**Fill in the blanks:**

1. The horizontal rows in a periodic table are called _____
2. In going across a period from left to right in a periodic table, these atomic size of the atoms _____
3. On moving from left to right in the second period, the number of valence electrons _____
4. If an element has one electron in its outermost energy level (shells) then it is likely to be _____
5. The properties of the elements are a periodic function of their _____
6. Moving across a _____ of the periodic table the elements show increasing _____ character.
7. The element at the bottom of a group would be expected to show _____ metallic character than the element at the top.
8. The similarities in the properties of a group of elements are because they have the same _____.
9. The atomic size _____ as we move from left to right across the periods because the _____ increases but the _____ remains the same.
10. Element A has low ionization potential and a low electro negativity, element A is likely to be a _____
11. In a period 3, element B is to the left of the element C, The atom of element B would be expected to be_____ than the element C.
12. Element B would be _____ metallic in character than element C.
13. The element with greater electron affinity would be _____
14. B would have a _____ ionization potential than element C.

15. If an element has a low ionization energy then it is likely to be _____

16. If an element has seven electrons in its outermost shell then it is likely to have the _____ atomic size among all the elements in the same period.

17. Metals form _____ chlorides.

18. The most metallic element in its respective group is placed at the _____

19. The elements in the periodic table are placed in the increasing order of their _____

20. If an element has seven valence electrons it is likely to be a _____

21. _____ Period is the longest period of periodic table.

22. _____ have maximum electron affinity in their respective periods.

23. As we move across the period metallic character _____

24. Amphoteric oxide or period III elements is _____

25. The element in Group VIIA which is liquid at room temperature is _____.

26. Atomic size of neon is _____ than that of fluorine.

27. The element below sodium in the sane group would be expected to have _____ electronegativity than sodium.

28. The most metallic element in Period 3 is _____.

29. The most non-metallic element in Period 3 is _____.

Chap 2

30. If the compound formed between X and Y is melted and an electric current passed through the molten compound, the element

X will be obtained at the _____ and Y at the _____ of the electrolytic cell.

31. Ammonia forms _____ covalent bonds.
32. Ammonia on the whole contains _____ bond pairs and _____ lone pair of electrons.
33. Generally ionic compounds exist in _____ state.
34. Melting and boiling points of covalent compounds are generally _____.
35. Cations are formed by _____ of electrons.
36. Anions are formed by _____ of electrons.
37. Two chlorine atoms combine to form a molecule. The bond between them is _____.
38. In forming $N_2$ molecule, _____ electrons are shared by each atom of nitrogen.
39. _____ is a process by which electrons are apparently removed from an atom or an ion.
40. The ability of an atom to attract shared electrons is called its _____.
41. Methane is a _____ compound.
42. In forming $O_2$ molecule, _____electrons are shared by each atom of oxygen.
43. An oxidizing agent is _____ of electrons.

Chap 3

44. An acid is a compound which when dissolved in water forms hydronium ions as the only (1) _____ ions.
45. A base is a compound which if soluble in water contains (2) _____ ions.

46. A base reacts with an acid to form a _____ and water only. This type of reaction is known as _____

47. M is an element in the form of powder. M burns in oxygen and the product is soluble in water. The solution is tested with litmus. Write down only the word which will correctly complete each of the following sentences.

    (i) If M is a metal then the litmus will turn _____

    (ii) If M is a nonometal then the litmus will turn _____-

    (iii) If M is a reactive metal then _____ will be evolved when M reacts with dilute sulphuric acid.

    (iv) If M is a metal it will form _____ oxide which will form _____ solution with water.

    (v) If M is a non-metal it will not conduct electricity in form _____

48. Give one example of double salt used for purification of water.

49. Name a substance which changes the blue colour of copper sulphate crystals to white.

50. Name two crystalline substances which don't contain water of crystallization.

51. Name a salt whose solubility first increases and then decreases with rise in temperature.

52. What are the terms defined below?

    (i) A salt containing a metal ion surrounded by other ions or molecules.

    (ii) A base which is soluble in water.

53. Find the odd one out and explain your choice ( note: valency is not a criterion )

    (i) $Al(OH)_3$ , $Pb(OH)_2$ , $Mg(OH)_2$ , $Zn(OH)_2$

    (ii) Formic acid, Nitric acid, Acetic acid, Propanoic acid

54. A base which is not an alkali _____
55. Sodium argento cyanide is a _____ salt.
56. An acid which furnish three hydronium ions per molecule is _____
57. A slat which absorbs moisture from air and changes in to liquid state is known as _____ salt.
58. A hydrated salt which loses its water of crystallization on exposure to air is known as _____ salt.
59. Disodium potassium phosphate is a _____ salt.
60. An oxide of metal which is amphoteric in nature is _____
61. An example of a deliquescent salt is _____
62. An insoluble salt prepared by synthesis is _____
63. An example of an anhydrous salt is _____
64. An example of monobasic organic acid is _____
65. An example is soluble carbonate is _____
66. Superphosphate is an example of a compound called _____.
67. Ammonium chloride is a soluble salt prepared by _____.
68. A solution X turns blue litmus red, so it must contain _____ ions.
69. Another solution Y turns red litmus blue and therefore, must contain _____ ions.
70. When solution X and Y mixed together, the products will be a _____and_____.
71. If a piece of magnesium were put into a solution X, _____ gas would be evolved.
72. A / an_____ salt is one in which the hydrogen of an acid has been partially replaced by a _____.

73. A reaction between a base and an acid in their solution to produce salts and water only is called _____ reaction.
74. All nitrates of metals are _____ in water.
75. Sodium chloride (NaCl) is _____ salt.
76. Sodium potassium sulphate is a _____ salt.
77. The number of replaceable hydroxide ions ($OH^-$) formed by one molecule of a base in water is known as _____.

Chap 4

78. Give the two examples of amphoteric hydroxides.
79. Salts of _____ elements are generally coloured.
80. From the ions $K^+$, $Cr^3$, $Fe^{2+}$, $Ca^{2+}$, $SO^2_3$, $MnO_4^-$ , $NO_3^-$ , the ions generally coloured are _____
81. The hydroxide which is soluble in excess of NaOH is _____
82. To distinguish soluble salts of zinc and lead _____ is used.
83. The oxides and hydroxides of certain metals i.e. _____ are amphoteric.
84. Name the reagent used to distinguish zinc nitrate solution from magnesium nitrate solution.
85. Write the colours of the following salts:
    (a) Ferrous salts
    (b) Cuprous salts
    (c) Cupric salts
    (d) Calcium salts
    (e) Aluminum salts
86. Calcium salts with ammonium hydroxides give _____ precipitates.
87. Litharge dissolves in sodium hydroxide forming _____

88. $ZnO$, $Al_2O_3$, $PbO$ are _____ oxides.
89. _____ and _____ salts dissolve in sodium hydroxide.
90. Ferrous salts are _____ in colour.
91. An examples of a base which is not an alkali is _____
92. A vase obtained by strongly heating lead nitrate crystals is _____
93. An example of weak alkali solution is _____
94. An example of insoluble salt is _____
95. An example of soluble salt is _____
96. The colour of hydrated copper sulphate is _____
97. The example of amphoteric hydroxide is _____
98. An oxide of a metal which is amphoteric in nature is _____
99. An example of soluble carbonate is _____
100. Heating ammonium chloride with sodium hydroxide produces _____.
101. The salt of lead, soluble in hot water and insoluble in cold water is _____.
102. The valency of copper in copper sulphhate is _____.

_____

103. What percentage of water is present in Hydrated copper sulphate _____
104. What percentage of water is present in Washing soda crystals _____
105. The number of atoms present in one _____ of elements is called its _____.
106. The formula which represents the simple ratio of _____ in a compound is called _____ formula.

107. Powdered sodium chloride (common salt) does not conduct an electric current, but it does when _____ or when _____
108. During electrolysis, positive ion move towards _____
109. Molten lead bromide conducts electricity. It is called a _____. It is made up of lead _____ and bromide _____.
110. The leads ions are _____ charged and are called _____.
111. The bromide ions are _____ charged and are called.
112. Conducting nature of ionic compounds is due to _____
113. NaCl is a poor conductor of electricity in the _____
114. A solution of $FeSO_4$ _____be kept in zinc vessel.
115. Substances which conduct electricity in the solid state are generally_____
116. A solution of HCl gas in water conducts electricity because of _____, but a solution of HCl gas in toluene does not conduct an electric current because _____.
117. Negative electrode is called the _____
118. Positive electrode is called the _____
119. The electron releasing tendency of zinc is _____than that of copper.
120. The conductivity of an electrolyte _____with rise in temperature.
121. Zinc is _____ in the activity series than _____
122. Cations are _____ ions.
123. Anions are _____ ions.

124. With platinum electrodes hydrogen is liberated at the _____ and oxygen at the _____ during the electrolysis of acidified water.
125. Electrolysis is the passage of _____ through a liquid or a solution accompanied by a _____ change.
126. The metal plate through which current enters in to an electrolyte is called _____. It has _____ of electrons.
127. The metal plate through which _____ leaves from an electrolyte is called _____ has _____ of electrons.
128. The ions which discharge on the negative electrode during electrolysis _____ electrons. Thus the ions are said to be _____.
129. The ions which discharge on the positive electrode during electrolysis _____ electrons. Thus the ions are said to be _____.
130. Hydrogen and metallic ions are _____ because they _____ electrons at cathode.
131. Non-metallic ions are _____ because they _____electrons at anode.
132. As we descend the electrochemical series containing cations , the tendency of the cations to get _____ at the cathode increases
133. The _____ the concentration of an ion in a solution, the greater is the probability of being discharged at its appropriate electrode.
134. If the compound formed between X [a non metal with a valency of 2] and Y [a non metal with a valency of 3] is melted and an electric current is passed through the molten compound, the element X will be obtained at the _____ and Y at the _____ of the electrolyte cell.

135. To electroplate _____ an article with nickel requires an (i) _____ which must be a solution containing (ii) _____ ions. The article to be plated is placed on the (iii) _____ of the cell in which the plating is carried out. The (IV) _____ of the cell is made from pure nickel. The ions which are attracted to the negative electrode and discharged are called (v) _____.

136. Hydrocyanic acid has formula _____ and it is a _____ acid.

137. Electrolyte used for electroplating with nickel is _____

138. Electrolyte used for electroplating with silver is _____

139. The compound which gives oxygen on heating is _____

140. _____ is a weak electrolyte.

141. The gas obtained at the cathode by passing current through dilute HCl is _____.

142. The solid which splits up into maximum ions is _____

143. The anode used in extraction of aluminium is _____.

144. Pure water consists almost entirely of _____.

145. We can expect that pure water _____ normally conduct electricity.

146. Solid lead II bromide will not conduct an electric current. They _____ are held in a rigid crystal _____ and are not free to move to the _____.

147. When the solid is _____, it allows the passage of an electric current.

148. Lead is liberated at the _____ and bromine at the _____.

149. The decomposition of an electrolyte by an electric current is called _____.

150. According to ionic theory, the number of ions _____ with dilution in weak electrolytes.

_____

151. The ore from which aluminum is extracted must first be treated with _____ so that pure aluminium oxide can be obtained.
152. Pure aluminium oxide is dissolved in _____ to make a conducting solution.
153. Write the formula of cryolite.
154. The metal which does not react with water or dil. $H_2SO_4$ but reacts with concentrated $H_2SO_4$ is _____
155. The metal whose hydroxide does not decompose on heating but its nitrate decomposes is _____
156. The metal whose carbonate and nitrate on thermal on decomposition give a residue which is metal _____
157. The divalent metal whose oxide is reduced to metal by electrolysis of its fused salt is _____.
158. The metal whose oxide which is amphoteric is reduced _____.
159. If N is a non metal:
    (a) It will form N by electron _____
    (b) Its oxide is a/an _____ oxide.
    (c) Its ion N will form a neutral atom at the _____
    (d) Its valence shell will have _____ electron/s.
    (e) It is highly electronegative a _____ conductor of heat.
160. If M is a metal:
    (a) It will form $M^{2+}$ by electron _____
    (b) Its compound $MY_2$ is _____
    (c) $M^{2+}$ form M, a neutral atom by electron_____

(d) Its oxide MO is a/an _____oxide.

(e) M is _____ electropositive than hydrogen and can replace the _____ion in hydrochloric acid to form salt.

161. Cations are formed by _____ of electrons and anions are formed by _____ of electrons.

162. By dissolving aluminum oxide in cryolite a _____ solution is produced.

163. Metals are _____while non-metals are poor conductors of heat.

164. Metals are malleable while non-metals are _____ metals form positive ions while non-metals form _____.

165. Non-metals form acidic oxides while metals form _____.

166. The metal other than aluminium present in both magnesium and duralumin is _____

167. The metals zinc and tin are present in _____

168. German silver contains_____

169. Electrical fittings are generally made of _____

170. An alloy which is sonorous is _____

171. The major metals which make the alloy type metals are _____

172. Addition of _____to lead lowers the melting point of the alloy solder.

173. Gun metal is an example of a/an _____

174. The non-metallic components stainless steel is _____

175. Stainless steel contains in addition to iron-nickel and curium which imparts _____ to the alloy.

176. To electroplate an article with nickel requires an (i) _____ which must be a solution containing (ii) _____ions.

177. The article to be plated is placed as the _____of the cell in which the plating is carried out.

178. The _____ of the cell is made from pure nickel.

179. The ions which are attracted to the negative electrode and discharged are called _____.

180. The impurity which separates out on addition of a conc. Solution of alkali to impure bauxites _____

181. The conversion of aluminium hydroxide to pure aluminia is carried out by _____

182. Addition of cryolite in the molten state of sub division to fused aluminia during electrolytic reduction enhances _____of the electrolytic mixture.

183. During electrolytic reduction of pure aluminia, $Al^{3+}$ ions are discharged in the preference to $Na^{+}$ to $Ca^{2+}$ ions of cryolite and fluorspar at the cathode due to its _____ position in the electrochemical series.

184. During electrolytic reduction of aluminia, the inert electrode is _____ to a neutral gas.

185. An element E is in the powder state. It burns in the oxygen and the product of combustion is soluble in water. The solution of the product in water is tested with litmus solution. Complete the following sentences:

(a) if E is a metal, then the litmus solution will turn _____

(b) if E is non-metal then litmus solution will turn _____

(c) If E is a reactive metal, then _____will be evolved when E reacts with dilute sulphuric acid.

(d) If E is a metal, it will form _____oxide which will form _____with water.

(e) If E is non-metal it will not conduct electricity unless it is carbon in the form of _____.

186. Aluminium powder, a constituent of paints, prevents _____

187. Aluminium is utilized in cooking utensils since it is _____

188. Transmission of wires are made of aluminium, since aluminium is _____

189. Aluminum is an important constituent metal in duralumin since it is _____

190. A thermite mixture contains iron (III) oxide and aluminium, in which _____ is in a higher ratio in the mixture.

191. In a thermite mixture, aluminium _____iron (III) oxide.

192. Zinc is used in galvanizing, since irons forms $Fe^{2}+$ ions _____readily than zinc.

193. In dry cells, the zinc container acts as a/an _____

194. (a)_____is used in machine parts due to its (b) _____ tensile strength.

195. _____ is used in manufacture of weights and railings, since it is easily cast and expands on solidification.

196. An alloy of a metal with mercury is called (a) _____. The amalgam may be (b) _____ such as Na/Hg amalgam or in the form of (c) _____ such as Zn/Hg amalgam. (d) _____are the mixtures of mercury with a silver tin alloy. Sodium amalgam is a well known (e) _____for organic reactions.

197. Find the odd one out and explain your choice.
(i) Sulphur, phosphorus, carbon, iodine
(ii) Copper, lead, zinc, mercury

198. Correct the statement: 'Hematite is the chief ore of aluminium. '

199. The raw materials required for the extraction of iron from haematite are _____ , _____ and hot air.
200. The mineral present in haematite is _____ which is reduced by _____ to iron.
201. The melting point of an alloy is always less than that of its _____.
202. An alloy in which _____ is present as one of the constituents is called a _____ alloy.
203. Alloys are made to develop certain _____ properties not _____ by elements.

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204. Hydrogen chloride gas is not dried using _____
205. Hydrogen chloride gas on heating above 500°C gives hydrogen and chlorine. The reaction is an example of _____
206. Iron reacts with hydrogen chloride gas forming _____ and hydrogen. the reaction is an example of _____
207. Hydrogen chloride and water are example of _____ and a solution of hydrogen chloride in water _____ free ions.
208. Addition of _____ to hydrochloric acid, gives an insoluble precipitate is _____ ammonium hydroxide and _____in dilute nitric acid.
209. Addition of _____ to dilute hydrochloric acid results in liberation of hydrogen sulphide gas.
210. Aqua regia is a mixture of _____ part/s of concentrated nitric acid and _____part/s of concentrated hydrochloric acid by _____.
211. In aqua regia, nitric acid _____ hydrochloric acid to chlorine.

212. Hydrochloric acid can be converted in to chlorine by heating with _____which acts as a /an _____agent.
213. In the preparation of HCl Acid from HCl gas a funnel arrangement provides _____ surface area for the absorption of gas.
214. The salt obtained when rock salt reacts with concentrated sulphuric acid below 200°C is a/an _____ salt.
215. Saturated solution of hydrogen chloride gas in water is called concentrated hydrochloride acid, it contains _____ by weight of hydrogen chloride.
216. _____ Gas is evolved when conc. Hydrochloric acid is heated with manganese dioxide.
217. Hydrogen chloride gas on heating above 500°C gives hydrogen and chlorine gas. this reaction is an example of _____
218. Diamine silver chloride is a _____complex.
219. _____ is formed when nitric acid and hydrochloric acid are made to react together.
220. An aqueous solution of HCl gas is named _____
221. An acid which is not an oxidizing agent is _____
222. Iron reacts with hydrogen chloride forming _____

_____

223. Ammonium chloride is a soluble salt prepared by _____
224. When ammonium chloride is heated , it undergoes _____
225. Heating ammonium chloride with sodium hydroxide produces _____
226. Nitrogen and hydrogen combine in the presence of a catalyst to give (i) _____ gas. When the above mentioned gas is passed through water it forms a solution which will be (ii) _____in

nature and the solution contains (iii) _____ ions and (IV) _____ ions. The above solution when added to iron (II) sulphate solution, gives a (v) _____ coloured precipitate of iron (II) hydroxide.

227. Ammonium salt reacts with _____ to liberate ammonia.
228. _____ is not a deliquescent substance and hence is used for preparation of ammonia.
229. Ammonia gas is collected by downward displacement of _____
230. Molybdenum is used as a _____ during preparation of ammonia.
231. Presence of impurities _____ the efficiency of a catalyst.
232. Ammonia burns with a_____ flame producing nitrogen and water vapour.
233. Ammonia turns turmeric paper _____
234. The addition compound of ammonia with $CaCl_2$ is _____
235. A gas which dissolves on water to form alkaline solution is _____.
236. _____ on action with water give ammonia.
237. Ammonia is a strong _____ agent.

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238. Most of the nitric acid today is manufactured by Ostwald's process. In this process a mixture of pure dry ammonia and air in the ratio of _____by volume is first compressed and then passed over _____ and about _____°C. This results in oxidization of ammonia in to _____ which combines with _____ of the air to give _____. This is an acidic gas from which nitric acid can be obtained by simply dissolving in _____.
239. Nitric acid is also known by the name _____

240. The apparatus used for manufacturing is made of _____
241. The absorption tower used for preparation of nitric acid is packed with acid resistant _____.
242. A filter paper soaked in potassium iodide turns _____
243. Brown ring formed on the junction has the composition _____
244. Xanthoproteic acid is _____ in colour.
245. Hydrogen sulphide when bubbled through nitric acid leads to precipitation of _____
246. A metal which reacts with dilute nitric acid is _____
247. A nitrate which leaves a black residue on heating is _____
248. Basic calcium nitrate has the formula _____.
249. Sulphur can be converted to sulphuric acid using _____ nitric acid.
250. Sodium nitrate on reaction with _____ sulphuric acid produces nitric acid.
251. Sodium carbonate on reaction with _____ nitric acid produces sodium nitrate.

_____

252. Sulphuric acid is a _____ acid.
253. When hot concentrated sulphuric acid is added to sulphur, it gets oxidized to _____.
254. Pure anhydrous acid is a _____ conductor of electricity.
255. High pressure favours the _____ reaction.
256. Oleum when dilute gives you _____
257. _____tower is filled with acid resistant quartz.

258. Passing hydrogen sulphide in sulphuric acid precipitates _____

259. An explosive prepared by using sulphuric acid is _____

260. Replacing one hydrogen from sulphuric acid results in formation of _____ salt.

261. Conc. Sulphuric acid is a _____ acid.

262. Conc. Sulphuric acid is a strong _____ agent.

263. Charred spongy mass left after dehydration of sugar has the chemical formula _____

264. Oxalic acid has the chemical formula _____

265. Concentrated sulphuric acid is used in the laboratory preparation of nitric acid because it is _____ in comparison to these two acids.

266. Concentrated sulphuric acid has a _____ affinity of water.

267. Acidic properties of sulphuric acid are due to the presence of _____ ions formed when sulphuric acid dissociates in aqueous solution.

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268. The alkanes form a _____ series with the general formula _____.

269. The alkenes are _____, _____ which generally undergo _____reactions.

270. The conversion of ethanol to ethane is an example of _____.

271. Converting ethanol to ethane requires the use of _____

272. The conversion of ethane to ethane is an example of _____

273. The catalyst used in conversion of ethane to ethane is commonly_____

274. Members of the alkenes series containing ____ to _____ numbers of carbon atoms are liquids.

275. _____ is generally used as a catalyst in cracking of alkanes.

276. _____are also called olefins.

277. _____are also called paraffin's.

278. The melting point of alkenes increases with _____ in molecular weight.

279. _____and _____ are prepared by the cracking of petroleum.

280. _____ burns with a luminous and smoky flame.

281. _____ burns with a non- luminous flame.

282. _____ is a cyclic hydrocarbon.

283. _____, _____ or _____ is used as a catalyst in the hydrogenation reactions.

284. Organic compounds of carbon and hydrogen containing and a covalent bond between the carbon atoms are called _____.

285. Organic compounds of carbon and hydrogen containing one triple covalent bond between the carbon atoms are called _____.

286. Organic compounds of carbon and hydrogen containing single bonds between the carbon atoms are called_____.

287. Alkenes are the _____ series of _____ hydrocarbons.

288. Alkenes differ from alkanes due to the presence of _____bonds.

289. Alkenes mainly undergo _____ reactions.

290. When acetic acid reacts with sodium, it liberates _____ gas.

291. Commercial alcohol is made unfit for drinking by the addition of _____.

292. Enzyme _____ present in yeast turns glucose to ethanol.
293. The process by which glucose gets converted to carbon dioxide and ethanol is known as _____
294. A flame which produces temperature of about 3500°C is _____.
295. A carbon compound normally known as marsh gas is _____
296. A catalyst used for pyrolysis of ethane is _____.
297. The conversion of ethanol to ethane is an example of _____.
298. The conversion of ethane to ethane is an example of _____.
299. A saturated hydrocarbon will undergo _____ reactions whereas the typical reaction of an unsaturated hydrocarbon is _____.
300. Acetylene is _____ reactive than ethylene.
301. Ethylene is _____ reactive than ethane.
302. Formalin is the _____ solution of formaldehyde.
303. Compounds having same molecular formula but different structures, i.e., different arrangements of atoms within the molecular are called _____.
304. Ethane and water are obtained when _____ reacts with excess of acid.
305. The organic compounds containing carbon and _____atoms only are called hydrocarbons.
306. Organic compounds are generally insoluble in _____.
307. An alkyl group is formed by removing a _____ atom from the parent alkane.
308. C = C bond is _____ than C – C bond.
309. The next higher homologue of methanol is _____.

310. Ethanol containing some methanol added to it is called _____ alcohol.

_____x_____x_____x_____x_____