Name Date ­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_ Period ­­­\_\_\_

**PHOTOSYNTHESIS**

Photosynthesis is divided into 2 parts- Photosynthesis I & II.

The overall chemical reaction of photosynthesis is:

**An overview of Photosynthesis:**

Label the parts of photosynthesis illustrated below. Write the correct terms in the spaces provided.

**THE LIGHT REACTIONS** take place in the of the .

Match the following steps with the term that correctly completes

each step of the light reactions. Then fill in the blanks on the

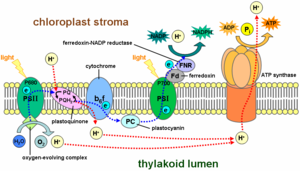
[](http://upload.wikimedia.org/wikipedia/commons/thumb/1/18/Thylakoid_membrane.png/300px-Thylakoid_membrane.png)

illustration at the right, for the metabolic processes that occur

inside the thylakoid membrane.

1. Light is absorbed by… a.) energy- rich electrons
2. Reactions center loses… b.) hydrogen carrier NADP+
3. Electrons flow along… c.) pigment molecules
4. Electrons and proteins join… d.) electron transport system
5. Water is split into… e.) chemical energy
6. Light energy is stored as… f.) H+ and O₂

**THE CALVIN CYCLE** The dark reactions are not **QUESTIONS:**

Illustrate the Calvin Cycle directly powered by the 1.) Which word equation represents the process of photosynthesis

In the space below. absorption of light energy, but by (1) carbon dioxide + water glucose + oxygen + water

byproducts of the light reactions. (2) glucose alcohol + carbon dioxide (3) maltose + water glucose + glucose

CO₂ (4) glucose + oxygen carbon dioxide + water 2.) The raw materials used by green plants for photosynthesis are

(1) oxygen and water (3) carbon dioxide and water

(2) oxygen and glucose (4) carbon dioxide and glucose

3.) An important function of chlorophyll molecules during photosynthesis

Is

1. Absorbing and storing water in root cells
2. Converting water into carbon dioxide
3. Absorbing certain wavelengths of light energy
4. Converting chemical bond energy to light energy

4.) The broad flat structure of the leaves of most plant makes them well

adapted to

1. Store large quantities of starch for later use as food
2. Absorb sunlight used in the photosynthesis reactions
3. Support the upper portions of the plant
4. Carry out the process of chemical regulation

5.) The size of stomate openings is regulated by the

Define each term below, and explain its role in photosynthesis. (1) palisade cells (3) guard cells

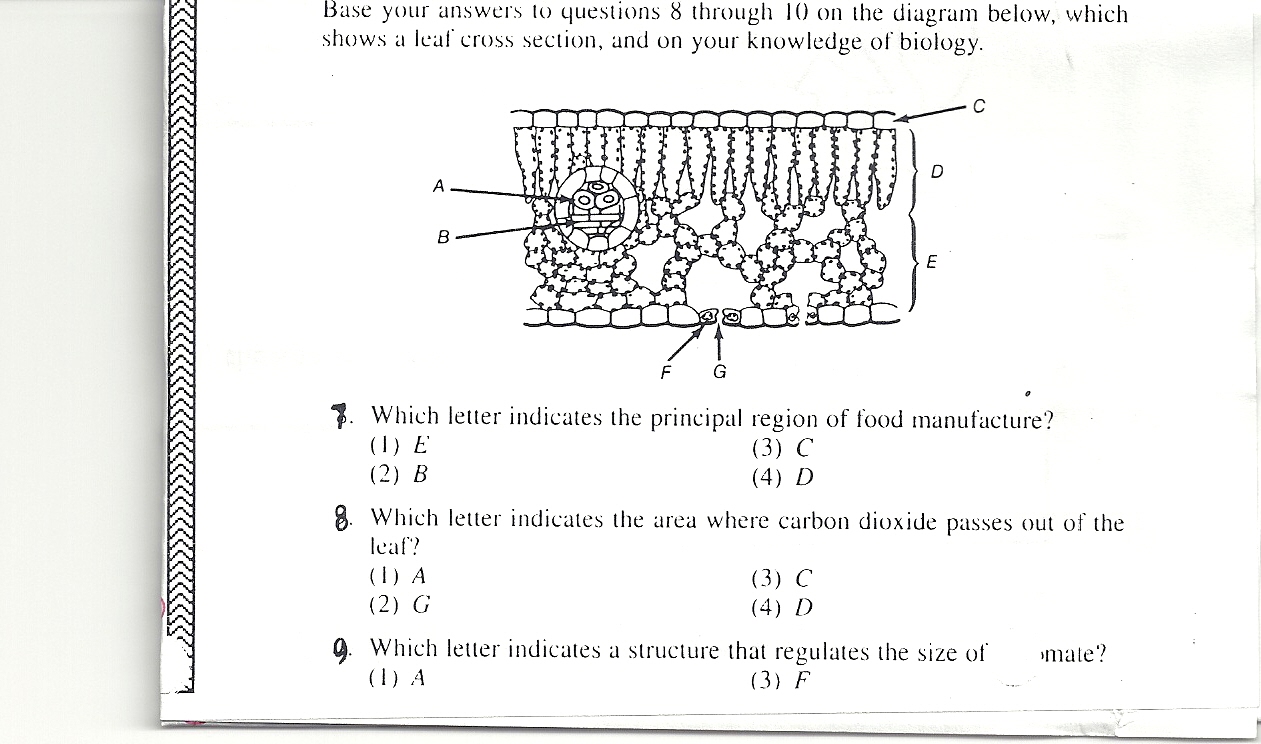
ATP= adenosine triphosphate (2) spongy cells (4) xylem cells

Used for: 6.) The openings on the lower surface of some leaves, which allow for the

exchange of gases, are called

NADP+= (1) stomates (3) lenticels

Used for: (2) guard cells (4) vascular bundles



RuBP=

Used for:

G3P=

Used for: