$\frac{0.75}{5}$ Mid f Quize

Physical_Chemistry_2nd_YUGS_EV_ST $\frac{15}{100}$ Fifteen only

Name of a student ------حسين حمود نبيل------ **Signature** ---18-03-25------**No.** --8--

Mustansiriyah University
Department of Chemistry

2nd SEM-2025_Bologna_Process
Mid_Exam_Class_A_Paper_D

Q1/ MCQ test (Answer the following) **(Marks 50 %)**

$Q_1 \frac{15}{50}$

1: The Gibbs phase rule is interested in two variants?
Answer: [✓ *a) p & T*] *b) F & T* *c) p & conc.* *d) T & conc.*

2: What do you expect if you add NaCl to H_2O, an increase in the?
Answer: *a) LP* *b) VP* *c) FP* [✓ *d) BP*]

3: The three phases of CO_2 in the phase diagram meets?
Answer: *a) at 1 atm* *b) over 1 atm* [✓ *c) below 1atm*] *d) at any pressure*

4: The phase of super cooling is - - - - -?
Answer: *a) gas* *b) liquid* [✓ *c) solid*] *d) plasma*

5: How many phases are there when the number of variants is two and the number of components is one?
Answer: *a) zero* [✓ *b) 1*] *c) 2* *d) 3*

6: The Clapeyron equation can be applied when there is an equilibrium between one of the following?
Answer: [✓ *a) melt. & freez.*] *b) sub. & depo.* *c) vap. & cond.* *d) all of these*

7: The relationship between VP and m is - - - - - - -.
Answer: *a) direct* *b) inverse* [✓ *c) disordered*] *d) none of these*

8: If you add a - - - - - - - to a solvent, then there is a change in the colligative properties of the solvent.
Answer: *a) non-volatile solute* *b) volatile solute* [✓ *c) pure solute*] *d) pure solvent*

9: Osmotic process is used to push the solvent to the ------------------?
Answer: *a) solute* [✓ *b) impure solute*] *c) mixture* *d) pure solvent*

10- One of the most important benefits of measuring molar mass of the solute is to study the change in - - - - -.
Answer: [✓ *a) m*] [✓ *b) Π*] *c) V* *d) p*

قطبي

Q2/ 0.5 mol of a non-P-solute was added to 12.0 mol of P-solvent, VP^* is 12.0 kPa at 295 K. What is the VP at 295 K? Determine the deviation of this solution from Raoult's law where VP_{ideal} = 10 kPa. **(Marks 25%)**

$Q_2 \frac{Zero}{25}$

Q3/ Plot the phase diagram of the system (A & B) assumed that (A & B) do not react with each other. A freezes at (− 6 °C) and B freezes at (8 °C), and that an eutectic mixture is formed when the ratio is 60 wt % of A and that the eutectic melts at (− 9 °C), then label all the parts (p & F) of the diagram? **(Marks 25%)**

$Q_3 \frac{Zero}{25}$

Mid_Exam_Dr Abduljabbar I. R. Rushdi_2025

Mo_17-03-2025 **Best wishes** **Dr Abduljabbar I. R. Rushdi**