Final Exam Review
Dr. Palmer Graves

MULTIPLE CHOICE

Section 9.2 The Gas Laws

1. A basketball is inflated to a pressure of 1.50 atm in a 20.0°C garage. What is the pressure of the basketball outside where the temperature is -5.00°C?
   a) 0.375 atm
   b) 1.37 atm
   c) 1.42 atm
   d) 1.67 atm

2. A gas bottle contains 0.650 mol of gas at 730 mm Hg pressure. If the final pressure is 1.15 atm, how many moles of gas were added to the bottle?
   a) 0.128 mol
   b) 0.630 mol
   c) 1.19 mol
   d) 1.28 mol

Section 9.3 The Ideal Gas Law

3. How many molecules of N_2 are in a 500 mL container at 780 mm Hg and 135°C?
   a) 8.76×10^{21}
   b) 9.23×10^{21}
   c) 1.84×10^{22}
   d) 2.79×10^{22}

4. A 0.286 g sample of gas occupies 125 mL at 60. cm of Hg and 25°C. What is the molar mass of the gas?
   a) 44 g/mol
   b) 59 g/mol
   c) 71 g/mol
   d) 93 g/mol

5. Which of the following would have a density of 1.21 g/L at 7.0°C and 0.987 atm?
   a) Ar
   b) N_2
   c) Ne
   d) O_2

Section 9.5 Partial Pressure and Dalton's Law

6. A balloon contains 0.76 mol N_2, 0.18 mol O_2, 0.031 mol He and 0.026 mol H_2 at 739 mm Hg. What is the partial pressure of O_2?
   a) 19 mm Hg
   b) 23 mm Hg
   c) 130 mm Hg
   d) 560 mm Hg

Section 9.6 The Kinetic-Molecular Theory

7. What is the average speed (actually the root-mean-square speed) of a neon atom at 27°C?
   a) 3.34 m/s
   b) 19.3 m/s
   c) 183 m/s
   d) 610 m/s

Section 9.7 Graham's Law: Diffusion and Effusion of Gases

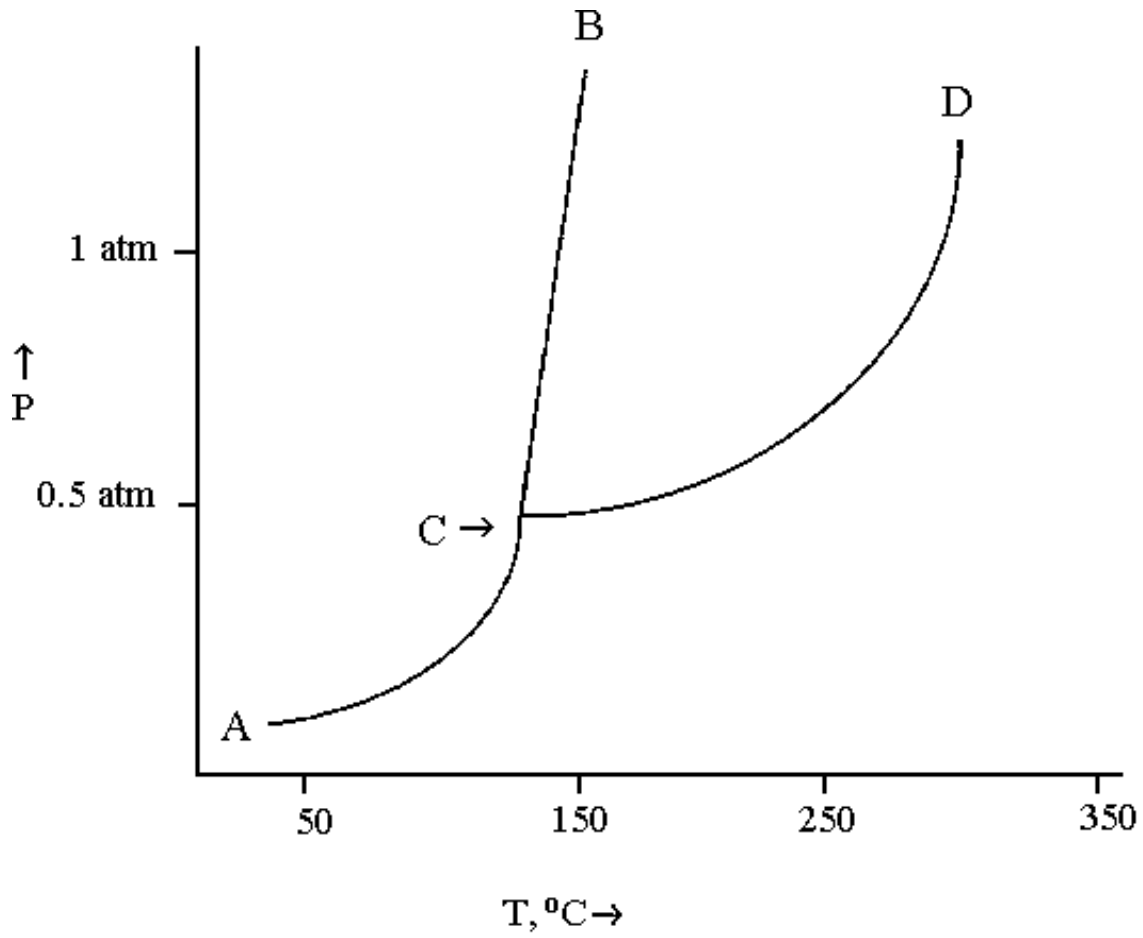
8. An unknown gas effuses 1.73 times faster than krypton. What is the molar mass of the gas?
   a) 28.0 g/mol
   b) 48.4 g/mol
   c) 110 g/mol
   d) 251 g/mol

Section 10.4 Phase Changes

9. How much heat is released when 75.0 g of steam at 100.0°C is cooled to ice at -15.0°C ? The enthalpy of vaporization of water is 40.67 kJ/mol, the enthalpy of fusion for water is 6.01 kJ/mol, the molar heat capacity of liquid water is 75.4 J/(mol▪°C), and the molar heat capacity of ice is 36.4 J/(mol▪°C).
   a) 54.76 kJ
   b) 158.5 kJ
   c) 228.2 kJ
   d) 652.6 kJ

Section 10.12 Phase Diagrams

10. The normal boiling point of this substance is approximately
    a) 25°C.
    b) 140°C.
    c) 300°C.
    d) 350°C.



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1. b)

Chapter: 9 QUESTION: 20

2. a)

Chapter: 9 QUESTION: 21

3. b)

Chapter: 9 QUESTION: 27

4. c)

Chapter: 9 QUESTION: 37

5. b)

Chapter: 9 QUESTION: 39

6. c)

Chapter: 9 QUESTION: 48

7. d)

Chapter: 9 QUESTION: 59

8. a)

Chapter: 9 QUESTION: 69

9. c)

Chapter: 10 QUESTION: 27

10. c)

Chapter: 10 QUESTION: 76