

Some Basic Concepts of chemistry

Set 4

Q151. The percentage of hydrogen in H_2SO_4 is:

- a) 2%
- b) 4%
- c) 6%
- d) 8%

Answer: b) 4%

Q152. The molar mass of HCl is:

- a) 34.5 g/mol
- b) 36.5 g/mol
- c) 38.5 g/mol
- d) 40.5 g/mol

Answer: b) 36.5 g/mol

Q153. The molar mass of NH_3 is:

- a) 15 g/mol
- b) 16 g/mol
- c) 17 g/mol
- d) 18 g/mol

Answer: c) 17 g/mol

Q154. The percentage of chlorine in HCl is:

- a) 75%
- b) 88%
- c) 97%
- d) 99%

Answer: b) 97%

Q155. The empirical formula of acetic acid ($\text{C}_2\text{H}_4\text{O}_2$) is:

- a) CHO
- b) CH_2O
- c) $\text{C}_2\text{H}_4\text{O}_2$
- d) C_2HO

Answer: b) CH_2O

Q156. The empirical formula of ethane (C_2H_6) is:

- a) CH
- b) CH_2

c) C_2H_6

d) C_3H_4

Answer: b) CH_3

Q157. The empirical formula of butane (C_4H_{10}) is:

a) C_2H_5

b) CH_2

c) CH

d) C_4H_{10}

Answer: a) C_2H_5

Q158. The molecular mass of O_3 is:

a) 16 g

b) 32 g

c) 48 g

d) 64 g

Answer: c) 48 g

Q159. The molecular mass of SO_2 is:

a) 64 g

b) 66 g

c) 68 g

d) 60 g

Answer: b) 64 g

Q160. The equivalent mass of Na_2CO_3 ($M = 106$) is:

a) 106

b) 53

c) 26.5

d) 21.2

Answer: b) 53

Q161. The equivalent mass of H_3PO_4 in reaction with NaOH is:

a) 98 g

b) 49 g

c) 32.6 g

d) 24.5 g

Answer: c) 32.6 g

Q162. 1 normal H_2SO_4 contains:

a) 49 g H_2SO_4 per litre

b) 98 g H_2SO_4 per litre

c) 24.5 g H_2SO_4 per litre

d) 36 g H_2SO_4 per litre

Answer: a) 49 g H_2SO_4 per litre

Q163. Normality of 2 M H_2SO_4 is:

a) 1 N

b) 2 N

c) 3 N

d) 4 N

Answer: d) 4 N

Q164. 1 molar NaOH solution contains:

a) 40 g NaOH in 1000 mL solution

b) 20 g NaOH in 1000 mL solution

c) 10 g NaOH in 1000 mL solution

d) 1 g NaOH in 1000 mL solution

Answer: a) 40 g NaOH in 1000 mL solution

Q165. The equivalent mass of HCl is:

a) 1 g

b) 18 g

c) 36.5 g

d) 20 g

Answer: c) 36.5 g

Q166. The equivalent mass of HNO_3 is:

a) 63 g

b) 31.5 g

c) 30 g

d) 32 g

Answer: a) 63 g

Q167. The empirical formula of H_2O_2 is:

a) HO

b) H_2O

c) H_2O_2

d) O_2H_2

Answer: a) HO

Q168. Which of the following is a monoatomic gas?

a) H_2

b) N_2

c) O_2

d) He

Answer: d) He

Q169. Which of the following is a noble gas?

a) O₂

b) N₂

c) He

d) Cl₂

Answer: c) He

Q170. The SI unit of energy is:

a) Erg

b) Joule

c) Calorie

d) Electron volt

Answer: b) Joule

Q171. Number of moles in 27 g of Al (M = 27) is:

a) 0.5 mol

b) 1 mol

c) 2 mol

d) 3 mol

Answer: b) 1 mol

Q172. Number of moles in 32 g of O₂ is:

a) 0.5 mol

b) 1 mol

c) 2 mol

d) 3 mol

Answer: b) 1 mol

Q173. Number of molecules in 9 g of H₂O is:

a) 3.011×10^{23}

b) 6.022×10^{23}

c) 12.044×10^{23}

d) 1.204×10^{24}

Answer: a) 3.011×10^{23}

Q174. Volume occupied by 3 mol of gas at STP is:

a) 22.4 L

b) 33.6 L

c) 44.8 L

d) 67.2 L

Answer: d) 67.2 L

Q175. Mass of 0.25 mol of CO_2 is:

a) 11 g

b) 22 g

c) 44 g

d) 5.5 g

Answer: a) 11 g

Q176. Number of moles in 8 g of CH_4 is:

a) 0.25 mol

b) 0.5 mol

c) 1 mol

d) 2 mol

Answer: b) 0.5 mol

Q177. Mass of 0.25 mol of NaOH is:

a) 5 g

b) 10 g

c) 20 g

d) 40 g

Answer: b) 10 g

Q178. Number of molecules in 0.25 mol of O_2 is:

a) 1.505×10^{23}

b) 3.011×10^{23}

c) 6.022×10^{23}

d) 12.044×10^{23}

Answer: b) 3.011×10^{23}

Q179. Mass of 4 mol of H_2 is:

a) 2 g

b) 4 g

c) 6 g

d) 8 g

Answer: d) 8 g

Q180. Number of atoms in 8 g of O_2 is:

a) 3.011×10^{23}

b) 6.022×10^{23}

c) 1.204×10^{24}

d) 2.408×10^{24}

Answer: c) 1.204×10^{24}

Q181. Number of molecules in 0.25 mol of H_2 is:

a) 1.505×10^{23}

b) 3.011×10^{23}

c) 6.022×10^{23}

d) 12.044×10^{23}

Answer: b) 3.011×10^{23}

Q182. Mass of 1 mol of H_2SO_4 is:

a) 98 g

b) 49 g

c) 36 g

d) 63 g

Answer: a) 98 g

Q183. Number of atoms in 18 g of H_2O is:

a) 6.022×10^{23}

b) 1.204×10^{24}

c) 1.806×10^{24}

d) 9.033×10^{23}

Answer: c) 1.806×10^{24}

Q184. Mass of 2 mol of Na_2CO_3 is:

a) 106 g

b) 212 g

c) 424 g

d) 53 g

Answer: b) 212 g

Q185. Mass of 0.1 mol of CH_4 is:

a) 1.6 g

b) 16 g

c) 0.8 g

d) 3.2 g

Answer: a) 1.6 g

Q186. Number of moles in 1.204×10^{24} molecules of O_2 is:

a) 1 mol

b) 2 mol

c) 0.5 mol

d) 4 mol

Answer: b) 2 mol

Q187. Mass of 0.5 mol of NH_3 is:

a) 8.5 g

b) 9 g

c) 10 g

d) 17 g

Answer: a) 8.5 g

Q188. Number of molecules in 0.5 mol of CO_2 is:

a) 3.011×10^{23}

b) 6.022×10^{23}

c) 1.204×10^{24}

d) 12.044×10^{23}

Answer: b) 6.022×10^{23}

Q189. Volume of 0.25 mol of gas at STP is:

a) 11.2 L

b) 22.4 L

c) 5.6 L

d) 2.8 L

Answer: c) 5.6 L

Q190. Number of atoms in 22 g of CO_2 is:

a) 3.011×10^{23}

b) 6.022×10^{23}

c) 9.033×10^{23}

d) 1.204×10^{24}

Answer: c) 9.033×10^{23}

Q191. Percentage of hydrogen in NH_3 is:

a) 14%

b) 17.6%

c) 82.4%

d) 11.1%

Answer: b) 17.6%

Q192. Percentage of oxygen in CO_2 is:

a) 27%

b) 50%

c) 73%

d) 88%

Answer: c) 73%

Q193. Percentage of oxygen in SO_2 is:

a) 50%

b) 48%

c) 60%

d) 32%

Answer: b) 50%

Q194. Empirical formula of glucose ($\text{C}_6\text{H}_{12}\text{O}_6$) is:

a) CHO

b) CH_2O

c) $\text{C}_2\text{H}_4\text{O}_2$

d) $\text{C}_6\text{H}_6\text{O}_6$

Answer: b) CH_2O

Q195. Empirical formula of acetic acid ($\text{C}_2\text{H}_4\text{O}_2$) is:

a) CH_2O

b) CHO

c) $\text{C}_2\text{H}_4\text{O}_2$

d) C_2HO

Answer: a) CH_2O

Q196. Percentage of carbon in C_2H_6 is:

a) 80%

b) 20%

c) 50%

d) 60%

Answer: a) 80%

Q197. Percentage of oxygen in HNO_3 is:

a) 63%

b) 50%

c) 75%

d) 66%

Answer: a) 63%

Q198. Limiting reagent in reaction: $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$ if 1 mol H_2 and 1 mol O_2 are taken:

a) H_2

b) O_2

c) H_2O

d) None

Answer: a) H_2

Q199. If 5.6 L of O_2 reacts completely with H_2 , volume of H_2O formed is:

a) 5.6 L

b) 11.2 L

c) 22.4 L

d) 2.8 L

Answer: b) 11.2 L

Q200. If 8 g of H_2 reacts with 32 g of O_2 , the limiting reagent is:

a) H_2

b) O_2

c) H_2O

d) Both

Answer: b) O_2