Exothermic and Endothermic Reactions Notes/W.S.-130

Exothermic reactions are reactions which release energy.

Endothermic reactions are reactions which absorb energy.

Examples:

When we boil water, heat energy changes liquid water into steam (water vapor). This is an example of an endothermic physical reaction.

water + heat energy -> steam

When propane gas is burned (combines with oxygen), carbon dioxide and water are produced and heat energy is released. This is an example of an exothermic chemical reaction.

propane + oxygen -> carbon dioxide + water + energy

Questions:

1) What is the main difference between a chemical and a physical reaction?

2) What is an exothermic reaction?

3) What is an endothermic reaction?

4) On a hot day we perspire. Water on the skin surface evaporates. This cools us down.

a) Is this a chemical or a physical reaction?

b) Is this an exothermic or an endothermic reaction?

5) The cells of the body burn glucose (a sugar) for energy. This process is called **respiration**. The reaction is given below.

glucose + oxygen -> carbon dioxide + water + heat energy

a) Is this a chemical or a physical reaction?

b) The reactants are _____ and _____ . The products are _____ , and _____ .

c) Is this reaction exothermic or endothermic?

6) When water vapor cools, it condenses into liquid water.

a) Is this a chemical or a physical reaction?

b) Is this an exothermic or an endothermic reaction?

7) Potato plants use the Sun's light to make starch (it's the white part of the potato). This process is called **photosynthesis** . Carbon dioxide and water are combined, using light energy, to make starch.

carbon dioxide + water + light energy -> starch

a) Is this a chemical or a physical reaction?

b) The reactants are _____ and _____ . The product is _____ .

c) Is this an exothermic or an endothermic reaction?

Answers: 1) In a chemical reaction, new compounds are formed. In a physical reaction, no new compounds are formed., 2) An exothermic reaction is one which releases energy., 3) An endothermic reaction is one which absorbs energy., 4)a) physical, b) endothermic, 5)a) chemical, b) glucose, carbon dioxide, water, c) exothermic, 6)a) physical, b) exothermic, 7)a) chemical, b) carbon dioxide, water, starch, c) endothermic.