## **ST. LAWRENCE HIGH SCHOOL**

A JESUIT CHRISTIAN MINORITY INSTITUTION





TOPIC- SOLUTION <u>SUBTOPIC</u>- SOLUBILITY AND HENRY'S LAW SUBJECT – CHEMISTRY DURATION – 30 mins

WORKSHEET-39(CLASS-12)

F.M. - 15 DATE -08.07.20

1.1 The molality of pure water is-

(a) 55.5(b) 50.5(c) 18(d) 60.5

## 1.2 The number of moles of NaCl in 3 litres of 3M solution is -

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

## 1.3 4L of 0.02 M aqueous solution of NaCl was diluted by adding one litre of water. The molality of the resultant solution is-

(A) 0.004 (b) 0.008(c) 0.012(d) 0.016

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

1.5 Concentration  $H_2SO_4$  is 98 %  $H_2SO_4$  by mass has d = 1.84 g cm<sup>-3</sup>. Volume of acid required to make one litre of 0.1 M  $H_2SO_4$  is-

(a) 5.55 ml (b) 10 ml (c) 20 ml (d) 30 ml

### 1.6What is mole fraction of solute in 1.00 m aqueous solution?

(a) 0.0354(b) 0.0177(c) 0.177(d) 1.770

# 1.7When 1 mole of benzene is mixed with 1 mole of toluene (vapour pressure of benzene – 12.8 kPa, Toluene = 3.85 kPa)-

(a) The vapour will contain equal amount of benzene and toluene.

- (b) Not enough information is given for prediction.
- (c) The vapour will contain a higher percentage of benzene.
- (d) The vapour will contain higher percentage of toluene.

### 1.8Which of the following is incorrect for an ideal solution?

(a)  $\Delta H_{mix} = 0(b) \Delta V_{mix} = 0(c) \Delta P = P_{obs} - P_{calculated} = 0(d) \Delta G_{mix} = 0$ 

1.9 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

1.10 Mole fraction of glycerine C<sub>3</sub>H<sub>5</sub>(OH)<sub>3</sub> in solution containing 36 g of water and 46 g of glycerine is-(a) 0.46(b) 0.40(c) 0.20(d) 0.36

# 1.11 Out of molality (m), molarity (M), formality (F) and mole fraction (x), those which are independent of temperature are-

(a) M, m(b) F, x(c) m, x(d) M, x

### 1.12Which of the following condition is not satisfied by an ideal solution?

(a)  $\Delta H_{\text{mixing}} = 0(b) \Delta V_{\text{mixing}} = 0(c)$  Raoult's Law is obeyed(d) Formation of an azeotropic mixture

## 1.13 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

### 1.14With rise in temperature the solubility of a gaseous solute within liquid solvent-

a) Increasesb) Decreases c) Remains unaffected d) None of the above

#### 1.15Which among the following is not a colligative property?

a) Viscosity b) Osmotic pressure c) elevation in boiling pointd) Depression in freezing point

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