



Physical Chemistry-Properties of Gases



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100
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Minty fire
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Department of Chemistry

1st Exam-paper B

Q1: Circle the right answer for all of the following: (50 degree)

1: Carbon dioxide is classified as a .

Answer: a) toxic gas b) ideal gas c) real gas d) heavy gas (0/5)

2: A 2 dm³ container contains a certain amount of gas at 0.5 atm pressure. The gas is transferred to another vessel of volume and the pressure is 0.25 bar. What should be it is Volume?

Answer: a) 0.40 atm b) 0.40 dm³ c) 0.4 bar d) 4 bar (0/5)

3: A gas occupies 400 dm³ at 130 °C and 76 cmHg pressure. What would be it is volume at STP?

Answer: a) 270 L b) 207 dm³ c) 207 m³ d) 204 cm³ NO ANSWER (0/5)

4: Calculate the weight of H₂ (2.00 g. mol⁻¹) in a 2 L cylinder at 2.5 atm and 27 °C.

Answer: a) 0.40 mol⁻¹ b) 0.40 g c) 0.40 mol g⁻¹ d) 0.4 g mol⁻¹ (0/5)

5: Calculate the number of moles for CO₂ in a 10 L cylinder at 8 bar and 27 °C.

Answer: a) 3.25 mmol b) 3.00 mol c) 3.00 L d) 2.99 mol (0/5)

6: According to Graham's law the lightest gas is?

Answer: a) H₂ b) O₂ c) N₂ d) CO₂ (5/5)

7: According to the Boyle's law the pressure of a gas is inversely proportional with?

Answer: a) mol b) T c) R d) V (5/5)

8: If a gas has $V_m \neq V^0_m$ then this means one of the following?

Answer: a) real (5/5) b) noble c) ideal d) heavy

9: If $RT > pV$ this means the forces dominated are?

Answer: a) attraction b) repulsion c) Van der Waal's d) no one of these (0/5)

10: According to Gay-Lussac's law the volume of the gas is?

Answer: a) constant b) variable c) equal to zero (5/5) d) equal to 22.4 L

Q2: Under the same conditions of temperature and pressure, how many times faster will hydrogen effuse compare to carbon dioxide. (25 degree)

Q3: Calculate the density of carbon dioxide (44 g mol⁻¹) at STP. (25 degree)

~~Q2~~ NO ANSWER
Q2 $\frac{0}{25}$

100

~~$d = \frac{MP}{RT}$~~

? \equiv units

$d = \frac{44.1?}{0.082? \cdot 273?} = \frac{44?}{22.3?} = 1.97?$

Q3 $\frac{15}{25}$