Name of a student ------------------- جمود علي شهاب ------------------- Signature ------------------- No. 211

Mustansiriyah University
Department of Chemistry

2ⁿᵈ SEM-2025_Bologna_Process
Mid_Exam_Class_A_Paper_C

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

1: Depression of freezing point of a solution means increasing in?
Answer: a) T   b) H   c) μ d) S

اذا تم تطبيق قاعدة الاطوار المختزله لضغط راح يكون

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

قاعدة الطور المختزله يمكن تطبيقها عندما يكون عدد المكونات

3: The reduced phase rule can be applied when the number of components is - - - - - - -?
Answer: a) zero   b) 1   c) 2   d) 3

الهيمن الصيغ الاتيه تمثل الانحراف

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

Q2/ The Π of a solution containing 4.0 g of an unknown substance per 0.5 dm³ of solution is 10^3 torr at 34.0 °C. Find the molar mass of this unknown.   (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%)

Mo_17-03-2025   With my best wishes   Dr Abduljabbar I. R. Rushdi

Physical_Chemistry_2nd_YUGS_EV_ST

Name of a student -- Signature ------------------------------- No. ------

NO ANSWER

$$F = c - p + 2$$

$Q_2 \frac{zero}{25}$

$Q_3 \frac{10}{25}$

$$F = c - p + 2$$

?

?

Two component   system (   )

Type of p – سائل –
P = 1
F = 3

D (?   )

Type of p – سائل –
P = 1
F = 3

A

P = 3
F = 1

AB

P = 3
F = 1   ✓   ?

Type of p – سائل+صلب –
P = 2
F = 2

Type of p – سائل+صلب –
P = 2
F = 2

B

Type of p – سائل+صلب –
P = 2
F = 2

Type of p – سائل+صلب –
P = 2
F = 2

C (   )

Type of p – صلب+صلب –
P = 2
F = 2

Type of p – صلب+صلب –
P = 2
F = 2

E (   )

Type of p – صلب+صلب –
P = 2
F = 2

0%
100% A

Composition   wt %

0%
100% B

3

$A = 69\%$

$B = 81\%$

$A = 19\%$

$B = 82\%$