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**Level – I**

**(Based on Henry’s Law)**

1. Maximum amount of solid solute that can be dissolved in specific amount of given liquid solvent does not depend upon :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Temperature | b) Nature of solute | c) Pressure | d) Nature of solvent |

1. Low concentrations of oxygen in tissues of people living at high altitudes is due to :

|  |  |
| --- | --- |
| a) Low temperature | b) Low atmospheric pressure |
| c) High atmospheric pressure | d) Both (a) and (c) |

1. The value’s of Henry’s constant KH 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 |

1. The concentration of solution with its vapour pressure is related in terms of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Mole fraction | b) Parts per million | c) Mass percentage | d) Molality |

1. Henry’s law constant for dissolution of CH4­ in benzene at 298 K is 2 x 105 mm of Hg. Then solubility of CH4­ in benzene at 298 K (in terms of mole fraction) under 760 mm of Hg is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1.2 x 10 – 5 | b) 3.8 x 10 – 3 | c) 4 x 10 – 7 | d) 1 x 10 – 2 |

1. Which of the following gas does not obey Henry’s law?

|  |  |  |  |
| --- | --- | --- | --- |
| a) NH3 | b) H2 | c) O2 | d) He |

**Answers**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. c | 1. b | 1. b | 1. a | 1. b | 1. a |

**Fill in the Blanks**

1. Ionic solids are generally soluble in \_\_\_\_\_\_\_\_ solvents.
2. The solubility of a solute decreases with increase of temperature if dissolution is \_\_\_\_\_\_\_\_\_\_\_\_.
3. Aquatic species are more comfortable in cold water due to \_\_\_\_\_\_\_ solubility of oxygen.
4. With increase of temperature, KH for gases increases whereas solubility \_\_\_\_\_\_\_\_.

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1. Sea divers for breathing inside sea use a mixture of O2 and the inert gas \_\_\_\_\_\_.
2. At altitudes, concentration of oxygen in the blood is low. People feel weak and unable to think. This disease is called \_\_\_\_\_\_\_\_\_\_.

**Answers**

1. Polar 2. Exothermic 3. High 4. Decreases 5. He 6. Anoxia

**True – False**

1. Aquatic species are less comfortable in cold water in compared to warm water.
2. To increase the solubility in CO2 in soft drinks and soda water, the bottle is sealed under low pressure and high temperature.
3. The value of Henry’s constant (KH) is constant for all gases.
4. For a gas dissolved in water, Henry’s constant (KH) increases with increase in temperature.

**Answers**

1. False 2. False 3. False 4. True

**Matching Type Questions**

1. Column I Column II

|  |  |
| --- | --- |
| (i) High KH for a particular gas indicates | (a) High temperature, High solubility |
| (ii) Low KH for a particular gas indicates | (b) Low temperature, High solubility |
|  | (c) High temperature, Low solubility |
|  | (d) low temperature, Low solubility |

1. Column I Column II

|  |  |
| --- | --- |
| (i) Gaseous solution | (a) Oxygen dissolved in water |
| (ii) Solid solution | (b) Glucose dissolved in water |
|  | (c) Camphor in nitrogen gas |
|  | (d) Copper dissolved in gold |

**Answers**

1. (i) – c ; (ii) – b 2. (i) – c ; (ii) – d

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