

DPP

DAILY PRACTICE PROBLEMS

CLASS : XIth
DATE :

SUBJECT : CHEMISTRY
DPP No. : 8

Topic :-SOLUTION

- Which has minimum osmotic pressure?
a) 200 mL of 2 M NaCl solution
b) 200 mL of 2 M glucose solution
c) 200 mL of 2 M urea solution
d) All have same osmotic pressure
- Which of the following solutions will have the highest boiling point?
a) 0.1 M BaCl₂ b) 0.1 M FeCl₃ c) 0.1 M NaCl d) 0.1 M urea
- Solubility of solutes which dissolve with the liberation of heat decreases with :
a) Decrease in temperature
b) Increase in temperature
c) No change in temperature
d) None of the above
- A binary liquid solution is prepared by mixing *n*-heptane and ethanol. Which one of the following statements is correct regarding the behaviour of the solution?
a) The solution formed is an ideal solution
b) The solution is non-ideal, showing positive deviation from Raoult's law
c) The solution is non-ideal, showing negative deviation from Raoult's law
d) *n*-heptane shows positive deviation while ethanol show negative deviation from Raoult's law
- A 0.0020 m aqueous solution of an ionic compound Co(NH₃)₅(NO₂)Cl freezes at -0.00732 C. Number of moles of ions which 1 mol of ionic compound produces on being dissolved in water will be : ($K_f = + 1.86^\circ\text{C}/\text{m}$)
a) 1 b) 2 c) 3 d) 4
- Solutions *A*, *B*, *C* and *D* are respectively 0.1 M glucose, 0.05 M NaCl, 0.05 M BaCl₂ and 0.1 M AlCl₃. Which one of the following pairs is isotonic?
a) *A* and *B* b) *B* and *C* c) *A* and *D* d) *A* and *C*
- Colligative properties of a solution depends upon
a) Nature of both solvent and solute
b) Nature of solute only
c) Nature of solvent only
d) The relative number of solute and solvent particles

8. A solution of sucrose (molar mass=342 g/mol) is prepared by dissolving 68.4 g of it per litre of the solution, what is its osmotic pressure ($R = 0.082 \text{ L atm K}^{-1} \text{ mol}^{-1}$) at 273 K?
a) 3.92 atm b) 4.48 atm c) 5.92 atm d) 29.4 atm
9. The values of observed and calculated molecular weights of silver nitrate are 92.64 and 170 respectively. The degree of dissociation of silver nitrate is :
a) 60% b) 83.5% c) 46.7% d) 60.23%
10. Saturated solution of NaCl on heating becomes :
a) Super saturated b) Unsaturated c) Remains saturated d) None of these
11. 20 g of hydrogen is present in a 5 L vessel. The molar concentration of hydrogen is
a) 1 b) 2 c) 3 d) 4
12. The molarity of pure water is
a) 55.6 b) 5.56 c) 6.55 d) 65.5
13. Assuming that sea water is a 3.50 weight per cent aqueous solution of NaCl. What is the molality of sea water?
a) 0.062 m b) 0.0062 m c) 0.62 m d) 6.2 m
14. The condition under which Nernst distribution law will not hold true is :
a) Temperature is constant
b) The molecular state of the solute is the same in both solvents
c) The solute does not cause any change in the mutual solubility of the two solvents
d) None of the above
15. An ideal solution is that which
a) Obey Raoult's law b) Shows positive deviation from Raoult's law
c) Shows negative deviation from Raoult's law d) Has no connection with Raoult's law
16. The relative lowering of vapour pressure of an aqueous solution containing non-volatile solute is 0.0125. The molality of the solution is
a) 0.1 M NaCl b) 0.1 M BaCl₂ c) 0.1 M sucrose d) 0.1 M KCl
17. Among the following substances, the lowest vapour pressure is exerted by :
a) Water b) Mercury c) Kerosene d) Rectified spirit
18. If 5.85 g NaCl (molecular weight 58.5) is dissolved in water and the solution is made up to 0.5 L, the molarity of the solution will be
a) 0.1 b) 0.2 c) 0.3 d) 0.4

19. The sum of mole fractions of A , B and C in an aqueous solution containing 0.2 moles of each A , B and C is
- a) 0.6 b) 0.2 c) 1.0 d) 1.2
20. To neutralise completely 20 mL of 0.1 M aqueous solution of phosphorous acid (H_3PO_3), the volume of 0.1 M aqueous KOH solution required is
- a) 10 mL b) 20 mL c) 40 mL d) 60 mL

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