



2.5

# Mid Quiz

Physical Chemistry 2<sup>nd</sup> YUGS\_EV\_ST

50  
100  
Fifty  
only  
46

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

## 01/MCO test (Answer the following)

(Marks 50%)

1: Depression of freezing point of a solution means increasing in? - d -  
انخفاض في درجة الانجماد يعني زيادة في

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

2: If you apply the reduced phase rule to condensed systems, then the expected value of pressure is - c -?  
اذا تم تطبيق قاعدة الطور المختزلة اذا القيمة المتوقعة للضغط تكون

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

3: The reduced phase rule can be applied when the number of components is - a -?  
قاعدة الطور المختزلة يمكن تطبيقها عندما يكون عدد المكونات

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?  
اي من الصيغ التالية تمثل المعادلة الصحيحة لسالب انحراف

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?  
اضافة مذاب غير متطاير الى مذيب نقي يسبب تغيير

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?  
الفرق بين المذيب النقي والمذيب غير النقي

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

7: The relationship between  $\Delta T$  and  $\chi_B$  is?  
العلاقة بين التغير في درجة الحرارة و  $\chi_B$

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?  
نظام مكون من جزأين في الطور الصلب يكون فيه

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 - a - of the solution.  
اذا تم اضافة مذاب الى مذيب يحصل انخفاض في

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

10: Dalton's law is used to calculate the partial pressure of - b - phase?  
يستخدم لحساب الضغط الجزئي للطور

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.  
نص  
الضغط الاسموزي wt مذاب

Answer:  $M \cdot V = T$

(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?  
حدد الوزن الجزيئي

(Marks 25%)



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wt = 4 g

T = 34 °C → T(K) = 34 + 273

T(K) = 307 K

V = 0.5 dm<sup>3</sup> → V(L) = 0.5 × 10<sup>3</sup>

V = 0.500 L

~~1000 torr × 1 atm~~  
~~760 torr~~

P = 1.315 atm

$\pi = RT [B]$

1.315 = (0.0821) × 307 K [B]

1.315 = 25.174 [B]

B =  $\frac{1.315}{25.174}$  = 0.052 M التركيز

No. of molar = M · V → 0.052 × 500  
= 26 mole

$n = \frac{wt}{M \cdot wt} \Rightarrow 26 = \frac{4 g}{M \cdot wt}$

M · wt =  $\frac{4 g}{26}$

F = c - P + 1  
= 2 - 2 + 1  
= 1

M · wt = 0.153 g/mole

