

CH1010 Exam 2 Name _____

October 27, 2000 SSN _____ Seat No _____

In solving problems, you must show all work. Little or no credit will be given for a correct answer with no work shown.

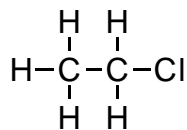
1. a. Pick a molecule that will show hydrogen bonding. Draw two of the molecules and show the hydrogen bonding interaction. (5%)

b. Pick a molecule that will show dipole-dipole interaction. Draw two of the molecules and show the dipole-dipole interaction. (5%)

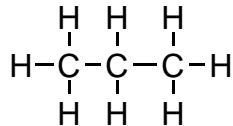
2. a) A sample of gas in a 2.0 L vessel at 80°C has a pressure of 450 torr. What will its pressure be when the vessel is heated to 200°C?
(10%)

b) How many moles of the above gas are present? (10%)

3. Which of the two isomers below would you expect to have the higher boiling point? Briefly explain your answer. (5%)



or

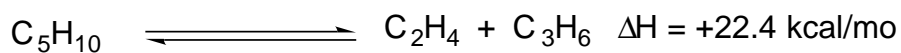


4. a) How many grams of KHCO_3 must you add to 250 mL water to prepare 0.600% w/v solution? (10%)

b) What is the molarity of the above solution? (Assume no volume change upon adding the KHCO_3 to the water). (10%)

5. What weight of AgNO_3 would you need to prepare 1.0 L of a 2.5 ppm solution. (5%)

6. For the reaction below



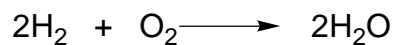
a) Is this reaction exothermic or endothermic? (5%)

b) Draw an energy diagram for the reaction. Label the activation energy and the ΔH . (10%)

c) Write the expression for the equilibrium constant. (5%)

d) If the reaction is heated, what happens to the position of equilibrium? (5%)

7. What volume of oxygen, at STP, will be required to react with hydrogen to produce 5.0 g of water according to the equation below? (15%)



1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Total minus _____ Grade _____

Name _____

