REVIEW QUESTIONS

Chapter 2

1. Convert the following temperatures:

   a) 10 °C to °F

   b) 200 K to °C

   c) 425 °F to °C

2. Classify the following properties of sodium metal as ***physical*** or ***chemical***:

   a) silver metallic color _____

   b) turns grey in air _____

   c) melts at 98°C _____

   d) reacts explosively with chlorine _____

   e) dissolves in water to produce a gas _____

   f) malleable (can be shaped) _____

3. Classify the following changes as ***physical*** or ***chemical*** :

   a) steam condenses to a liquid on a cool surface _____

   b) baking soda dissolves in vinegar, producing bubbles _____

   c) moth balls gradually disappear at room temperature _____

   d) when a can of soda is opened bubbles form _____

4. How many calories of heat are required to heat 45 g of water from 12ºC to 76ºC? (Specific heat of water = 1.0 cal/gºC)

5. a) Calculate the calories required to melt 65 g of ice at 0°C.

   b) Calculate the kilocalories required to vaporize 125 g of water at 100°C.

6. A sample of gold weighing 15 g requires 84 calories of heat to increase its temperature from 35ºC to 215ºC. Calculate the specific heat of gold.

7. Calculate the Calories in 1 cup of milk: 12 g of carbohydrates, 9 g of fat and 9 g of protein.

8. How many kcal of heat are released when 45 g of steam at 100°C is converted to liquid water at 15°C?

9. The melting point of benzene is 5.5°C and its boiling point is 80.1°C. Sketch a heating curve for benzene from 0°C to 100°C, and answer the following questions:

   a) What is the state of benzene at 15°C? _____

   b) What is the state of benzene at 98°C? _____

   c) At what temperature are both liquid and gas present?_____