



Mid & Quize

Physical\_Chemistry\_2<sup>nd</sup>\_YUGS\_EV\_ST

20/100 Twenty only  
18-03-25  
No. 25

Name of a student

علي حسن فالح

Signature

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Department of Chemistry

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

Q1/MCO test (Answer the following)

در فحة الامتحان  
احتفظ من في مسكوك المذ يفتري زياده بـ

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)  $\mu$  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

Q2 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.

المزاج  
الوزن الجزيئي لهذا

(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%)



Name of a student

عبد الرحمن بن خالد

Signature

2025

No.

Q2/

$\Delta T = 100^\circ C =$  درجة الفيز ،  $\Rightarrow$

$\Delta T = 0^\circ C =$  درجة الانبعاث ،  $\Rightarrow$

$\Delta T_E = 34.0^\circ C + 273$

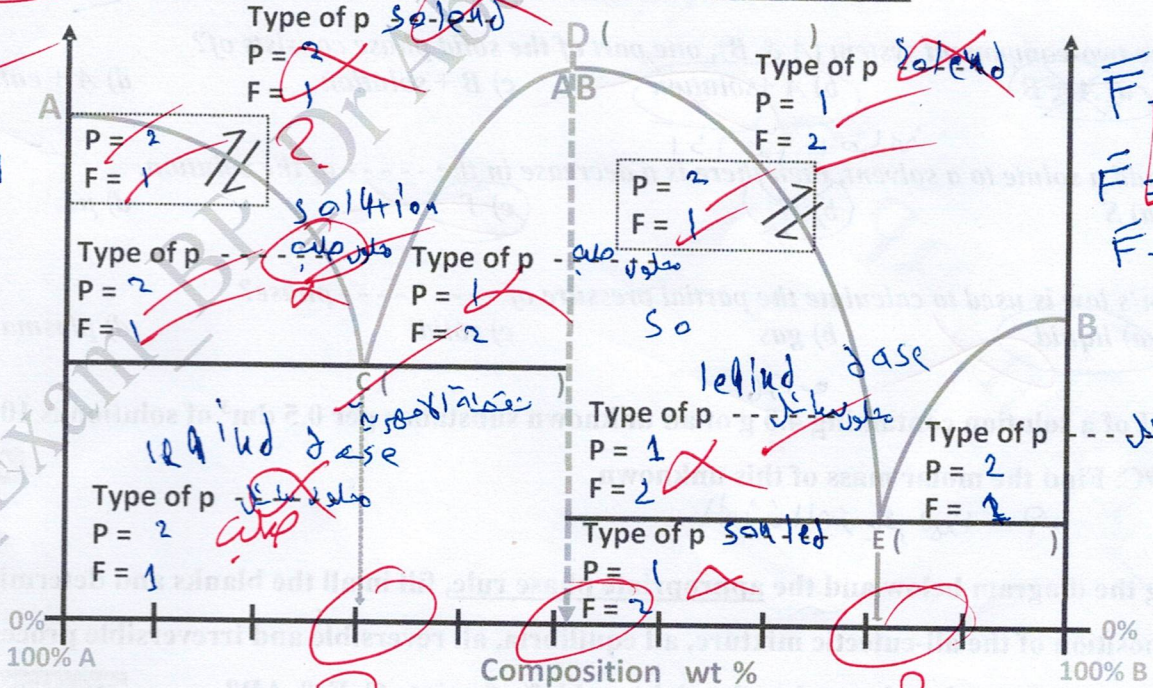
$$w = \frac{wt}{m \cdot wt} \Rightarrow \frac{W_A}{M_A} \frac{M_B}{W_B}$$

Zero  
Q2 25

Q3 15/27

Two component system (درجة الحرارة والمهبط)

~~$F = c - p + 1$~~   
 ~~$F = 2 - 2 + 1$~~   
 ~~$F = 1$~~   
 $c = 2$   
 درجة الحرارة  
 المهبط



~~$F = c - p + 2$~~   
 ~~$F = 2 - 2 + 2$~~   
 ~~$F = 2$~~