LAKSHYA (JEE)

Solution

DPP - 12

1. Which of the following solution in water possesses the lowest vapour pressure

(A) $0.1(M)\,NaCl$ (B) $0.1(N)\,BaCl_2$

(C) $0.1(M)\,KCl$ (D) None of these

2. In equimolar solution of glucose, $NaCl$ and $BaCl_2$, the order of osmotic pressure is as follow

(A) Glucose > $NaCl$ > $BaCl_2$

(B) $NaCl$ > $BaCl_2$ > Glucose

(C) $BaCl_2$ > $NaCl$ > Glucose

(D) Glucose > $BaCl_2$ > $NaCl$

3. At $25^\circ C$, the highest osmotic pressure is exhibited by $0.1M$ solution of

(A) $CaCl_2$ (B) KCl

(C) Glucose (D) Urea

4. Which of the following aqueous solutions containing 10 gm of solute in each case has highest B.P.

(A) NaCl solution (B) KCl solution

(C) Sugar solution (D) Glucose solution

5. Which one has the highest boiling point

(A) $0.1N\,Na_2SO_4$ (B) $0.1N\,MgSO_4$

(C) $0.1M\,Al_2(SO_4)_3$ (D) $0.1M\,BaSO_4$

6. Which has the minimum freezing point

(A) One molal $NaCl$ solution

(B) One molal KCl solution

(C) One molal $CaCl_2$ solution

(D) One molal urea solution

7. Which of the following will have the highest F.P. at one atmosphere

(A) $0.1M\,NaCl$ solution (B) $0.1M$ sugar solution

(C) $0.1M\,BaCl_2$ solution (D) $0.1M\,FeCl_3$ solution

8. Which of the following has minimum freezing point

(A) $0.1M\ K_2Cr_2O_7$ (B) 0.1 $M\ NH_4Cl$

(C) 0.1 $M\ BaSO_4$ (D) 0.1 $M\ Al_2(SO_4)_3$

9. Which of the following $0.10\,m$ aqueous solution will have the lowest freezing point

(A) $Al_2(SO_4)_3$ (B) $C_5H_{10}O_5$

(C) KI (D) $C_{12}H_{22}O_{11}$

10. Which of the following salt has the same value of Van't Hoff factor i as that of $K_3[Fe(CN)_6]$

(A) $Al_2(SO_4)_3$ (B) $NaCl$

(C) Na_2SO_4 (D) $Al(NO_3)_3$

11. The ratio of the value of any colligative property for KCl solution to that for sugar solution is nearly

(A) 1 (B) 0.5

(C) 2.0 (D) 3

12. Van't Hoff factor of $Ca(NO_3)_2$ is

(A) 1 (B) 2

(C) 3 (D) 4

13. If α is the degree of dissociation of Na_2SO_4, the Vant Hoff's factor (i) used for calculating the molecular mass is

(A) $1+\alpha$ (B) $1-\alpha$

(C) $1+2\alpha$ (D) $1-2\alpha$

14. Which of the following compounds corresponds Van't Hoff factor to be equal to 2 for dilute solution

(A) K_2SO_4 (B) $NaHSO_4$

(C) Sugar (D) $MgSO_4$

15. The molecular weight of benzoic acid in benzene as determined by depression in freezing point method corresponds to

(A) Ionization of benzoic acid

(B) Dimerization of benzoic acid

(C) Trimerization of benzoic acid

(D) Solvation of benzoic acid

[ANSWERS]

1. (B)
2. (C)
3. (A)
4. (A)
5. (C)
6. (C)
7. (B)
8. (D)
9. (A)
10. (A)
11. (C)
12. (C)
13. (C)
14. (D)
15. (B)

Note - If you have any query/issue

Mail us atsupport@physicswallah.org