ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

FOR GOD AND COUNTRY

SOLUTION-40(CLASS-12)

TOPIC- SOLUTION

SUBTOPIC- RAOULT'S LAW

SUBJECT – CHEMISTRY **F.M. - 15**

DURATION – 30 mins **DATE -09.07.20**

1.1 **The value of Henry's constant K_H is –**

(a) Greater for gases with higher solubility (b) Greater for gases with lower solubility.

(c) Constant for all gases (d) Not related to the solubility of gases.

Ans. b

1.2 **The number of moles of NaCl in 1 litre of 1M solution is –**

(a) 1 (b) 3 (c) 9 (d) 27

Ans. a

1.3 **Considering the formation, breaking and strength of hydrogen bond, predict which of the following mixtures will show a positive deviation from Raoult's law?**

(a) Methanol and acetone(b) Chloroform and acetone(c) Nitric acid and water

(d) Phenol and aniline

Ans. a

1.4 **Low concentration of oxygen in the blood and tissues of people living at high altitude is due to-**

(a) low temperature (b) low atmospheric pressure (c) high atmospheric pressure

(d) both low temperature and high atmospheric pressure

Ans. b

1.5 **Which among the following is independent on temperature?**

(a) Molality (b) Molarity (c) (d) Normality d) Formality

Ans. a

1.6**Relative lowering of vapour pressure is a colligative property because-**

(a) It depends on the concentration of a non electrolyte solute in solution and does not depend on the nature of the solute molecules.

(b) It depends on number of particles of electrolyte solute in solution and does not depend on the nature of the solute particles.

(c) It depends on the concentration of a non electrolyte solute in solution as well as on the nature of the solute molecules.

(d) It depends on the concentration of an electrolyte or nonelectrolyte solute in solution as well as on the nature of solute molecules.

Ans. a

1.7**Which of the following is incorrect for an ideal solution?**

(a) ΔH_{mix} =0 (b) ΔV_{mix} = 0 (c) $\Delta P = P_{obs} - P_{calculated} = 0$ (d) ΔG_{mix} = 0

Ans. d

1.8 **If molality of dilute solution is doubled, the value of molal depression constant (K_f) will be**

(a) halved (b) tripled (c) unchanged (d) doubled

Ans. c

1.9 **What will be the molality of the solution containing 18.25 g of HCl gas in 500 g of water?**

a) 0.1 m b) 1 M c) 0.5 m d) 1 m

Ans. d

1.10 **If 500 mL of a 5M solution is diluted to 1500 mL, what will be the molarity of the solution obtained?**

a) 1.5 M b) 1.66 M c) 0.017 M d) 1.59 M

Ans. b

1.11**Which of the following condition is not satisfied by an ideal solution?**

(a) ΔH_{mixing} = 0 (b) ΔV_{mixing} = 0 (c) Raoult's Law is obeyed(d) Formation of an azeotropic mixture

Ans. d

1.12**The boiling point of an azeotropic mixture of water and ethanol is less than that of water and ethanol. The mixture shows-**

(a) no deviation from Raoult's Law (b) positive deviation from Raoult's Law

(c) negative deviation from Raoult's Law (d) that the solution is unsaturated

Ans.b

1.13**Which of the following is correct?**

(a) K_H increases with increase in temperature (K_H is Henry's law constant).

(b) Solubility of gas in liquid decreases with increases in temperature.

(c) K_H decreases with increase in temperature.

(d) Solubility of gas in liquid increases with increase in temperature.

Ans. a

1.14**Which of the following solutions have the same concentration?**

a) 20 g of NaOH in 200 mL of solution b) 0.5 mol of KCl in 200 mL of solution

c) 40 g of NaOH in 100 mL of solution d) 20 g of KOH in 200 mL of solution

Ans.a and b

1.15**If the density of a solution is 3.12 g mL^{-1}, the mass of 1.5 mL solution in significant figures is-**

a) 4.7g b) 4680×10^{-3} g c) 4.680g d) 46.80g

Ans. a

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