



Physical_Chemistry_2nd_YUGS_EV_ST

Mid Quiz

40/100 Fourth only

Name of a student _____ Signature _____ No. 419

Mustansiriya University
Department of Chemistry

2nd SEM-2025_Bologna_Process
Mid Exam_Class_B_Paper_B

Q1/ MCO test (Answer the following)

(Marks 50 %)

- 1: If the relation between the amount of solute and the Π is proportional, then the right equation is?
 Answer: a) $\Pi \propto VP$ b) $\Pi \propto BP$ c) $\Pi \propto V$ **d) $\Pi \propto [B]$**
- 2: If the deposition is dominated, then one of the following will be true.
 Answer: **a) $\Delta_{vap}H = +ve$** b) $\Delta_{vap}H = -ve$ c) $\Delta_{sub}H = +ve$ d) $\Delta_{sub}H = -ve$
- 3: How many phases are there when the number of variants is one and the number of components is one?
 Answer: a) zero b) 1 **c) 2** d) 3
- 4: Which One of the following formulas represents the right equation of positive 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: How many p and F of CO_2 when it is positioned at the boundary of the phase?
 Answer: a) $p = 2$ & $F = 1$ b) $p = 3$ & $F = 0$ **c) $p = 1$ & $F = 2$** d) $p = 2$ & $F = 2$
- 7: Liquid water and ice are formed from?
 Answer: **a) 1 C** b) 2 C c) 3 C d) 4 C
- 8: With the two-component system (Pb & Ag), one part of the solid phase consists of?
 Answer: a) pb + Ag **b) Pb + solution** c) Ag + solution d) Pb + eutectic
- 9: If you add a non-polar solute to a non-polar solvent, then the expected type of mixture will be ----- law.
 Answer: a) Van't Hoff's b) Raoult's c) -ve form Raoult's **d) +ve form Raoult's**
- 10: If it is required to calculate the Y_A , then one of the following laws will be applicable?
 Answer: a) Raoult b) Henry c) Dalton **d) Van't Hoff**

Q2 The VP of pure benzene is 75 mmHg at 20 °C, and VP of pure toluene is 25 mmHg at 20 °C. The mole fraction of each pure component is 0.5. What is the partial VP of each component after mixing?

(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%)



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$$\frac{Pd}{PT} = \frac{\Delta_{melt} \int_m}{\Delta_{melt} V_m}$$

$$T = 20^\circ C + 273 K$$

$$T_1 = 293 K$$

$$T_2 = 20^\circ C + 273 K$$

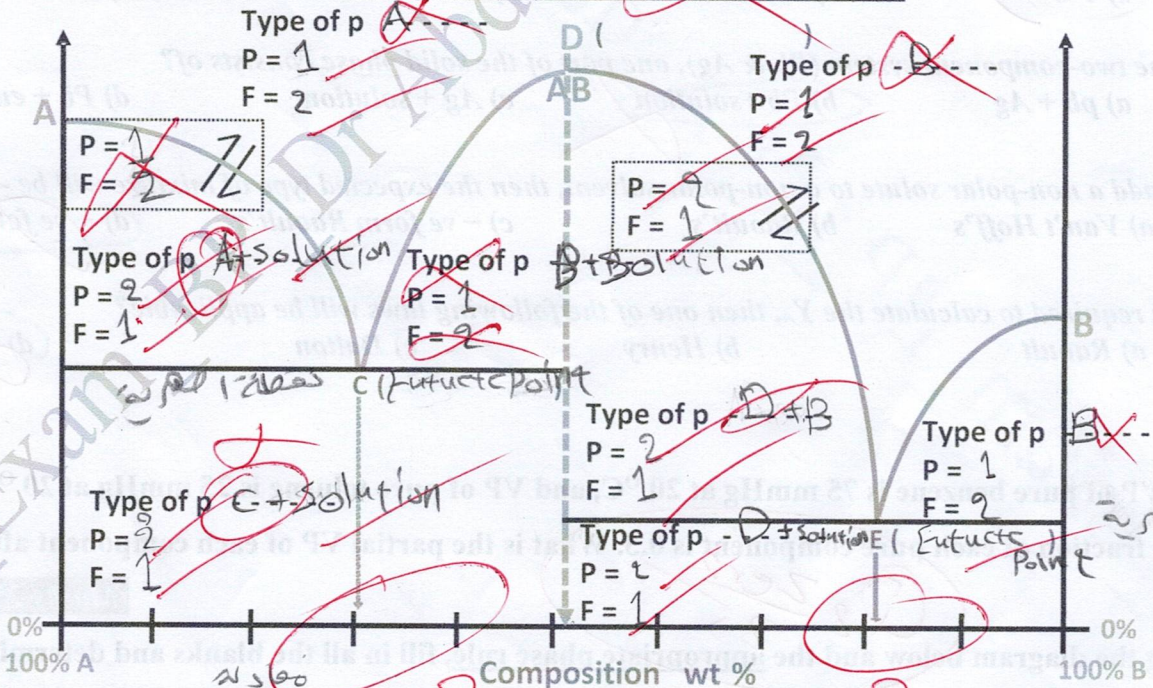
$$T_2 = 293 K$$

$$R = 75 \text{ mm Hg}$$

Q3 20/25

condensed

Two component system (نظام ثنائي)



$$F = C - P + 1$$