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**PERIODIC TEST**

**GRADE – XII MARK - 20**

**SUBJECT – CHEMISTRY TIME – 40 MINS**

**GENERAL INSTRUCTIONS:**

1. All Questions are compulsory.
2. Question number 1 to 5 carry 1 mark.
3. Question number 6, 7 carry 2 marks.
4. Question number 8, 9 carry 3 marks.
5. Question number 10 carry 5 marks.

1. The molarity of a solution obtained by mixing 750mL of 0.5 M HCl with 250mL of 2M HCl

 a) 0.975M b) 0.875M

 c) 1.00M d) 1.175M

2. Low concentration of oxygen in the blood and tissues of people living at high altitudes is due to -----------------

a) low temperature b) low atmospheric pressure

c) high atmospheric pressure d) both low temperature and pressure

3. At equilibrium the rate of dissolution of a solid solute in a volatile liquid solvent is --------

a) less than the rate of crystallization

b) greater than the rate of crystallization

c) equal to the rate of crystallization

d) Zero

4. The amount of solute (m.m=60 g/mol) that must be added to 180 g of water so that the vapour pressure of water is lowered by 10% is

a) 30 g b) 60g

c) 120 g d) 24g

5. The value of Henry’s constant 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

6. At the same temperature, hydrogen is more soluble in water in helium. Which of them will have a higher value of KH and why?

7. Why is the vapour pressure of a solution of glucose in water lower than that of water?

8. Henry’s law constant for the molality of methane in benzene at 298 K is 4.27 x 105 mm Hg. Calculate the solubility of methane in benzene at 298 K under 760 mm Hg.

9. a. How can you justify the observation that vapour pressure of solution of a non-volatile solute in a given solvent is less than that of the pure solvent?

 b. How is the molality of a solution different from its molarity?

10. a. Why dissolution of some solids are exothermic while that of some others are endothermic?

 b. State Henry’s Law correlating the pressure of a gas and its solubility in a solvent and mention two applications for the law.