



1.25 / 3

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

25 / 100  
Twenty five  
tabb  
32



Name of a student \_\_\_\_\_ Signature \_\_\_\_\_ No. 32

Mustansiriyah University  
Department of Chemistry

2<sup>nd</sup> SEM-2025 Bologna Process  
Mid Exam Class B Paper B

01/ MCO test (Answer the following)

(Marks 50 %)

Q. 10 / 50

1: If the relation between the amount of solute and the  $\Pi$  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

02/ 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%)

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 \_\_\_\_\_ Signature \_\_\_\_\_ No. \_\_\_\_\_

Q2 \* benzene

~~$P_A = X_A P_A^*$~~

~~$= \frac{1}{2} \times 75 \text{ mmHg}$~~

~~$= 37.5$~~  ?

? = units

toluen

~~$P_A = \frac{1}{2} \times 25 \text{ mmHg}$~~

~~$= 12.5$~~  12.5 mmHg

~~$P = P_{A_1} + P_{A_2}$~~  ?

~~$= 0.02 + 37.5$~~

~~$= 37.52$~~

Q2 10/25

Q3 5/25

Two component system ( )

