SONI TUTORIALS

Marks: 25   **Date: 08/08/2021**

Chapter: Solutions

Q1) Choose the most correct option.   *(3M)*

(i) The colligative property of a solution is

(a) Vapour pressure   b) Boiling point

(c) Osmotic pressure   d) Freezing point

(ii) Cryoscopic constant depends on.

(a) Nature of solvent   (b) Nature of solute

(c) Nature of solution (d) Number of solvent molecules

(iii) The osmotic pressure of blood is 7.65 atm at 310K. An aqueous solution of glucose isotonic with blood has the percentage (by volume).

(a) 5.41%   (b)3.54%   (c) 4.53%   (d) 53.4%

Q2) Answer the following in one or two sentences   -   *(4M)*

(I) What is van't Hoff factor?

(ii) What is Henry's Law?

(iii) A solution concentration is expressed in molarity and not in molality while considering osmotic pressure. Why?

(iv) Define (i) Isotonic Solution   (ii) Hypertonic Solution.

Q3) Answer the following   *(18M)*

(i) Derive the relationship between degree of dissociation of an electrolyte and Van't Hoff factor.

(ii) Explain with diagram the boiling point elevation in terms of vapour pressure lowering.

(iii) The vapour pressure of water at 20°C is 17mm Hg. What is the vapour pressure of solution containing 2.8g urea in 50g of water?

(iv) At 25°C a 0.1 molal solution of acetic acid is 1.35% dissociated in an aqueous solution. Calculate freezing point and osmotic pressure of the solution assuming molality and molarity to be identical.

(v) Using Raoult's law, how will you show that $\Delta P = P_1^o x_2$? Where x_2 is the mole fraction of solute in the solution and P_1^o vapour pressure of pure solvent.

(vi) Obtain the relationship between freezing point depression of a solution containing non-volatile non-electrolyte and its molar mass. What is Osmotic pressure.

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UAP – JD

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What are we looking for-

- Good communication skills- Fluent in spoken & written English
- Team player & interpersonal relationship abilities
- High level of energy
- Right Attitude and the ability to thrive in a fast-paced environment
- Should be able to multi – task: ability to prioritize and manage project related activities
- Possess Openness, reliability, punctuality, and flexibility at given tasks

Job Description

- To work on growing technology concepts in PEGA Knowledge
- To be part of growing digital company in the space of PEGA AI
- Opportunity to work with varied client accounts and projects thus enabling in enhancement of skills and attributes.
- As a member of our technology teams, you should be passionate around solving business problems through innovation and engineering practices.
- Undertake any other assignments for which may be allocated to you from time to time
- Cultivate strong working relationships with co-workers

Who can Apply-

- Graduation: BE/B.Tech
- ME/MTech/ MCA not eligible
- Passing year: 2023
- Streams Eligible: CSE/IT/ECE/EEE/ETC/EIE/ICE
- **Mechanical/ Civil allied branches not eligible**
- Aggregate till last announced results: 60% or 6.0 CGPA throughout 10th, 12th and UG
- No active Backlogs

Where will you work from

- Chennai, Pune and Bangalore (Location shall be decided basis business requirement)

Cost to Company (CTC)

600000 INR per annum on successful completion of Training.

- Stipend of 25,000 INR per month for 3 months
- Service agreement for 2 years / 2 Lakhs

Where to reach us

Email - campusconnect@hexaware.com

Do visit us for more details www.hexaware.com