



2/5

Mid Quiz Physical Chemistry 2nd YUGS_EV_ST

40/100 Fourth



18-03-25

Name of a student _____ Signature _____ No. 42

Mustansiriyah University
Department of Chemistry

SEM-2025_Bologna_Process
Mid_Exam_Class_A_Paper_C

01/MCO test (Answer the following)

(Marks 50 %)

20/50

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

- Answer: a) T b) H c) μ 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 ΔT_f and χ_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) μ

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

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

02 The Π of a solution containing 4.0 g of an unknown substance per 0.5 dm³ of solution is 10³ torr at 34.0 °C. Find the molar mass of this unknown.

(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

فريدم حوسا

Signature

No. ---

II. ---

$$n = \frac{M}{m}$$

$$\frac{P_A^* - P_B^*}{P_A^*} = \frac{M_A}{M_A} \times \frac{M_B^*}{M_B}$$

Q2 $\frac{20}{25}$

wt 4.0g
المذاب
5.0 dm³
المذيب
المولالية = 10⁻³

$$T = 34.0^\circ\text{C}$$

$$T = 34.273 = 307\text{ K}$$

$$10 \times 760 = 7600$$

Q3 $\frac{20}{25}$

Two component system

