



0.5

F1

Physical_Chemistry_2nd_YUGS_EV_ST

10/100 Ten only



Name of a student وتيسير خالد Signature Abduljabbar No. B16

Mustansiriyah University
Department of Chemistry

2nd SEM-2026_Bologna_Process
Mid Exam_Class_A_Paper_B

Q1/ MCQ test (Answer the following)

(Marks 50 %)

10/50

1: Which two variables does the Gibbs phase rule consider as independent??

Answer: a) p & T b) F & T c) p & conc. d) T & conc.

هو المتغيرين في قانون Gibbs يجب ان يعبران مستقلين

2: If NaCl is added to ice, which property of the solution decreases?

Answer: a) LP b) VP c) FP d) BP

منتهى الملح ما هي الخاصية من الملول سوف تزداد

3: At what pressure do the three phases of CO₂ coexist in the phase diagram?

Answer: a) at 1 atm b) over 1 atm c) below 1 atm d) at any pressure

Phase diagram في اي ضغط يتم اتقاد الاطوار الثلاثة في CO2

4: Which phase corresponds to a supercooled substance?

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

ما هو الطور الذي يعود الى سوبركول

5: How many phases are present when a one-component system has two degrees of freedom?

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

ما هي عدد الاطوار لظرف مكون واحد وله درجتين حرية

6: The Clausius equation can be applied to which of the following phase equilibria?

Answer: a) melt. & freeze b) freeze. & melt. c) vap. & cond. d) all of these

يستخدم معادلة كلايوس لاهد التوازنات الآتية

7: What is the relationship between the VP of a solution and the solute molality?

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

ما هي العلاقة بين ضغط البخار للمحلول ومولالية المذاب

8: Which type of solute, when added to a solvent, alters its colligative properties?

Answer: a) non-volatile solute b) volatile solute c) pure solute d) pure solvent

ما هو نوع المذاب الذي يغير خواصه الكوليجاتيف عند اضافته الى المذيب

9: In osmosis, the solvent moves toward which component?

Answer: a) solute b) impure solute c) mixture d) pure solvent

بمسألة الأسموزية فان المذيب يتحرك باتجاه

10- One of the most important applications of measuring molar mass of the solute is to study the change in ---.

Answer: a) m b) Π c) V d) p

من التطبيقات الهامة لقياس الكتلة المولية للمذاب هو دراسة التغير في

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%)

امانة 0.5 مول من المذاب غير متطاير

Q3/ Plot the phase diagram of the system (α and β) assumed that (α and β) do not react with each other. α freezes at (-7 °C) and β freezes at (10 °C), and that a eutectic mixture is formed when the ratio is 30 wt % of β and that the eutectic melts at (-10 °C), then label all the parts (p & F) of the diagram using the appropriate phase rule?

ارسم مخطط ذوبان

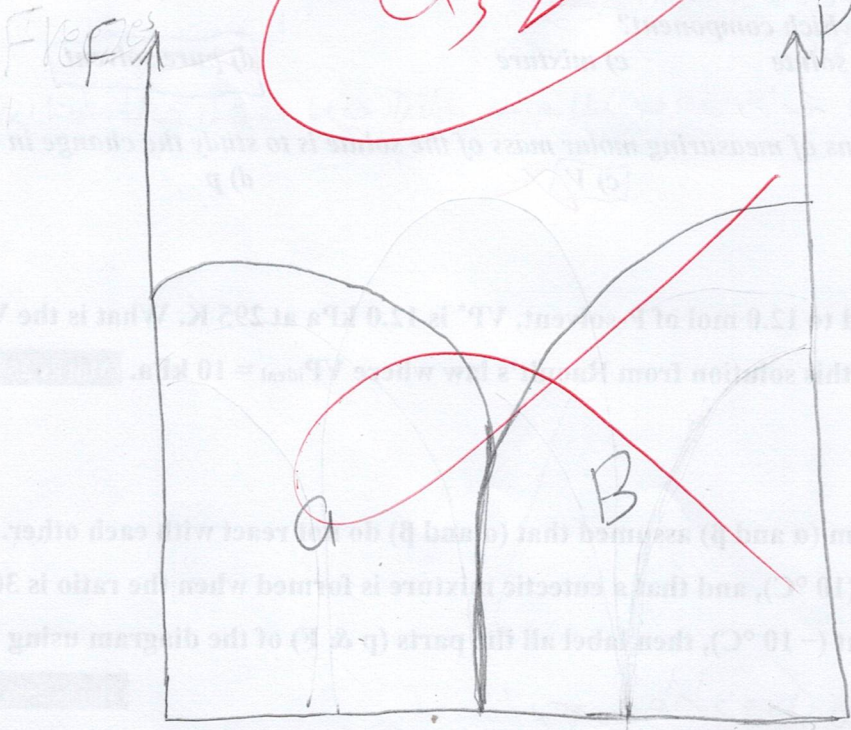
(Marks 25%)

Q2 zero
25

NO ANSWER, why?

Q3/

Q3 zero
25



~~$F = P - C + 2$~~

تکون من متکونين
 ای $C = 2$
 و بعداً طوراً تکون من متکونين
 ای $P = 2$
 و بعداً گریه بیستاً E
 $E = F$