DPP
DAILY PRACTICE PROBLEMS

CLASS : XIth   SUBJECT : CHEMISTRY
DATE :   DPP No. : 5

Topic :-SOLUTIONS

1. The vapour pressure of a liquid in a closed container depends upon
   a) Amount of liquid
   b) Surface area of the container
   c) Temperature
   d) None of the above

2. The vapour pressure of a solution is proportional to :
   a) Mole fraction of solute
   b) 1/(mole fraction of solute)
   c) Mole fraction of solvent
   d) None of the above

3. At $25°C$ a 5% aqueous solution of glucose (molecular weight $= 180$ g mol^{-1}) is isotonic with 2% aqueous solution containing an unknown solute. What is the molecular weight of the unknown solute.
   a) 60   b) 80   c) 72   d) 63

4. The spontaneous movement of solute particles from a more concentrated solution to less concentrated solution is called :
   a) Osmosis   b) Diffusion   c) Plasmolysis   d) Fusion

5. How many grams of a sucrose (mol wt. $= 342$) should be dissolved in 100 g water in order to produce a solution with a 105.0℃ difference between the freezing point and boiling temperature? ($k_f = 1.86$ C/m, $k_b = 0.151℃$)
   a) 34.2 g   b) 72 g   c) 342 g   d) 460 g

6. A solution of urea (mol. mass 56) boils at 100.18 C at atmospheric pressure. If K_f and K_b for water are 1.86 and 0.512 K molality^{-1} respectively, the above solution will freeze at :
   a) -6.54 C   b) 6.54 C   c) -0.654 C   d) 0.654 C

7. 19.85 mL of 0.1 N NaOH reacts with 20 mL of HCl solution for complete neutralization. The molarity of HCl solution is
   a) 9.9   b) 0.99   c) 0.099   d) 0.0099

8. The vapour pressure will be lowest of
   a) 0.1 M sugar solution
   b) 0.1 M KCl solution
   c) 0.1 M $Cu(NO_3)_2$ solution
   d) 0.1 M $AgNO_3$ soution

9. Which one is correct?
   a) Molality changes with temperature.
   b) Molality does not change with temperature.
   c) Molarity does not change with temperature.
   d) Normality does not change with temperature.

10. What is molality of a solution in which
    (18 g glucose mol. wt. = 180) is dissolved in 500 g of water?
    a) 1 m
    b) 0.5 m
    c) 0.2 m
    d) 2 m

11. Which of the following solution in water possesses the lowest vapour pressure?
    a) 0.1 (N) $BaCl_2$
    b) 0.1 (M)NaCl
    c) 0.1 (M) KCl
    d) None of these

12. A 5.25% solution of a substance is isotonic with a 1.5% solution of urea (molar mass =60 gmo l^{-1}) in the same solvent. If the densities of both the solutions are assumed to be equal to 1.0 g c m^{-3}, molar mass of the substance will be
    a) 90.0 g mol^{-1}
    b) 115.0 g mol^{-1}
    c) 105.0 g mol^{-1}
    d) 210.0 g mol^{-1}

13. Which of the following solutions will have highest boiling point
    a) 0.1 M $FeCl_3$
    b) 0.1 M $BaCl_2$
    c) 0.1 M NaCl
    d) 0.1 M urea ($NH_2 CONH_2$)

14. At25°C , the highest osmotic pressure is exhibited by 0.1 M solution of
    a) Decinormal aluminium sulphate
    b) Decinormal barium chloride
    c) Decinormal sodium chloride
    d) A solution obtained by mixing equal volumes of (b) and (c) and filtering

15. Molarity of 0.2 N H_2SO_4 is
    a) 0.1
    b) 0.2
    c) 0.3
    d) 0.4

16. The ionic strength of solution containing 0.1 mol/kg of KCl and 0.2 mol/kg of $Cu\,SO_4$ is
    a) 0.3
    b) 0.6
    c) 0.9
    d) 0.2

17. 25 mL of a solution of barium hydroxide on titration with 0.1 molar solution of hydrochloric acid gave a titre value of 35 mL. The molarity of barium hydroxide solution was
    a) 0.07
    b) 0.14
    c) 0.28
    d) 0.35

18. The freezing point of equimolal aqueous solution will be highest for
    a) $C_6H_5NH_3Cl$
    b) $La(NO_3)_3$
    c) $C_6H_{12}O_6$
    d) $Ca(NO_3)_2$

19. The normality of a 100 mL solution of sodium hydroxide which contains 4 g of NaOH, is
    a) 0.5   b) 1.0   c) 1.5   d) 2.0

20. For determination of molecular weights, Raoult's law is applicable only to
    a) Dilute solutions of electrolytes   b) Concentration solution of electrolytes
    c) Dilute solutions of non electrolytes   d) Concentration solution of non electrolytes