Assignment-04

2. Physical properties include all the following except
   A. boiling point.
   B. reactivity with other substances.
   C. odor.
   D. specific gravity.

3. Which is a chemical change?
   A. Iron rusting
   B. Water freezing
   C. Alcohol evaporating
   D. Ice melting

4. Which is a physical change?
   A. Kerosene burning
   B. Decomposition of water by electrolysis
   C. Salt dissolving in water
   D. Converting alcohol to vinegar

5. Which phase change releases energy?
   A. H_2O (l) $\rightarrow$ H_2O (g)
   B. H_2O (s) $\rightarrow$ H_2O (l)
   C. H_2O (l) $\rightarrow$ H_2O (s)
   D. H_2O (s) $\rightarrow$ H_2O (g)

6. Which phase change absorbs energy?
   A. HOH (l) $\rightarrow$ HOH (s)
   B. Fe (l) $\rightarrow$ Fe (s)
   C. HOH (g) $\rightarrow$ HOH (l)
   D. CH_3OH (l) $\rightarrow$ CH_3OH (g)

7. A 400.0g sample of water is at 30.0° C. How many joules of energy are required to raise the temperature of the water to 45.0° C?
   A. 628 J
   B. 1880 J
   C. 25100 J
   D. 450 J

13. 400.0g of a metal absorbs 10000. J of heat energy and its temperature rises from 20.0° C to 103.0° C. What is the specific heat of the metal?
   A. 0.301 J/g° C
   B. 0.255 J/g° C
   C. 3.32 J/g° C
   D. 0.243 J/g°C

16. 45.0g of water is at 20.0°C. The water releases 2000. J of heat energy. What is the new temperature of the water?
    A. 19.9°C
    B. 30.6°C
    C. -168°C
    D. 9.4°C

17. A sample of water absorbs 3.00×10^3 J of heat energy and its temperature rises from 20.0°C to 31.2°C. What is the mass of the water?
    A. 3.21g
    B. 64.0g
    C. 3.58g
    D. 1120g

22. A sample of carbon monoxide has a mass of 4.00g. What is the mass of oxygen in this compound if the mass of carbon is 1.71g?
    A. 1.71g
    B. 2.29g
    C. 0.59g
    D. 5.71g

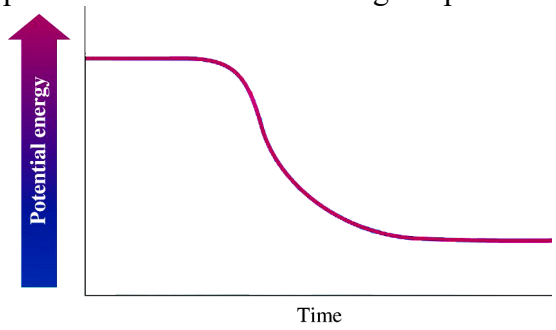
39. 12.0g of copper combine with iodine to form 36.0g of copper(I)iodide. What is the percent by mass of iodine in copper(I)iodide?
    A. 12.0%
    D. 24.0%
    C. 33.3%
    D. 66.7%

54. The specific heat of iron is 0.473 J/g°C and the specific heat of lead is 0.128 J/g°C. In order to raise the temperature of one gram of those metals by one degree Celsius,
    A. both metals require the same amount of energy.
    B. the iron requires more energy than the lead.
    C. the lead requires more energy than the iron.
    D. no correct answer is given.

63. A 400.0g metal bar requires 6.446 kJ of energy to change its temperature from 18.0°C to 95.0°C. What is the specific heat of the metal?
    A. 0.895 J/g°C
    B. 161 J/g°C
    C. $2.09 \text{ X } 10^{-4}$ J/g°C
    D. 0.209 J/g°C

68. Which phase change releases energy?
    A. Gas to liquid
    B. Solid to gas
    C. Liquid to Gas
    D. Solid to liquid

76. Which of the following processes would have a change in potential energy as shown below?



    A. melting chocolate
    B. boiling water
    C. burning gasoline
    D. frying bacon