



3/5

Mid-Quiz

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

60/100

Siaty only



Name of a student

زيد صادق

Signature

No. 18

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2<sup>nd</sup> SEM-2025\_Bologna\_Process  
Mid\_Exam\_Class\_A\_Paper\_C

01/MCO test (Answer the following)

30/50

(Marks 50 %)

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

Answer: a) T b) H c)  $\mu$  d) S

انخفاض نقطة التجمد يعني الزيادة في  
اذا تم تقليل قاسم الطور المضطرب المعدل التجمد الموقفة للفعل كم

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

قاسم طور مضطرب 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

أي عدد المكونات يمكن تطبيقها للمعادلة المخفضة للانحراف السائل عن قانون راؤولت

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)  $P_A < \chi_A P_A^*$

إضافة مذاب غير متطاير إلى المذيب النقي يسبب في تغير

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

الفوق يسبب التغير في الخواص

6: The difference between pure and impure solvent is?

Answer: a)  $\mu^* = \mu$  b)  $\mu^* > \mu$  c)  $\mu^* < \mu$  d)  $\mu^* \neq \mu$

العلاقة بين  $\mu^*$  و  $\mu$  في المحلول الممزج

7: The relationship between  $\Delta T_f$  and  $\chi_B$  is?

Answer: a) direct b) inverse c) disordered d) none of these

للنظام ثنائي المكونات في طور الطور يكون

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

اذا تم إضافة مذاب إلى مذيب سبب في انخفاض

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)  $\mu$

قانون دالتون يستخدم لحساب الضغط الجزئي

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

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

02 The  $\Pi$  of a solution containing 4.0 g of an unknown substance per 0.5 dm<sup>3</sup> of solution is 10<sup>3</sup> torr at 34.0 °C. Find the molar mass of this unknown.

(Marks 25%)

درجة حرارة 34.0 °C. Find the molar mass of this unknown.  
المزاج الوزن الجزيئي

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. --

$\pi = RT[B] \Rightarrow [B] = \frac{\pi}{RT}$

$[B] = \frac{1.3157 \text{ atm}}{0.082 \text{ atm}\cdot\text{L}/\text{K}\cdot\text{mol} \times 307 \text{ K}}$

$= \frac{1.3157}{25.174} \Rightarrow [B] = 0.0522 \text{ mol/L}$

No. of molar =  $[B] \times V$

$= 0.0522 \text{ mol/L} \times 0.0005 \text{ L} \Rightarrow \text{No. of molar} = 0.0000261 \text{ mol}$   
*0.5L*

Molar mass =  $\frac{Wt}{\text{No. of molar}} = \frac{4.0 \text{ g}}{0.000261 \text{ mol}}$

Molar mass =  $1532.567 \text{ g/mol}$

*Q2 20/25*

$Wt(A) = 4.0 \text{ g}$   
 $\pi = 10^3 \text{ torr} = 760$   
 $\pi = 1.3157 \text{ atm}$   
 $T = 34.0^\circ\text{C} + 273 = 307 \text{ K}$

$V = 0.5 \text{ dm}^3 = 0.5 \text{ L}$   
 $R = 0.082 \text{ atm}\cdot\text{L}/\text{K}\cdot\text{mol}$

*Q3 10/25*

$F_2 - C - P + I$

Two component system (قاعدة الطور المقتزلة)

