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Mid Quiz

Physical Chemistry 2nd YUGS\_EV\_ST

20/100

Twenty on



Name of a student \_\_\_\_\_ Signature \_\_\_\_\_ No. \_\_\_\_\_  
Mustansiriyah University  
Department of Chemistry

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

Q1/ MCQ 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 H<sub>2</sub>O, an increase in the?  
Answer: a) LP b) VP c) FP d) BP

3: The three phases of CO<sub>2</sub> in the phase diagram meets?  
Answer: a) at 1 atm b) over 1 atm c) below 1 atm 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)  $\Pi$  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<sub>ideal</sub> = 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%)

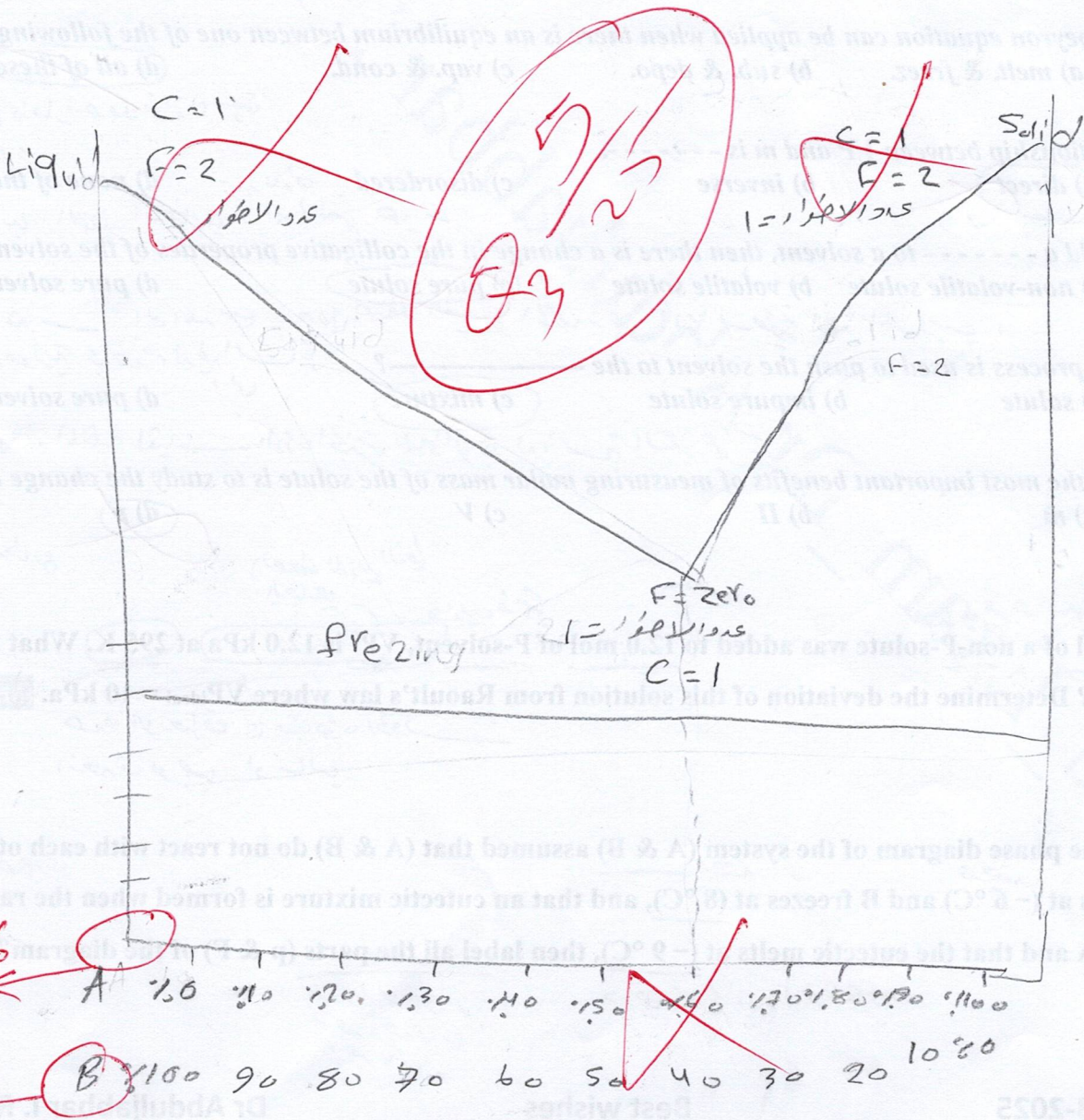
Q21

$$\frac{P_A^* - P_A}{P_A^*}$$

$$= \frac{W_B - M_A}{W_A - M_B}$$

$$\frac{12.0 \cdot \Delta PV}{12.0}$$

*Q21*



100%

0%

A

B