Quiz 5.1 – Energy

Name: Key

Question 1 (1 points)

Name 2 types of energy (there are many to choose from)

Thermal energy

Chemical Potential energy

Question 2 (2 points)

Consider the following reaction:

$Mg(s) + 2\,H^+(aq) \longrightarrow Mg^{2+}(aq) + H_2(g) \qquad \Delta H = -467\frac{kJ}{mol}$

When this reaction is carried out in a beaker of acid, the beaker feels warm to the touch.

- Describe any changes to the chemical potential energy of the system

The system loses chemical potential energy

- Describe how heat energy changes, from the perspective of the *surroundings*

The surroundings gain thermal energy

- Is this reaction *exothermic* or *endothermic*?

Question 3 (2 points)

Consider the reaction: $C(s) + H_2O(g) \longrightarrow CO(g) + H_2(g)$

This reaction is *endothermic*

- Describe any changes to the chemical potential energy of the system

The system gains chemical potential energy

- Describe how heat energy changes, from the perspective of the *surroundings*

The surroundings lose thermal energy

If I carry this reaction out, will my thermometer record an increase or decrease in the temperature?

T will decrease