

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 12°C to 76°C?  
(Specific heat of water = 1.0 cal/g°C)
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 35°C to 215°C. 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? \_\_\_\_\_