Name: _____ Date: _____ Block: _____

Chapter 17 [redacted] Review Sheet:

Heat and Temperature

1. What is the difference between heat and temperature?
2. Can you add heat to an substance and the substance's temperature stay the same, why or why not?

Specific Heat Capacity

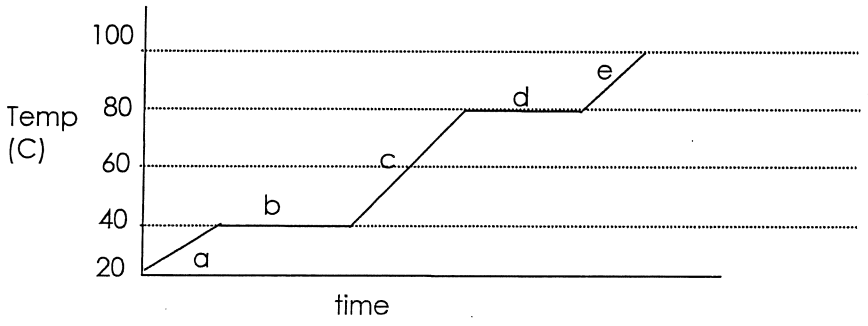
3. What is the definition of specific heat capacity?
4. What is the specific heat capacity of water?
5. Which requires more energy to change the temperature?
   a. Gold (C = 0.128 J/g °C) or Silver (C = 0.235 J/g °C)?
   b. Water (C = 4.184 J/g °C) or ethanol (C = 2.44 J/g °C)?

Calorimetry

6. How many calories are in a Joule?
7. 66,938 joules of heat energy is needed to raise the temperature of a 425 g aluminum baking sheet to a baking temperature of 200°C? What is the initial temperature of the baking sheet? The specific heat of aluminum is 0.90 J/g 0C
8. The temperature of an iron bar with a mass of 87.0 g is raised from 31°C to 543°C. In the process, 4900 calories of heat energy were absorbed. What is the specific heat of iron?

Phase Changes

The following graph is a heating curve for an unknown substance.



9. At what temperature is the melting point?
10. At what temperature is the boiling point?
11. Which letter corresponds to a time when
    a. the solid form of the compound is changing temperature?
    b. the liquid form of the compound is changing temperature?
    c. the gas form of the compound is changing temperature?
    d. The solid is melting
    e. The liquid is freezing
    f. The liquid is evaporating
    g. The gas is condensing
12. If you wanted to calculate the heat associated with the changes in the graph (use the letters labeled on the graph as your answers.

    a. When would you use $Q = mC\Delta T$?
    b. When would you use $Q = m\Delta H_{fus}$?
    c. When would you use $Q = m\Delta H_{vap}$?

Enthalpy

13. The thing we measure when we want to determine the average kinetic energy of random motion in the particles of a substance is _____.
14. The _____ is used to describe how much energy is produced or used during a chemical change.
15. The _____ is the energy needed to raise the temperature of a substance by one degree Celsius.
16. _____ reactions require energy in order to take place.
17. A(n) _____ reaction is one where the products have lower energy than the reactants.
18. Another word for ~~freezing~~ (melting) is _____.
19. _____ changes take place by themselves, without a continuous supply of energy.
20. The _____ is the energy required to boil one mole of a substance, and its symbol is _____.
21.

Word Bank:

Endothermic
Enthalpy
Heat of reaction
Heat
ΔH_{vap}
Temperature
Exothermic
Fusion
Specific heat capacity
Heat of vaporization
Heat of fusion
ΔH_{fus}