CHEMISTRY CLASS 12 BATCH

SOLUTIONS

DPP-02

1. At vapour pressure
(1) $(rate)_{evaporation} = (rate)_{condensation}$
(2) $(rate)_{evaporation} > (rate)_{condensation}$
(3) $(rate)_{evaporation} < (rate)_{condensation}$
(4) None of the above

2. Vapour pressure is achieved in
(1) open container (2) closed container
(3) both (1) & (2) (4) none of these

3. At vapour pressure
(1) forward change is favoured
(2) backward change is favoured
(3) both forward & backward changes are favoured but with equal rate
(4) none of these

4. Among the following, which has highest boiling point?
(1) Water (2) Ethyl alcohol
(3) Acetone (4) Chloroform

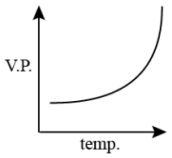
5. The factor which affect vapour pressure is
(1) forces between liquid molecules
(2) temperature
(3) volatile solute
(4) all of these

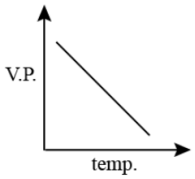
6. Change in surface area has following effect on vapour pressure
(1) increases
(2) decreases
(3) do not affects vapour pressure
(4) none of the above

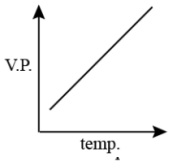
7. The vapour pressure of ethanol is 115 torr at 34.9°C. if ΔH_{vap} of ethanol is 38.6 kJ/mol. Calculate the temp. (°C) when then vapour pressure is 760 torr.
(1) 69°C
(2) 89°C
(3) 99°C
(4) 79°C

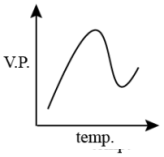
8. If vapour pressure of 10 gram of a liquid solution is 'P', then what is the vapour pressure of 5 gram of same liquid solution?
(1) P (2) 2P
(3) P/2 (4) none of these

9. The correct relationship of vapour pressure and temperature is given by

(1) 

(2) 

(3) 

(4) 

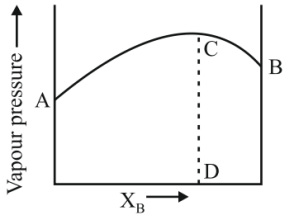
10. According to Raoult's law, vapour pressure of a solution containing non-volatile solute, is directly proportional to mole fraction of
(1) solute
(2) solvent
(3) both solute and solvent
(4) none of these

11. If $P^\circ \rightarrow$ vapour pressure of solvent and
$P \rightarrow$ vapour pressure of solution then
(assume the solute used is non-volatile)
(1) $P^\circ > P$ (2) $P^\circ < P$
(3) $P^\circ = P$ (4) none of these

12. Which of the following is not a characteristic of ideal solution?
(1) $\Delta V_{mix} = 0$ (2) $\Delta S_{mix} = +ve$
(3) $\Delta H_{mix} = 0$ (4) $\Delta G_{mix} = +ve$

13. Solutions in which both the component has nearly same polar nature as well as molecular size will form.
(1) ideal solution (2) non-ideal solution
(3) Both (1) & (2) (4) None of these

14. The diagram given below is a vapour pressure composition diagram for a binary solution of A and B.



In the solution, A – B interactions are
(1) similar to A – A and B – B interactions
(2) greater than A – A and B – B interactions
(3) smaller than A – A and B – B interactions
(4) unpredictable

15. Solution of methanol and ethanol will form
(1) ideal solution
(2) non-ideal solution with positive deviation
(3) non-ideal solution with negative deviation
(4) none

16. A solution consists of two components X and Y. Which of the following relation of inter action between molecules is true for ideal solution of X and Y?
(1) $X - X = Y - Y \neq X - Y$
(2) $X - X \neq Y - Y = X - Y$
(3) $X - X \neq Y - Y \neq X - Y$
(4) $X - X = Y - Y = X - Y$

17. Which of the following is the correct mathematical expression for ideal solution of A and B?
(1) $P = P_A^o X_A + P_B^o X_B$
(2) $P > P_A^o X_A + P_B^o X_B$
(3) $P < P_A^o X_A + P_B^o X_B$
(4) None

18. A solution which boils at constant temperature is called
(1) Azeotrope (2) Ideal solution
(3) Saline water (4) Alkaline solution

19. A mixture of water and benzene is a/an
(1) ideal solution
(2) non-ideal solution with positive deviation
(3) non-ideal solution with negative deviation
(4) none of these

20. An azeotropic mixture of two liquids boils at a lower temperature than either of them when
(1) it is saturated
(2) it does not deviate from Raoult's law
(3) it shows negative deviation from Raoult's law
(4) it shows positive deviation from Raoult's law

21. Which of the following is not a characteristic of non-ideal solution with positive deviation?
(1) $\Delta V_{mix} > 0$ (2) $\Delta H_{mix} > 0$
(3) $\Delta S_{mix} < 0$ (4) $\Delta G_{mix} < 0$

22. A solution of strong acid and water is an
(1) ideal solution
(2) non-ideal solution with positive deviation
(3) non-ideal solution with negative deviation
(4) none of the above

23. A non-ideal solution with negative deviation are called
(1) maximum boiling azeotropes
(2) minimum boiling azeotropes
(3) both (1) & (2)
(4) none of these

24. Which of the following is a characteristic of non-ideal solution with negative deviation?
(1) $\Delta V_{mix} < 0$ (2) $\Delta H_{mix} > 0$
(3) $\Delta S_{mix} < 0$ (4) $\Delta G_{mix} > 0$

25. The correct expression for vapour pressure of a solution contain volatile Solute A and Solvent B is
(1) $P = P_A^o X_A - P_B^o X_B$
(2) $P = P_A^o + (P_B^o \times P_A^o) X_B$
(3) $P = P_B^o + (P_A^o - P_B^o) X_A$
(4) None of the above

26. A container contains component A with P_A^o = 200 mm and component B of P_B^o = 500 mm. If moles of A = 2 and moles of B = 3, find vapour pressure of solution if solute is volatile.
(1) 120 mm
(2) 520 mm
(3) 380 mm
(4) 420 mm

ANSWER KEY

1.	(1)
2.	(2)
3.	(3)
4.	(1)
5.	(4)
6.	(3)
7.	(4)
8.	(1)
9.	(1)
10.	(2)
11.	(1)
12.	(4)
13.	(1)
14.	(3)
15.	(1)
16.	(4)
17.	(1)
18.	(1)
19.	(2)
20.	(4)
21.	(3)
22.	(3)
23.	(1)
24.	(1)
25.	(3)
26.	(3)