LAKSHYA (JEE)

Solution

DPP-08

1. The lowering of vapour pressure of a solvent by addition of a non-volatile solute to it is directly proportional to :
   (A) The strength of the solution
   (B) The nature of the solute in the solution
   (C) The atmospheric pressure
   (D) All

2. The relative lowering of vapour pressure is equal to the mole fraction of the nonvolatile solute, This statement was given by :
   (A) Raoult
   (B) Henry
   (C) Joule
   (D) Dalton

3. The vapour pressure of a solution having solid as solute and liquid as solvent is :
   (A) Directly proportional to mole fraction of the solvent
   (B) Inversely proportional to mole fraction of the solvent
   (C) Directly proportional to mole fraction of the solute
   (D) Inversely proportional to mole fraction of the solute

4. If P_0 and P_S are the vapour pressure of solvent and its solution respectively. N_1 and N_2 are the mole fraction of solvent and solute respectively then :
   (A) $P_s = \dfrac{P_0}{N_2}$
   (B) $P_0 - P_s = P_0 N_2$
   (C) $P_s = P_0 N_2$
   (D) $\dfrac{(P_0 - P_s)}{P_s} = \dfrac{N_1}{(N_1 + N_2)}$

5. One mol of non volatile solute is dissolved in two mol of water. The vapour pressure of the solution relative to that of water is
   (A) $\dfrac{2}{3}$
   (B) $\dfrac{1}{3}$
   (C) $\dfrac{1}{2}$
   (D) $\dfrac{3}{2}$

6. The vapour pressure of a dilute aqueous solution of Glucose is 750 mm of mercury at 373 K. The mole fraction of solute is :
   (A) $\dfrac{1}{10}$
   (B) $\dfrac{1}{7.6}$
   (C) $\dfrac{1}{35}$
   (D) $\dfrac{1}{76}$

7. The vapour pressure of water at room temperature is 23.8 mm of Hg. The vapour pressure of an aqueous solution of sucrose with mole fraction 0.1 is equal to:
   (A) 23.9 mm Hg
   (B) 24.2 mm Hg
   (C) 21.42 mm Hg
   (D) 31.44 mm Hg

8. The vapour pressure of pure A is 10 torr and at the same temperature when 1g of B is dissolved in 20 gm of A, its vapour pressure is reduced to 9.0 torr. If the molecular mass of A is 200 amu, then the molecular mass of B is:
   (A) 100 amu
   (B) 90 amu
   (C) 75 amu
   (D) 120 amu

9. The vapour pressure of benzene at 90°C is 1020 torr. A solution of 5 g of a solute in 58.5 g benzene has vapour pressure 990 torr. The molecular weight of the solute is?
   (A) 220
   (B) 120
   (C) 320
   (D) 222

10. The vapour pressure of a pure liquid solvent (X) is decreased to 0.60 atm. from 0.80 atm on addition of a non volatile substance (Y). The mole fraction of (Y) in the solution is:-
    (A) 0.20
    (B) 0.25
    (C) 0.5
    (D) 0.75

ANSWERS

1. (A)
2. (A)
3. (A)
4. (B)
5. (A)
6. (D)
7. (C)
8. (B)
9. (A)
10. (B)

Note - If you have any query/issue

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