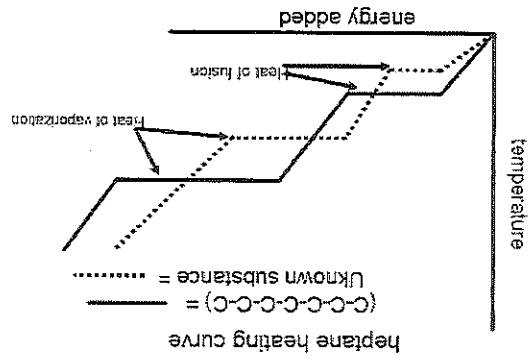


#7-1 Quiz 3c MC

Multiple Choice

Identify the choice that best completes the statement or answers the question.



1. (#7-1a) The heating curve above shows the temperatures at which a substance is a solid, liquid and a gas.

Which of the following is true relative to pressure?

I. Pressure will not affect the state of a substance so is not measured in the graph. No

II. Pressure is constant in this graph. ✓

III. Pressure and temperature can affect the state of a substance but just doesn't affect the substances listed. ✓

a. I only

b. II only

c. III only

d. none above are valid.

2. (#7-1b) Which of the following statements are true?

I. The unknown substance has less intermolecular forces and therefore converts to a gas with less energy. ✓

II. Both substance will have larger translational energies after they are vaporized. ✓

III. The heat of fusion of the unknown is larger possibly due to a longer carbon chain of heptane. No

a. I only

b. II only

c. I and III

d. I, II, and III

I + II only

3. (#7-1c) A 10g sample of hexane ( $C_6H_{14}$ ) has

I. a larger mass of hydrogen then carbon. ✓

II. a larger number hydrogen atoms then carbon atoms. ✓

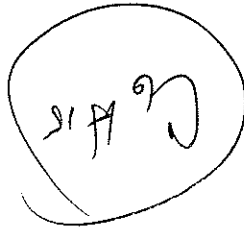
III. the same percent composition as  $C_3H_7$ . ✓

a. I only

b. II only

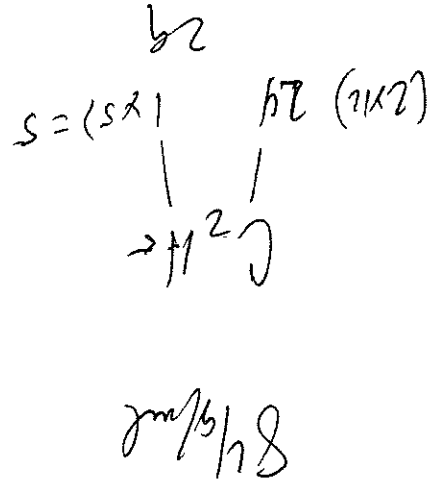
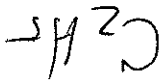
c. II and III only

d. I, II and III



This one is a  
1. HLo off

Be where  
#  
needs to  
3  
84  
29  
(2.8)



d) The actual substance has a molecular mass of 84g/mol. What is the molecular formula?

c) Determine the empirical formula.  
 $H: 2.50g \cdot \frac{1}{12} = 0.208$   
 $C: 12.49g \cdot \frac{1}{12} = 1.04$   
 $H: 2.50g / 1.04 = 2.4 (2.5)$   
 $C: 12.49g / 1.04 = 12 (12)$   
 $2$

b) If the sample size is 15 grams, determine the mass of C and H in the sample.

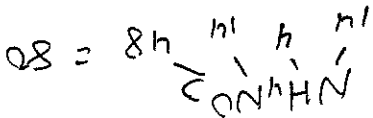
100  
- 83.3  
16.7  
16.7%

a) Determine the percent mass H in the hydrocarbon

2. An unknown hydrocarbon (only Hydrogen and Carbon) is put in to a commercial internal combustion engine and burned. The hydrocarbon was 83.3% C.

c) If you have 45g of ammonium nitrate, how much (grams) nitrogen is incorporated in the sample?

$28/80 \times 100 = 35\%$



1. Ammonium Nitrate is a typical ingredient in fertilizer.  
 a) Write the formula.  $NH_4NO_3$   
 b) Determine the percent Nitrogen of this compound.