has the largest share in power generation in India?

(A) Atomic power (B) Thermal power
(C) Hydro power (D) Wind power

Ans. (B) **(SSC CGL 2016)**

Exp: Thermal power plant is the largest source of power in India. About 71% of electricity consumed in India are generated by thermal power plants. Thermal power plants are based on fuel such as coal, gas and diesel.

123. Iron and manganese present as pollutants in water cannot be removed by_____.

(A) Oxidation followed by setting and filtration
(B) Chlorination
(C) Ion exchange process
(D) Lime soda process or manganese zeolite process

Ans. (B) **(SSC CGL 2016)**

Exp: Iron and managanese present as pollutants in water can not be removed by chlorination. Chlorination is the process of adding chlorine in water to kill certain bacteria and microbes.

124. Which is the first Indian State to go wholly organic?

(A) Meghalaya (B) Sikkim
(C) Manipur (D) Assam

Ans. (B) **(SSC CGL 2016)**

Exp: Sikkim is the first Indian State to go wholly organic.

125. What is the source of natural energy of the hot springs at Manikaran in Himachal Pradesh ?

(A) Geo Thermal Energy (B) Biomass Energy
(C) Thermal Energy (D) Hydro Energy

Ans. (A) **(SSC CGL 2016)**

Exp: When underground water comes in the contact of hot rocks. It changes to steam and is trapped between the rocks. Sometimes steam gets some outlets on the surface and comes out. They are called Hot springs.

126. Which State of India is leading in solar energy generation ?

(A) Gujarat (B) Rajasthan
(C) Haryana (D) Uttar Pradesh

Ans. (B) **(SSC CGL 2016)**

Exp: Rajasthan State of India is leading in solar energy generation.

127. Which of the following is not a commercial source of energy?

(A) Coal (B) Petroleum
(C) Natural Gas (D) Firewood

Ans. (D) **(SSC CGL 2016)**

Exp: Firewood is not a commercial source of energy.

128. Removal of carbon particles from air involves the principle of

(A) Precipitation (B) Filtration
(C) Electrophoresis (D) Sedimentation

Ans. (C) **(SSC CGL 2016)**

Exp: Removal of carbon particles from air involves the principle of Electrophoresis. Colloidial particles are electrically charged. When an electric current is passed through the colloidal solution, the particles move towards a particular electrode. This is termed Electrophoresis or Cataphoresis.

129. Which one of the following is commonly used for pulp bleaching in the paper industry?

(A) Mild sulphuric acid (B) Glucose isomerase
(C) Hydrogen peroxide (D) Iodine and water

Ans. (C) **(SSC CGL 2016)**

Exp: Hydrogen peroxide act as a bleaching agent due to the release of nascent oxygen.

$H_2O_2 \longrightarrow H_2O + [O]$

Thus bleaching action of H_2O_2 is permanent and is due to oxidation. It oxidises the colouring matter to a colourless product.

Colouring matter + [O] $\longrightarrow$ Colourless matter.

130. Ozone protects biosphere from

(A) X-rays (B) Gamma rays
(C) Ultraviolet rays (D) Infrared rays

Ans. (C) **(SSC CGL 2016)**

Exp: Ozone layer of the stratosphere absorbs UV rays. Hence it acts as shield against UV rays.

131. The molecular mass of a gas is

(A) Twice its vapour pressure
(B) Equal to its vapour pressure
(C) Half its vapour pressure
(D) Not related to its vapour pressure

Ans. (A) **(SSC CGL 2016)**

Exp: Vapour density = $\frac{\text{Relative molecular mass}}{2}$

so relative molecular mass is the twice of vapour density.

132. Brown stains in vessels and clothes indicate the presence of high quantities of_____in Water

(A) Magnesium (B) Calcium
(C) Manganese (D) Chromium

Ans. (C) **(SSC CGL 2016)**

Exp: Manganese is typically found in iron-bearing water. Manganese produce brownish black stain. Soap and detergents do not remove stains, and use of chlorine bleach may intensify the stains.

133. In water treatment plant, use of chloramines ensures _____

(A) Taste and odour control
(B) Weed control in reservoirs
(C) Disinfection
(D) Removal of permanent hardness

Ans. (C) **(SSC CGL 2016)**

Exp: Chloramines are chemical compounds that contain chlorine and ammonia. Adding of chloramine to water to disinfect water is known as **Chlorination**.

134. Super cooling stands for cooling of a liquid :

(A) At freezing point (B) Below freezing point
(C) At melting point (D) Above melting point

Ans. (B) **(SSC CGL 2016)**

Exp: Supercooling is the process of cooling or chilling of liquid or gas below its freezing point without crystallization or solidification. It is also known as **Undercooling**.

135. Alcohol is more volatile than water because_____is lower than water

(A) Its boiling point (B) Its density
(C) Its viscosity (D) Its surface tension

Ans. (A) **(SSC CGL 2016)**

Exp: Alcohol is more volatile than water because its boiling point is lower than water.

136. Which method will be employed to test the hardness of water?

(A) Boiling (B) Distillation
(C) Formation of lather with soap
(D) None of these

Ans. (C) **(SSC CGL 2016)**

Exp: Water which does not produce lather with soap solution readily is called Hard water. eg. river water, well water, sea water and tap water.Hardness of water is due to the presence of the bicarbonates, chlorides and sulphates of Calcium and Magnesium

137. Biuret test is not given by

(A) Proteins (B) Carboydrate
(C) Polypeptides (D) Urea

Ans. (B)

Exp: Biuret test is the characteristic test for the amide linkage since there is no amide linkage in carbohydrates, they do not give this test.

138. Absolute Zero is defined as

(A) The temperature at which all molecular motion ceases
(B) At which water boils at 298K
(C) At which liquid Helium boils
(D) At which the volume becomes zero

Ans. (A) **(SSC CGL 2016)**

Exp: Absolute Zero is defined as the temperature at which all molecular motion ceases. It is 0 kelvin (–273.15°C).

139. Which of the following is used for the preparation of dynamite?

(A) Methyl alcohol (B) Iron oxide
(C) Nitro Glycerol (D) Copper sulphate

Ans. (C) **(SSC CPO 2017)**

Exp: Nitro Glycerol or Nitro glycerin is used for the preparation of dynamite. Nitroglycerol acts as an explosive in dynamite, which is used for mining purpose.

140. Which of the following drug is used to get pain relief in muscles?

(A) Analgesics (B) Antibiotic
(C) Antiseptics (D) Antidotes

Ans. (A) **(SSC CPO 2017)**

Exp:

Analgesics :- These are drugs, which give relief from pain on ingestion.

Antibiotic :- Drugs used in the treatment & prevention of bacterial infections.

Antiseptics :- Antimicrobial substances which are applied to living tissue to reduce the probability of infection.

Antidotes :- Substance which can counteract the effect of poisoning.

141. Which of the following is an example of sublimation?

I. Dry ice II. Camphor

III. Ice

(A) I and II (B) I, II and III

(C) Only I (D) Only II

Ans. (A) **(SSC CPO 2017)**

Exp: Sublimation is the process in which solid substance is directly converted into vapour form. The substances which directly convert from solid state to vapour form, are called as **sublimatory substances or sublime**.

eg: Iodine, Camphor, Dry ice, Naphthalene etc.

142. Which of the following is not a transition metal?

(A) Actinium (B) Bohrium

(C) Osmium (D) Radium

Ans. (D) **(SSC CPO 2017)**

Exp: Transition elements are d block elements. Actinium, Bohrium & Osmium are d block elements. Radium belongs to s block (Alkaline Earth Metals).

143. Which of the following is not a characteristic of a solid?

(A) High compressibility (B) High density

(C) Regular shape (D) High rigidity

Ans. (A) **(SSC CPO 2017)**

Exp: Solids have high density, regular shape & rigid in nature due to strong intermolecular force & negligible intermolecular distance. Solids can not be compressed. They have negligible compressibility. Gases have high compressibility as there is a large intermolecular distance.

144. Who among the following is not a recipient of Nobel Prize 2016 in the field of Chemistry?

(A) Jean - Pierre Sauvage (B) Sir J. Fraser Stoddart

(C) Bernard L. Feringa (D) John M. Kosterlitz

Ans. (D) **(SSC CPO 2017)**

Exp: The Nobel Prize in Chemistry 2016 was awarded jointly to Jean – Pierre Sauvage, Sir J. Fraser Stoddart & Bernard L. Feringa for the design & synthesis of molecular machines.

145. Which of the following cloth will readily catch fire?

(A) Cotton cloth (B) Polyester cloth

(C) Acrylic cloth (D) Nylon cloth

Ans. (A) **(SSC CPO 2017)**

Exp: Cotton cloth catches fire easily because of its light texture.

146. Which of the following has least melting point?

(A) Carbon (B) Silver

(C) Mercury (D) Gold

Ans. (C) **(SSC CPO 2017)**

Exp: Mercury is found in liquid state at room temperature while silver, carbon & gold are solid. As mercury is present in liquid state, its melting point is low.

147. Who discovered X-rays?

(A) W. C. Roentgen (B) Albert Einstein

(C) Samuel Cohen (D) Edward Taylor

Ans. (A) **(SSC CGL 2017)**

Exp: Wilhelm Conrad Roentgen, a german professor of physics discovered X-rays in 1895.

148. Which of the following are highly compressible?

(A) Solid (B) Liquid

(C) Gas (D) Solid and Liquid

Ans. (C) **(SSC CGL 2017)**

Exp: Gases are highly compressible due to presence of large intermolecular distance & very small intermolecular force.

Compressibility order:-

Gases > Liquids > Solids (negligible)

149. Which of the following gases is heavier than oxygen?

(A) Carbon dioxide (B) Ammonia

(C) Methane (D) Helium

Ans. (A) **(SSC CGL 2017)**

Exp: Mass of Oxygen $O_2 = 2 \times 16 = 32g$

Mass of Carbon Dioxide $CO_2 = 12 + 2 \times 16 = 44g$

Mass of Ammonia $NH_3 = 14 + 3 \times 1 = 17g$

Mass of Methane $CH_4 = 12 + 4 \times 1 = 16g$

Mass of Helium He = 4g

Mass of CO_2 is greater than the mass of oxygen. So, CO_2 is heavier than oxygen.

150. Ozone is an _____ of oxygen.

(A) Allotrope (B) Isotope

(C) Isobar (D) Isotones

Ans. (A) **(SSC CGL 2017)**

Exp: When an element exists in different physical forms in nature. This phenomenon is called Allotropism, & different forms are called as allotropes.

eg: Ozone is an allotrope of Oxygen.

Diamond, Graphite & Fullerene are allotropes of carbon.

151. Which of the following gas was released during Bhopal gas tragedy?

(A) Methyl isocyanate

(B) Sodium isothiocyanate

(C) Nitrogen isothiocyanate

(D) Potassium isothiocyanate

Ans. (A) **(SSC CGL 2017)**

Exp: Bhopal gas tragedy was caused by (MIC) methyl isocyanate (CH_3NCO) on December 2, 1984 in Bhopal (M.P) in the Union Carbide factory. MIC is used for manufacturing the insecticide, Carbaryl.

152. Which of the following is not an example of Allotrope?

(A) Diamond (B) Graphite
(C) Ozone (D) Steel

Ans. (D) **(SSC CGL 2017)**

Exp: When an element exists in different physical forms in nature. This phenomenon is called Allotropism, & different forms are called as allotropes.

eg: Ozone is an allotrope of Oxygen. Diamond, Graphite & Fullerene are allotropes of carbon.

153. Supercooling is cooling of liquid _____.

(A) Below melting point (B) Below freezing point
(C) At melting point (D) Above melting point

Ans. (B) **(SSC CGL 2017)**

Exp: Supercooling is a cooling of liquid below freezing point.

154. The process of melting is also called as:-

(A) Fusion (B) Galvanisation
(C) Crystallisation (D) Evaporation

Ans. (A) **(SSC CGL 2017)**

Exp: The process of melting is also called as fusion.

Solid $\xrightarrow{\text{Fusion}}$ Liquid

155. Who discovered Potassium?

(A) Humphry Davy (B) Alan Turing
(C) Bill Gates (D) Tim Berners-Lee

Ans. (A) **(SSC CGL 2017)**

Exp: Potassium was isolated by Humphry Davy in 1807 through the electrolysis of molten caustic potash (KOH).

156. Who is not amongst the winners of Nobel Prize 2016 for Chemistry?

(A) Jean-Pierre Sauvage (B) J. Michael Kosterlitz
(C) Sir J. Fraser Stoddart (D) Bernard L. Feringa

Ans. (B) **(SSC CGL 2017)**

Exp: Jean-Pierre Sauvage, Sir J. Fraser Stoddart and Bernard L. Feringa are the winners of Nobel Prize 2016 for chemistry. They won noble prize for synthesis & design of Molecular machines.

157. A change in which no new substances are formed is called _____.

(A) Physical Change (B) Chemical Change
(C) Rusting (D) Galvanisation

Ans. (A) **(SSC CGL 2017)**

Exp: Physical changes are changes in which no new product is formed. They are reversible in nature. These type of changes includes change in shape or state.

eg:- Melting of ice, boiling of water etc.

158. A change in which a substance undergoes a change in its physical properties is called _____.

(A) Chemical properties (B) Physical properties
(C) Chemical change (D) Physical change

Ans. (D) **(SSC CGL 2017)**

Exp: Physical changes are changes in which physical properties of substance change. These are reversible in nature. No new product is formed. **eg:-** Melting of Ice, boiling of water etc.

159 The passage of an electric current through a conducting liquid causes _____.

(A) Galvanisation (B) Evaporation
(C) Physical reaction (D) Chemical reaction

Ans. (D) **(SSC CGL 2017)**

Exp: The passage of an electric current through a conducting liquid causes chemical reaction.

160. A change in which one or more new substances are formed is called _____.

(A) Physical change (B) Chemical change
(C) Rusting (D) Galvanisation

Ans. (B) **(SSC CGL 2017)**

Exp: A change in which one or new substances are formed is called as Chemical change. It is irreversible in nature as the product can not be converted into its base matter.

Eg: digestion of food, burning of fuel etc.

161. What is formed when Carbon dioxide is passed through lime water?

(A) Copper sulphate (B) Calcium carbonate
(C) Magnesium oxide (D) Baking soda

Ans. (B) **(SSC CGL 2017)**

Exp: When carbon dioxide is passed through lime water, then solution becomes milky and a water insoluble substance calcium carbonate ($CaCO_3$) is formed .

$$Ca(OH)_2 + CO_2 \rightarrow CaCO_3 + H_2O$$

If excess of CO_2 is passed . then milkiness disappears due to formation of calcium bicarbonate.$[Ca(HCO_3)_2]$ which is water soluble.

162. The temperature at which a solid melts to become a liquid at the atmospheric pressure is called its _____.

(A) Crystallisation (B) Melting point
(C) Evaporation (D) Galvanisation

Ans. (B) **(SSC CGL 2017)**

Exp: The temperature at which a solid melts to become a liquid at the atmospheric pressure is called its Melting point.

163. The melting point of ice is ____ K.

(A) 253.16 (B) 263.16 (C) 273.16 (D) 283.16

Ans. (C) **(SSC CGL 2017)**

Exp: Melting point is the temperature at which solid state melts to become liquid at the atmospheric pressure. The melting point of ice is 0°C or 273.16K.

164. The substances which have very low ignition temperature and can easily catch fire with a flame are called _____ substances.

(A) Hazardous (B) Perilous
(C) Incombustible (D) Inflammable

Ans. (D) **(SSC CGL 2017)**

Exp: The substances which have very low ignition temperature & can easily catch fire with a flame are called as Inflammable substances. **Eg:** Oil , kerosene , petrol etc.