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Mid P Quize

Physical_Chemistry_2nd_YUGS_EV_ST

20/100 Twenty only
40

Name of a student _____ Signature _____ No. _____

Mustansiriyah University
Department of Chemistry

2nd SEM-2025 Bologna Process
Mid Exam Class B Paper A

Q1/ MCQ test (Answer the following)

(Marks 50 %)

- 1: The reduced phase rule is interested in two variants?
 Answer: a) p & T ~~b) F & T~~ c) p & conc. d) T & conc.
- 2: Ideal solution follows ----- law.
 Answer: ~~a) Raoult's~~ b) Trouton's c) Henry's law d) Van't Hoff's law
- 3: The three phases of H₂O in the phase diagram meets?
 Answer: a) at 1 atm b) over 1 atm c) below 1atm ~~d) at any pressure~~
- 4: Liquid solution of HNO₃ is formed from?
 Answer: a) 1 C b) 2 C ~~c) 3 C~~ d) 4 C
- 5: How many phases are there when the number of variants is zero and the number of components is one?
 Answer: a) zero b) 1 c) 2 ~~d) 3~~
- 6: The Clausius-Clapeyron equation can be applied when there is an equilibrium between one of the following?
 Answer: a) L & L b) S & L ~~c) G & L~~ d) S & S
- 7: One of the following formulas represents the right equation of Henry's law?
 Answer: a) $P_A = \chi_A P^*_A$ b) $P_A > \chi_A P^*_A$ c) $P_A < \chi_A P^*_A$ d) none of these
- 8: Molality is used to calculate the molar mass of the?
 Answer: a) non-volatile solute b) pure solute ~~c) pure solvent~~ d) solution
- 9: Osmosis pressure exerts when the solvent transfers to the?
 Answer: a) volatile solute b) non-volatile solute ~~c) pure solvent~~ d) solution
- 10- One of the most important benefits of measuring ΔV_P , ΔT_b , ΔT_f and ΔH is to calculate ----- of B?
 Answer: a) M b) m c) V ~~d) p~~

Q2/ The vapor pressure (VP) of a substance is 30 torr at 250 K. At what temperature will the substance have VP of 150 torr? $\Delta_{vap}H$ is 45 kJ mol⁻¹? (Marks 25%)

Q2 zero/25

Q3/ Plot the phase diagram of the system (A & B) assumed that (A & B) do not react with each other. A freezes at (-5 °C) and B freezes at (7 °C), and that an eutectic mixture is formed when the ratio is 70 wt % of A and that the eutectic melts at (-10 °C), then label all the parts (p & F) of the diagram? (Marks 25%)

Q3 zero/25

Q2

$$\Delta V_P = V_{P2} - V_{P1}$$

$$= 150 - 30$$

$$= 120 \text{ torr}$$

Handwritten notes and scribbles.

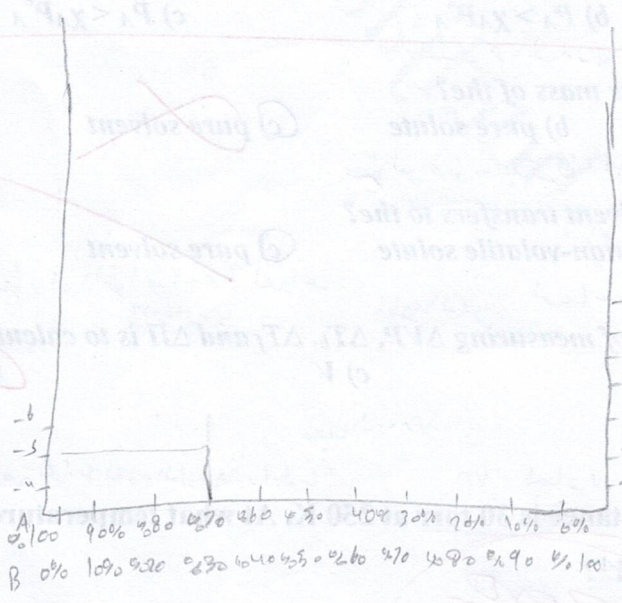
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Physical Chemistry 2nd YUGS BV 2T

Q3/



That the phase diagram of the system (A & B) assumed that (A & B) do not react with each other. A freezes at -7°C and B freezes at 7°C , and that an eutectic mixture is formed when the ratio is 70 wt % of A and that the eutectic melts at -10°C . (then label all the parts (p & f) of the diagram.)

Best wishes
Dr. Abduljabbar I. R. Rushdi