Physical_Chemistry_2nd_YUGS_EV_ST

Name of a student ---------- Signature ---------- No. 43

Mustansiriyah University
Department of Chemistry

2nd SEM-2025_Bologna_Process
Mid_Exam_Class_A_Paper_C

Q1/ MCQ test (Answer the following) (Marks 50 %)

1: Depression of freezing point of a solution means increasing in?
Answer: a) T b) H c) μ d) S

2: If you apply the reduced phase rule to condensed systems, then the expected value of pressure is - - - - - -?
Answer: a) zero b) 1 c) 2 d) 3

3: The reduced phase rule can be applied when the number of components is - - - - - - -?
Answer: a) zero b) 1 c) 2 d) 3

4: Which One of the following formulas represents the right equation of negative deviation from Raoult's law?
Answer: a) $P^*_A \neq \chi_A P_A$ b) $P_A = \chi_A P^*_A$ c) $P_A > \chi_A P^*_A$ d) $P_A < \chi_A P^*_A$

5: Addition of a non-volatile solute to the pure solvent causes a change in?
Answer: a) $\Delta_{mix}H$ b) $\Delta_{mix}S$ c) $\Delta_{mix}V$ d) all of these

6: The difference between pure and impure solvent is?
Answer: a) $\mu^* = \mu$ b) $\mu^* > \mu$ c) $\mu^* < \mu$ d) $\mu^* \neq \mu$

7: The relationship between ΔT_f and χ_B is?
Answer: a) direct b) inverse c) disordered d) none of these

8: With the two-component system (A & B), one part of the solid phase consists of?
Answer: a) A + B b) A +solution c) B + solution d) A + eutectic

9: If you add a solute to a solvent, then there is a decrease in the - - - - - of the solution.
Answer: a) S b) H c) T d) μ

10: Dalton's law is used to calculate the partial pressure of - - - - - - - - - phase?
Answer: a) liquid b) gas c) solid d) plasma

Q2/ The Π of a solution containing 4.0 g of an unknown substance per 0.5 dm^3 of solution is 10^3 torr at 34.0 °C. Find the molar mass of this unknown. (Marks 25%)

Q3/ Using the diagram below and the appropriate phase rule, fill in all the blanks and determine the composition of the all-eutectic mixture, all equilibria, all reversible and irreversible processes, and the name of the regions located to the right and left of points C, E & AB? (Marks 25%)

Md Ezan I.R. Rushdi dujjabbar I.R. Rushdi 2025

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Q2

$$\frac{P^* - P}{P^*} = \frac{w_B}{M.wt_B}$$

$T(K) = 34.0^\circ C + 273$

$T(K) = 307\,K$

$$\frac{10^3 - 0.5}{10^3} = \frac{4.0}{M.wt}$$

$wt = 4.0$

$$\frac{500}{10^3} = \frac{4.0}{M.wt}$$

$$M.wt = \frac{4.0 \times 10^3}{500}$$

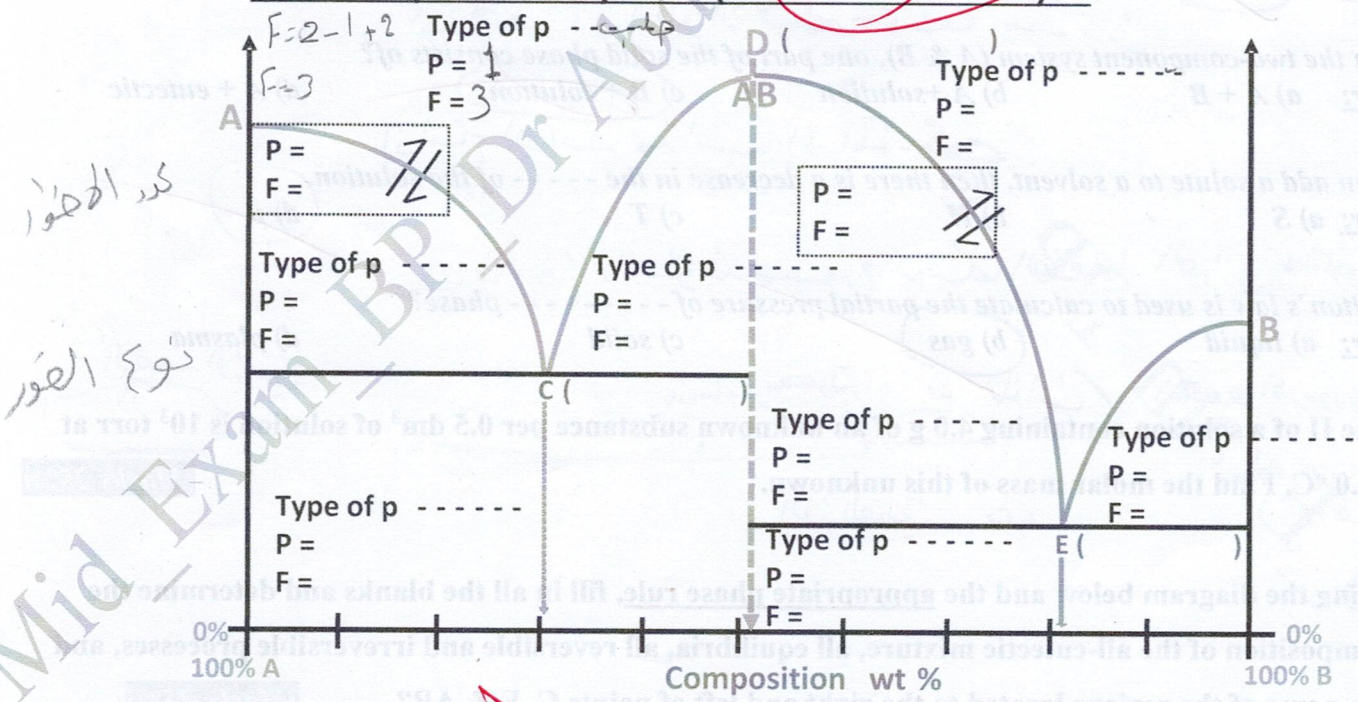
$$M.wt = \frac{44}{500}$$

$M.wt =$

Q2 10/25

Q3 2 en/25

Two component system ( )



كدر الاطوار

نوع الطور

$F = C - P + 2$

رد الاكونا

Mid_Exam_BP_Dr Abduljabbar I. R. Rushdi_2025