**Pre-Test**

**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Biofuel PBL Unit Class\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Multiple Choice: Write in blank letter for best answer to each question.**

1. Where does the United States currently get most of its oil?

A. Canada & Latin America C. Iran

1. Antarctic D. Asia

2. Fossil fuels include diesel and gasoline. Biofuels include:

1. Natural gas C. Oil
2. Ethanol D. Coal
3. The amount of carbon has changed from the long-ago past to current time. What is NOT a change in the carbon life cycle?
4. Greatly reduced in the atmosphere
5. Greatly increased in the hydrosphere
6. Balanced in the biosphere
7. Greatly reduced in the lithosphere

4. Greenhouse gasses include:

1. Hydrogen gas C. Sulfur
2. Oxygen D. Nitrogen oxide
3. Where does the mass of a plant come from?
4. Water C. carbon dioxide in the air
5. Sunlight D. minerals from the soil

6. Given what you have learned about processing biomass into biofuel, which is the correct biofuel pathway?

1. Trees/grasses--ethanol/butanol--cellulose--enzymatic hydrolysis/fermentations
2. Ethanol/butanol--trees/grasses--cellulose--enzymatic hydrolysis/fermentations
3. Trees/gasses--cellulose--ethanol/butanol--enzymatic hydrolysis/fermentations
4. Trees/grasses--cellulose--enzymatic hydrolysis/fermentation--ethanol/butanol
5. Photosynthesis is the process that converts light energy into chemical energy.

Which is false

1. Plants breathe in CO2
2. Light energy is the main source of energy on earth
3. Plants produce glucose
4. Plants give off CO2

8. Ethanol can be made from:

1. Sugarcane C. Corn
2. Wheat D. All of the Above

9. Some characteristics of a good biofuel plant are:

A. Whole shoot can be used C. Crops also used for food

B. Easily used carbon D. Both A and B

**Matching: Write matching letter of item in front of correct number of item.**

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|  | 1. Enzyme | 1. Oil, natural gas, & coal |
|  | 1. Greenhouse gasses | 1. Amount of living matter in an area & a renewable resource |
|  | 1. Fossil fuel | 1. Nitrogen oxide and carbon dioxide |
|  | 1. biomass | 1. Acts as a catalyst increasing rate of chemical reaction |