



1.5

F19

Physical_Chemistry_2nd_YUGS_EV_ST

30/100 thirty marks
04-2026
Signature



Name of a student

علي ماجد جواد

Signature

No. A17

Mustansiriyah University
Department of Chemistry

2nd SEM-2026 Bologna Process
Mid Exam Class A Paper A

Q1/MCO test (Answer the following)

(Marks 50 %)

1: Depression of freezing point of a solution associated an increasing in?

Answer: a) T b) H c) μ d) S

2: When applying the reduced phase rule to condensed systems, the pressure is assumed to be ----- atm?

Answer: a) zero b) 1 c) 2 d) 3

3: The reduced phase rule applies when which variable is kept constant?

Answer: a) T b) conc c) p d) χ

4: Which One of the following expressions represents a 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 a pure solvent results in 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 pure 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 which phase?

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

Q2 A solution contains 4.0 g of an unknown substance in 0.5 dm³ of solution. Its osmotic pressure is 103 torr at 34.0 °C. Calculate the molar mass of the unknown substance. (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%)

Q2 zero
Q3 zero

NO ANSWER, why?



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$$\frac{20}{32} = 0.62$$

$$\frac{100}{46} = 2.1$$

$$\frac{6.2}{6.2 + 2.1} = \frac{1}{2.1}$$

Q2 zero 25

NO ANSWER, why?

NO ANSWER, why?

Q3 zero 25

Two component system ()

