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**O.P.JINDAL SCHOOL,SAVITRINAGAR**

**PERIODIC TEST –I(R-1) (2026-27)**

**CLASS-XII** **MAX.MARKS-20**

**SUBJECT-CHEMISTRY** **MAX.TIME-1HOUR**

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**General Instruction:-**

(i)All questions are compulsory .There are 12 questions in this question paper with internal choice.

(ii)**SECTION –A:** Question numbers 1 to 6 are MCQs , carrying 1 mark each.

(iii) **SECTION –B:** Question numbers 7 to10 are short answer questions carrying 2 marks each.

(iv)**SECTION –C:** Question numbers 11 and 12 are long questions carrying 3marks each.

(v)Use of calculator is not permitted. However, you may use log tables, if necessary.

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## SECTION-A

**Q-1.** If the molality of a dilute solution is doubled,the value of molal depression constant will be :

(a)Halved (b)Tripled

(c)Unchanged (d) Doubled

**Q-2.**Isotonic solutions are the solutions having the same

(a)Osmotic pressure (b)Vapour pressure

(c)Osmotic pressure (d)viscocity

**Q-3.** The number of moles of NaCl in 3litres of 3M solution is :

(a)1 (b)3

(c)9 (d)27

**Q-4.** Vapour pressure of two liquids P and Q are 80 mm and 60 mm respectively.What will be the vapour pressure of the solution obtained by mixing 3 moles of P and 2 moles of Q ?

(a)140 mm (b)20 mm

(c)68 mm (d)72 mm

**Q-5.** van't Hoff factor for$Na_2SO$ .$10H_2O$ solution, assuming the complete ionization is

(a)1 (b)2

(c)13 (d)3

**Q-6.** The amount of solute required to prepare 10 litres of decimolar solution is :

(a)0.01 mole (b)0.2 mole

(c)0.05 mole (d)1.0 mole

**Q-7.**What is the mole fraction of the solute in 2.5 m aqueous solution?

**Q-8.** What is meant by negative deviation from Rault's law?Draw a digram to illustrate the relationship between vapour pressure and mole fraction of components in a solution to represent negative deviation.

OR

State Henry's law and mentions its two important applications

**Q-9.** State Raoult's law for a solution containing volatile components. How does Raoult's law become a special case of Henry's law ?

**Q-10.**(i)Which out of molarity or molality will change with the change in temperature and why?
(ii)At same temperature,hydrogen is more soluble than helium.Which of them will have a higher value of $K_H$ and why?

**Q-11.** i)What is the difference between molarity and molality of a solution ?
(ii)A solution of glucose ($C_6H_{12}O_6$) in water is labeled as 10% by weight.What would be the molality of the solution.

OR

Calculate the mass of ascorbic acid($C_6H_8O_6$) to be dissolved in 75g of acetic acid to lower its melting point by 1.5 $^0$C.($K_f$ for acetic acid=3.9 K kg mol$^{-1}$)

**Q-12.** 18g 0f glucose isdissolved in 1 kg of water in a sauce pan.At what temperature will this solution boil ? ($K_b$ for water = 0.52 K kgmol$^{-1}$ , bp of water=373.15K)

OR

36 g of glucose dissolved per litre of the solution has an osmotic pressure of 4.98 bar at 300 K.If the osmotic pressure of the solution is 1.76 bar at the same temperature,then what would be its concentration ?