

## Chemistry PracTest: Energy

1. Write the correct answer in the space.

- a.) \_\_\_\_\_ Unit for energy which is derived from  $\text{kg}\cdot\text{m}^2/\text{s}^2$ .
- b.) \_\_\_\_\_ Substance used in calorimeter to absorb heat.
- c.) \_\_\_\_\_ How much energy in Joules is needed to raise 1 gram of water  $1^\circ\text{C}$ ?
- d.) \_\_\_\_\_ At what **Kelvin** temperature does all kinetic energy (motion) stop?
- e.) \_\_\_\_\_ Room temperature is 295 K. What is this temperature in degrees Celsius?
- f.) \_\_\_\_\_ Gasoline and food are examples of (potential / kinetic ) energy.
- g.) \_\_\_\_\_ Solid ice at  $0^\circ\text{C}$  contains (A. No kinetic energy or B. some kinetic energy )
- h.) \_\_\_\_\_ What **Kelvin** temperature corresponds to the half-way point between freezing and boiling point of water?
- i.) \_\_\_\_\_ A  $\Delta T$  of  $25^\circ\text{C}$  is (greater than / equal to / less than ) a  $25 \Delta T$  Kelvin.
- j.) \_\_\_\_\_ What **Celsius** temperature corresponds to absolute zero?
- k.) \_\_\_\_\_ At what **Kelvin** temperature does water freeze?
- l.) \_\_\_\_\_  $100 \text{ cm}^3$  of water at  $30^\circ\text{C}$  is mixed with  $100 \text{ cm}^3$  of water at  $20^\circ\text{C}$ . What will the final temperature of the mixture be?
- m.) \_\_\_\_\_ Mo has a specific heat of  $0.248 \text{ J/g}^\circ\text{C}$ . Cr has a specific heat of  $0.448 \text{ J/g}^\circ\text{C}$ . If both are at the same temperature and each absorbs 10 kJ of heat which will have the higher final temperature?
- n.) \_\_\_\_\_ The specific heat of Al is  $0.900 \text{ J/g}^\circ\text{C}$ . How much energy is needed to heat 1 gram of Al by  $1^\circ\text{C}$ ?
- o.) \_\_\_\_\_ Metals have (lower / higher ) specific heats than water.
- p.) \_\_\_\_\_ What is the ultimate source (beginning) of all food energy?

2. Define *TEMPERATURE*.

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3. List in order of **decreasing kinetic** energy. Use code letters to rank.

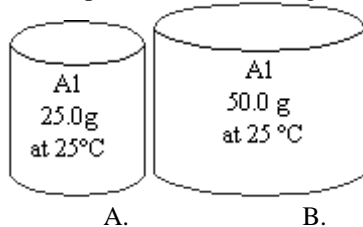
**A**- 10g liquid Cs at  $28^\circ\text{C}$       **B**- 10 g solid Cs at  $28^\circ\text{C}$       **C**- 100 g solid Cs at  $0^\circ\text{C}$       **D**- 1 g liquid Cs at  $100^\circ\text{C}$

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4. Indicate if the listed changes are (Exo)thermic or (Endo)thermic.

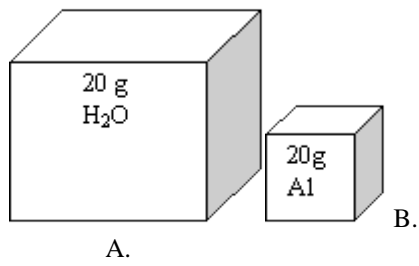
- |                             |  |                   |
|-----------------------------|--|-------------------|
| a.) _____ burning wax       | e.) _____ condensation   | i.) _____ melting |
| b.) _____ photosynthesis    | f.) _____ reaction is hot  | j.) _____ boiling |
| c.) _____ freezing of water | g.) _____ reaction produces substance with more potential energy |                   |
| d.) _____ evaporation       | h.) _____ decomposing water into its elements                    |                   |

5. Compare: Which has the greater, or same ...



- a.) \_\_\_\_\_ mass
- b.) \_\_\_\_\_ volume
- c.) \_\_\_\_\_ density
- d.) \_\_\_\_\_ kinetic energy
- e.) \_\_\_\_\_ final temperature if each absorbed 1kJ heat

6. Compare: Which has the greater, or same ...  
Both at 25°C



- a.) \_\_\_\_\_ mass
- b.) \_\_\_\_\_ volume
- c.) \_\_\_\_\_ density
- d.) \_\_\_\_\_ kinetic energy
- e.) \_\_\_\_\_ final temperature if each absorbed 1kJ heat. (See #1,n.)