SBG STUDY

Q.1 125 ml of 8% w/w NaOH solution (sp. gravity 1) is added to 125 ml of 10% w/v HCl solution. The nature of resultant solution would be _____.

Q.2 The molarity of pure water is :

(A) 100 M (B) 55.6 M (C) 50 M (D) 18M

Q.3 The mole fraction of oxygen in a mixture of 7g of nitrogen and 8g of oxygen is :

(A) $\frac{8}{15}$ (B) 0.5 (C) 0.25 (D) 1.0

Q.4 The molarity of asolution of sodium chloride (mole wt. = 58.5) in water containg 5.85 gm of sodium chloride in 500 ml of solution is :-

(A) 0.25 (B) 2.0 (C) 1.0 (D) 0.2

Q.5 The molarity of 98% by wt. H_2SO_4 (d = 1.8 g/ml) is

(A) 6 M (B) 18 M (B) 10 M (D) 4 M

Q.6 Which one of the following modes of expressing concentration of solution is independent of temperature -

(A) Molarity (B) Molality (C) % w/v (D) Grams per litre

Q.7 For preparing 0.1 M solution of H_2SO_4 in one litre, we need H_2SO_4 :

(A) 0.98 g (B) 4.9 g (C) 49.0 g (D) 9.8 g

Q.8 1000 g aqueous solution of $CaCO_3$ contains 10 g of calcium carbonate concentration of the solution is :

(A) 10 ppm (B) 100 ppm (C) 1000 ppm (D) 10,000 ppm

Q.9 How much volume of 3.0 M H_2SO_4 is required for the preparation of 1.0 litre of 1.0 M solution?

(A) 300 ml (B) 320 ml (C) 333.3 ml (D) 350.0 ml

Q.10 How much water should be added to 200 cc of semimolar solution of NaOH to make it exactly decimolar :-

(A) 1000 cc (B) 400 cc (C) 800 cc (D) 600 cc

Q.11 H_2O_2 solution used for hair bleaching is sold as a solution of approximately 5.0 g H_2O_2 per 100 mL of the solution. The molecular mass of H_2O_2 is 34. The molarity of this solution is approximately:-

(A) 0.15 M (B) 1.5 M (C) 3.0 M (D) 3.4 M

Q.12 171 g of cane sugar ($C_{12}H_{22}O_{11}$) is dissolved in 1 litre of water. The molarity of the solution is :

(A) 2.0 M (B) 1.0 M (C) 0.5 M (D) 0.25 M

Q.13 How much grams of CH_3OH should be dissolved in water for preparing 150 ml. of 2.0 M CH_3OH solution

(A) 9.6 (B) 2.4 (C) 9.6×10^3 (D) 4.3×10^2

Q.14 what is false for mole fraction:

(A) $x < 1$ (B) $-2 < x < 2$ (C) $0 < x < 1$ (D) $x > 0$

Q.15 Molarity of liquid HCl if density of ~~solution~~ HCl liquid is 1.17 g/cc. :

(A) 36.5 (B) 18.25 (C) 32.05 (D) 42.10

Q.16. The molarity of a solution made by mixing 50 ml of conc. H_2SO_4 (18 M) with 50 ml. of water, is:

(A) 36 M (B) 18 M (C) 9 M (D) 6M

Q.17 Equal volumes of 10% (v/v) of HCl is mixed with 10% (v/v) NaOH solution. If density of pure NaOH is 1.5 times that of pure HCl then the resultant solution be.

(A) basic (B) neutral (C) acidic (D) can't be predicted.

Q.18 Assuming complete precipitation of AgCl, calculate the sum of the molar concentration of all the ions if 2 lit of 2M Ag_2SO_4 is mixed with 4 lit of 1 M NaCl solution is :

(A) 4M (B) 2M (C) 3 M (D) 2.5 M

Q.19 A bottle of 12 M, 75 ml HCl is diluted to 300 mL. What is the molarity of resulting HCl solution ?

(A) 1 M (B) 5 M (C) 3 M (D) 7 M