

Quiz: Ch. 10 & 11
AP Chem
Version F (25 pts)

Name:
Period (circle one): 6 7
Date:

Show your work for problems that require calculations.

1. (6 pts) Describe (in a sentence) three unique “gas law equations.”

- a.
- b.
- c.

2. (6 pts)

a. The graph at right represents a substance at 100°C. Draw the speed distribution for a substance with twice the molecular mass.

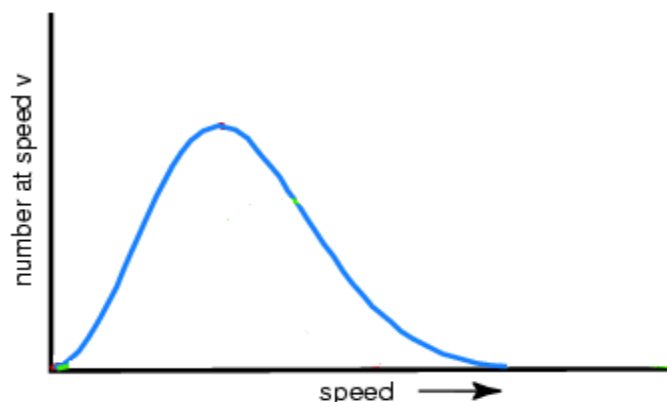
b. Circle the substance that will have a higher kinetic energy at 100°C.

- i. MM_1
- ii. MM_2 , which equals $2(MM_1)$
- iii. They have the same kinetic energy.

c. Circle the substance that will take the longest to effuse.

- i. MM_1
- ii. MM_2 , which equals $2(MM_1)$
- iii. They will effuse at the same rate.

d. Explain your answer to part b.



3. (9 pts) Label the type of crystalline solid each of the substances below forms. If the substance is molecular, also label it is polar or nonpolar. Then, circle the substance that will have a lower melting point.

a. S_8 : _____ O_2 : _____

b. NaI: _____ ICl: _____

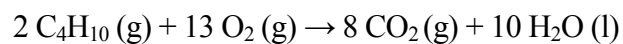
c. Hg: _____ Ne: _____

4. (4 pts) Identify all the “intermolecular forces” present in each of the following compounds.

a. C (graphite)

b. NH₂OH

5. (5 pts) Butane, C₄H₁₀, is a hydrocarbon that is commonly used as fuel for lighters.



Calculate the volume of air at 75°C and 0.80 atm that is needed to completely burn 65.0 grams of butane. Assume that the mole fraction of oxygen in air is 0.210.