



1.5/5 Mid & Quize

Physical Chemistry 2<sup>nd</sup> YUGS\_EV\_ST

Thirty only 18-03-25 130 100 29

Name of a student \_\_\_\_\_ Signature \_\_\_\_\_ No. \_\_\_\_\_

Mustansiriyah University  
Department of Chemistry

2<sup>nd</sup> SEM-2025\_Bologna\_Process  
Mid Exam\_Class\_A\_Paper\_C

01/MCO test (Answer the following)

(Marks 50%)

1: Depression of freezing point of a solution means increasing in

- Answer: a) T b) H c)  $\mu$  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  $\Delta T_f$  and  $\chi_B$  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)  $\mu$

10: Dalton's law is used to calculate the partial pressure of ----- phase?

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

02 The  $\Pi$  of a solution containing 4.0 g of an unknown substance per 0.5 dm<sup>3</sup> of solution is 10<sup>3</sup> torr at 34.0 °C. Find the molar mass of this unknown.

$\Pi = [B]RT$

(Marks 25%)

03 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%)



Name of a student

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Signature

No. ---

$$\pi = [B] R$$

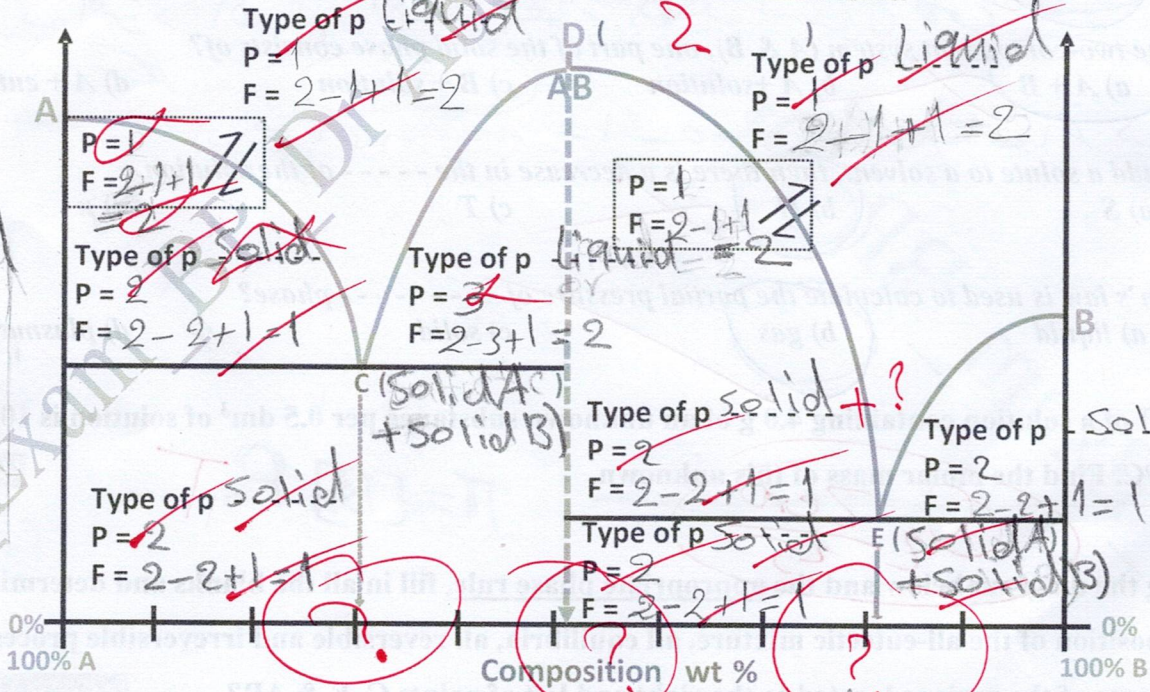
$$\frac{1000}{760} \rightarrow 1.3 \text{ torr}$$

Q2  $\frac{20}{25}$

Q3  $\frac{15}{25}$

Two component system (bivariant)

Freezing  
melting  
Temperature



Hypoeutectic

Hypereutectic