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Mid & Quize

Physical_Chemistry_2nd_YUGS_EV_ST-25

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20/100



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SEM-2025_Bologna_Process
Mid_Exam_Class_A_Paper_D

Q1/MCO test (Answer the following)

(Marks 50 %)

1: The Gibbs phase rule is interested in two variants?

- Answer: a) p & T b) F & T c) p & conc. d) T & conc.

2: What do you expect if you add NaCl to H₂O, an increase in the?

- Answer: a) LP b) VP c) FP d) BP

3: The three phases of CO₂ in the phase diagram meets?

- Answer: a) at 1 atm b) over 1 atm c) below 1atm d) at any pressure

4: The phase of super cooling is -----?

- Answer: a) gas b) liquid c) solid d) plasma

5: How many phases are there when the number of variants is two and the number of components is one?

- Answer: a) zero b) 1 c) 2 d) 3

6: The Clapeyron equation can be applied when there is an equilibrium between one of the following?

- Answer: a) melt. & freez. b) sub. & depo. c) vap. & cond. d) all of these

7: The relationship between VP and m is -----.

- Answer: a) direct b) inverse c) disordered d) none of these

8: If you add a ----- to a solvent, then there is a change in the colligative properties of the solvent.

- Answer: a) non-volatile solute b) volatile solute c) pure solute d) pure solvent

9: Osmotic process is used to push the solvent to the -----.

- Answer: a) solute b) impure solute c) mixture d) pure solvent

10- One of the most important benefits of measuring molar mass of the solute is to study the change in -----.

- Answer: a) m b) Π c) V d) p

Q2/ 0.5 mol of a non-P-solute was added to 12.0 mol of P-solvent, VP* is 12.0 kPa at 295 K. What is the VP at

295 K? Determine the deviation of this solution from Raoult's law where VP_{ideal} = 10 kPa. (Marks 25%)

Q3/ Plot the phase diagram of the system (A & B) assumed that (A & B) do not react with each other. A

freezes at (-6 °C) and B freezes at (8 °C), and that an eutectic mixture is formed when the ratio is 60 wt

% of A and that the eutectic melts at (-9 °C), then label all the parts (p & F) of the diagram? (Marks 25%)



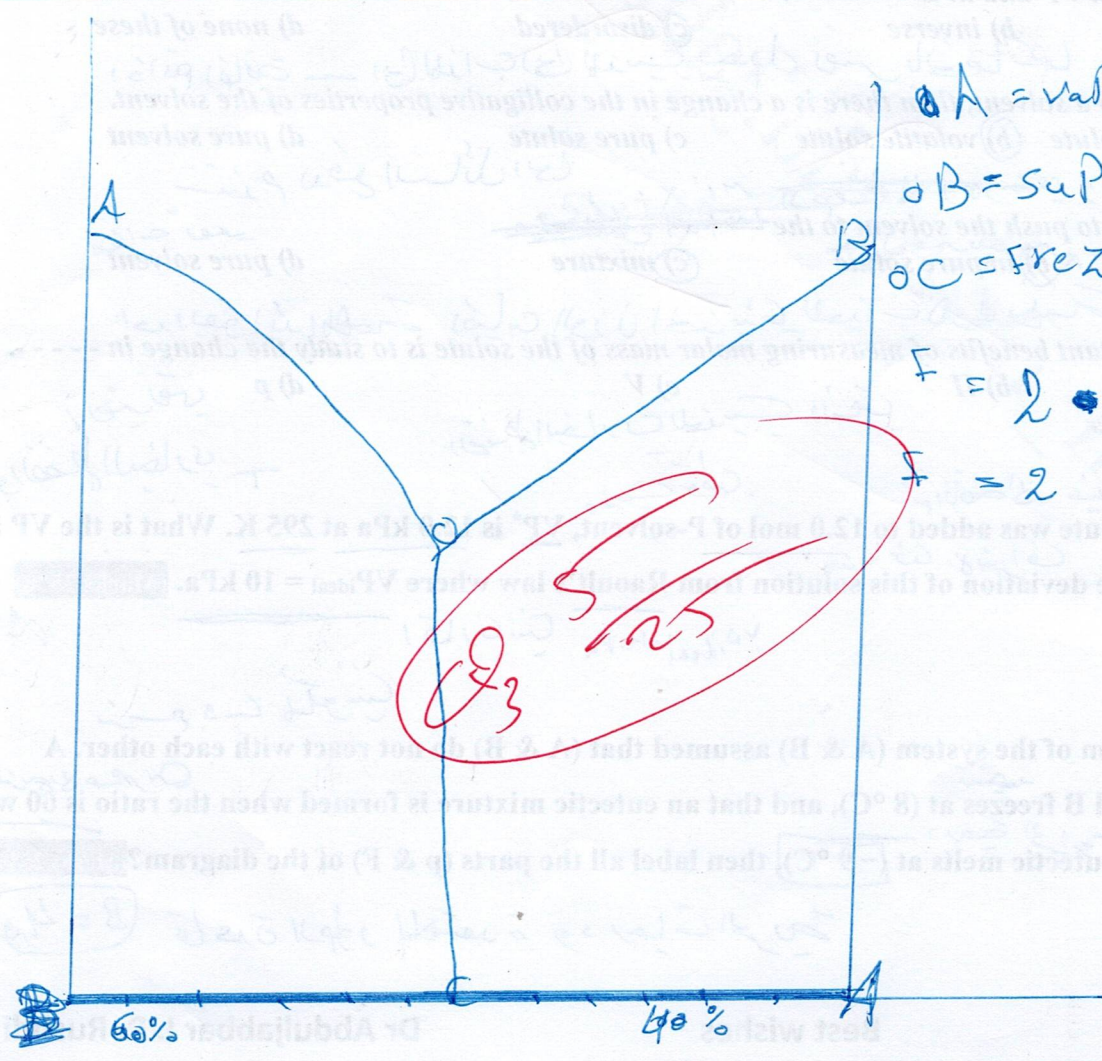
~~$PV = - \left(\frac{P_A^* - P_A}{P_A^*} \right) \times \dots$~~

~~$PV = - \frac{12 - 0.5}{12 \times 295} \times \dots \Rightarrow \frac{11.5}{12 \times 295}$~~

$PV = -36.8 \text{ kPa}$ $PV_{\text{ideal}} = 10 \text{ kPa}$

$Q_2 = \frac{2000}{25}$

تمرف في وابل



- A = vaporization
- B = sublimation
- C = freezing

$F = 2 - 2 + 2$
 $F = 2$

Q_3