WORKSHEET 1

CHAPTER 6 – PHOTOSYNTHESIS

A. Choose the correct option.

1. A destarched plant is one whose
   a. leaves are free from chlorophyll.
   b. aerial parts are free from starch.
   c. leaves are free from starch.
   d. plant is free from starch.
2. The first step in the process of photosynthesis is
   a. absorption of light by chlorophyll.
   b. production ATP.
   c. release of oxygen.
   d. fixation of CO_2.
3. Formation of ATP from ADP is termed as
   a. photophosphorylation.
   b. phosphorylation.
   c. photolysis.
   d. photosynthesis.
4. The specific function of light in photosynthesis is to
   a. synthesize glucose.
   b. activate chloroplast.
   c. split water.
   d. reduce carbon dioxide.
5. Oxygen in glucose comes from which of these during photosynthesis?
   a. Water b. CO_2 c. Air d. Both water and CO_2

B. Fill in the blanks.

1. Splitting of water results in the release of _____
2. Xanthophyll is _____ coloured pigment.
3. The splitting of water molecules by photons is called _____
4. The light-independent reactions of photosynthesis are also known as _____ phase.
5. The smaller unit of light energy is _____

C. State whether the following statements are True or False.

1. Photosynthesis needs an optimum temperature.
2. Photosynthesis takes place in chromoplast.
3. KOH absorbs carbon dioxide.
4. Oxygen is necessary for photosynthesis.
5. In a typical leaf, photosynthesis occurs mainly in spongy mesophyll.

D. Name the following.

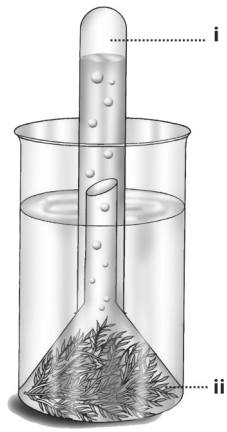
1. The chemical used to test starch.
2. The products of photosynthesis.

Name: ..... Teacher's signature: .....

Class: ..... X ..... Date: .....

3. The principle site in a green leaf for photosynthesis.
4. Source of CO_2 for aquatic plants.
5. The organisms which convert complex organic matter into simple forms.

E. The given diagram demonstrates a physiological process taking place in green plants. The whole set-up was placed in bright sunlight for several hours. Study the diagram and answer the questions below.



1. What aspect of the physiological process is being examined?
2. Explain the physiological process mentioned in Q.1 above.
3. Label the parts numbered **i.** and **ii.** in the diagram.
4. Write a balanced chemical equation for the physiological process explained in Q.2 above.
5. What would happen to the rate of bubbling of the gas if a pinch of sodium bicarbonate is added to the water in the beaker? Explain your answer.

ANSWERS

WORKSHEET 1

A. Choose the correct option.

1. c. 2. a. 3. a. 4. c. 5. a.

B. Fill in the blanks.

1. oxygen
2. yellow
3. photolysis
4. biosynthetic
5. photon

C. State whether the following statements are True or False.

1. True 2. False 3. True 4. False 5. False

D. Name the following.

1. Iodine
2. Glucose, water and oxygen
3. Chloroplast
4. CO_2 dissolved in water
5. Decomposers

E. The given diagram demonstrates a physiological process taking place in green plants. The whole set-up was placed in bright sunlight for several hours. Study the diagram and answer the questions below.

1. O_2 is produced during photosynthesis.
2. Photosynthesis is the process by which chlorophyll bearing cells produce glucose from CO_2 and water by using sunlight. O_2 is released as a by-product.
3. **i.** O_2 gas

   ii. *Hydrilla*
4. $6CO_2 + 12H_2O \xrightarrow[\text{Chlorophyll}]{\text{Sunlight}} C_6H_{12}O_6 + 6H_2O + 6O_2$
5. If sodium bicarbonate is added to the water, the rate of bubbling of the gas will increase as sodium bicarbonate provides more CO_2. So, rate of photosynethesis increases.