WORKSHEET 2

CHAPTER 6 – PHOTOSYNTHESIS

A. Name the following.

1. The process of conversion of ADP into ATP during photosynthesis.
2. The site of dark reaction of photosynthesis.
3. The point at which no exchange of CO_2 takes place between the plant and the environment.
4. The only biological process that releases oxygen into the air.
5. The food produced by green plants.

B. Choose the correct option.

1. During photosynthesis, solar energy is converted into
   a. heat energy. b. chemical energy. c. mechanical energy. d. electrical energy.
2. Example of decomposer.
   a. Earthworm b. Insect c. Fungi d. Snail
3. Function of light energy in photosynthesis.
   a. Splitting of water molecule into H^+ and OH^- b. Reduction of CO_2
   c. Activate chlorophyll d. Formation of glucose molecules
4. Plant is boiled in methylated spirit to _____
   a. to remove starch. b. to remove chlorophyll.
   c. to kill cells. d. all of these.
5. The rate of photosynthesis will be maximum in
   a. red-coloured light. b. green-coloured light.
   c. yellow-coloured light. d. violet-coloured light.

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

1. Green colour of light is the most effective for photosynthesis.
2. Green plants are heterotrophs.
3. Photosynthesis can occur in all plant cells.
4. Photosynthesis is maximum at 35 °C.
5. During photosynthesis, CO_2 is reduced and water is oxidized.

D. Give reasons.

1. ATP is needed for dark reaction.
2. Chloroplasts are called energy converters.

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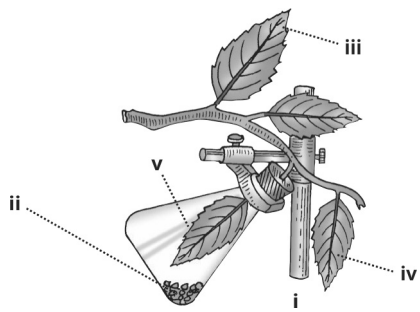
3. Respiration is said to be reversal of photosynthesis.
4. Chlorophyll is necessary for photosynthesis.
5. All life on earth would come to an end if there were no green plants.

E. The given figure represents an experiment performed to demonstrate a particular aspect of photosynthesis. The apparatus was kept in sunlight for almost the whole day. i represents a certain condition inside the flask and ii represents a chemical responsible for this condition. Answer the following questions.

1. What is the object of the experiment?
2. What is the special condition inside the flask? What is the chemical substance numbered **ii**?
3. In what way will the three leaves (**iii**, **iv** and **v**) differ at the end of the experiment, when tested with iodine solution?
4. Name the process which is reverse of photosynthesis in terms of the end products.
5. Write the overall chemical equation for the process named above in Q.4.



ANSWERS

WORKSHEET 2

A. Name the following.

1. Photophosphorylation
2. Stroma of chloroplast
3. Compensation point
4. Photosynthesis
5. Glucose

B. Choose the correct option.

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

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

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

D. Give reasons.

1. Since ATP provides energy for dark reaction
2. Since chlorophyll present in chloroplasts trap solar energy and converts it into chemical energy.
3. Because respiration is a catabolic process while photosynthesis is an anabolic process.
4. Chlorophyll traps solar energy and converts it into chemical energy.
5. Because green plants manufacture food by the process of photosynthesis and give out oxygen, which is a life supporting gas for all organisms.

E. The given figure represents an experiment performed to demonstrate a particular aspect of photosynthesis. The apparatus was kept in sunlight for almost the whole day. i represents a certain condition inside the flask and ii represents a chemical responsible for this condition. Answer the following questions.

1. To show that CO_2 is essential for photosynthesis.
2. The flask is free from CO_2 as the chemical substance absorbs all the CO_2. KOH is the chemical substance.
3. When tested with iodine leaves **iii** and **iv** show presence of starch while leaf **v** will not show starch. Since KOH absorbs all the CO_2 and no photosynthesis takes place.
4. Respiration
5. $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$