

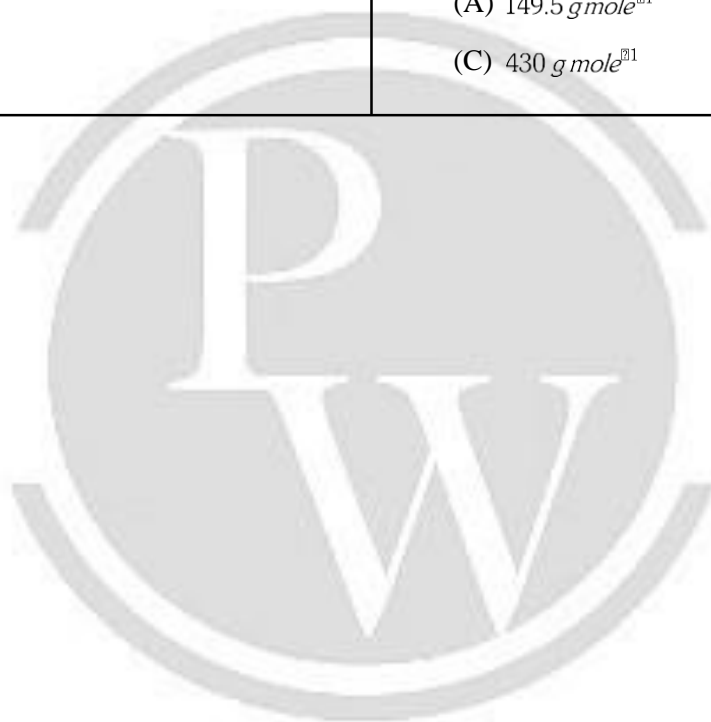
LAKSHYA (JEE)

Solution

DPP - 11

- The concentration in *gms per litre* of a solution of cane sugar ($M=342$) which is isotonic with a solution containing 6 *gms* of urea ($M=60$) per litre is
 (A) 3.42 (B) 34.2
 (C) 5.7 (D) 19
- Osmotic pressure is 0.0821 atm at temperature of 300 K. Find concentration in *mole/litre*
 (A) 0.033 (B) 0.066
 (C) 0.33×10^{-2} (D) 3
- A solution contains non-volatile solute of molecular mass M_p . Which of the following can be used to calculate molecular mass of the solute in terms of osmotic pressure (m = Mass of solute, V = Volume of solution and π = Osmotic pressure)
 (A) $M_p = \frac{m}{V} VRT$ (B) $M_p = \frac{m}{V} RT$
 (C) $M_p = \frac{m}{V} \frac{RT}{\pi}$ (D) $M_p = \frac{m}{V} \pi RT$
- In osmosis
 (A) Solvent molecules move from higher concentration to lower concentration
 (B) Solvent molecules move from lower to higher concentration
 (C) Solute molecules move from higher to lower concentration
 (D) Solute molecules move from lower to higher concentration
- Semipermeable membrane is that which permits the passage of
 (A) Solute molecules only
 (B) Solvent molecules only
 (C) Solute and solvent molecules both
 (D) Neither solute nor solvent molecules
- Two solutions A and B are separated by semi-permeable membrane. If liquid flows from A to B then
 (A) A is less concentrated than B
 (B) A is more concentrated than B
 (C) Both have same concentration
 (D) None of these
- Isotonic solutions have
 (A) Equal temperature
 (B) Equal osmotic pressure
 (C) Equal volume
 (D) Equal amount of solute
- Osmotic pressure of a solution (density is 1g/ml) containing 3g of glucose (molecular weight = 180) in 60 g of water at 15°C is
 (A) 0.34 atm (B) 0.65 atm
 (C) 6.25 (D) 5.57 atm
- The value of osmotic pressure of a 0.2 M aqueous solution at 293K is
 (A) 8.4 atm (B) 0.48 atm
 (C) 4.8 atm (D) 4.0 atm
- Solutions having the same osmotic pressure under a given set of conditions are known as
 (A) Hypertonic (B) Hypotonic
 (C) Normal (D) Isotonic
- The osmotic pressure of solution increases, if
 (A) Temperature is decreased
 (B) Solution concentration is increased
 (C) Number of solute molecules is increased
 (D) Volume is increased

12. If a solution of glucose (mol. wt. 180) and solution of urea (mol. wt. 60) are placed on the two sides of a semipermeable membrane to equal heights, then it will be correct to say
- (A) There will be no net movement across the membrane
- (B) Glucose will flow across the membrane into urea solution
- (C) Urea will flow across the membrane into glucose solution
- (D) Water will flow from urea solution into glucose solution
13. If osmotic pressure of a solution is 2atm at 273K, then at 546K, the osmotic pressure is
- (A) 0.5 atm (B) 1 atm
- (C) 2 atm (D) 4 atm
14. A solution containing 4 g of a non volatile organic solute per 100 ml was found to have an osmotic pressure equal to 500 cm of mercury at 27°C. The molecular weight of solute is :
- (A) 14.97 (B) 149.7
- (C) 1697 (D) 1.497
15. 0.6g of a solute is dissolved in 0.1 litre of a solvent which develops an osmotic pressure of 1.23 atm at 27°C. The molecular mass of the substance is
- (A) $149.5 \text{ g mole}^{-1}$ (B) 120 g mole^{-1}
- (C) 430 g mole^{-1} (D) None of these
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[ANSWERS]

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



Note - If you have any
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