Exercises

A. Fill in the blanks.

1. The end products of photosynthesis are Glucose and oxygen.
2. A chloroplast consists of two parts— grana and Stroma.
3. Grana are piles of flattened saclike bodies called thylakoids.
4. Plants exchange gases through openings on leaves called Stomata.
5. Two bean-shaped guard cells surround a stoma.
6. Carbon dioxide traps heat resulting in the global warming.
7. lenticels are pores on stems, tubers and fruits through which gases are exchanged.
8. In plants, carbon dioxide is liberated during respiration.
9. Aerobic respiration produces water, carbon dioxide and energy.
10. Respiration that does not require oxygen is called anaerobic respiration.

B. Choose the correct option.

1. Chlorophyll is essential to trap
   (a) oxygen (b) carbon dioxide
   (c) water (d) solar energy
2. Stomata are mostly present in the
   (a) stem (b) root
   (c) leaf (d) fruit
3. Stomatal openings are surrounded by
   (a) grana (b) thylakoids
   (c) guard cells (d) stroma
4. Photosynthesis is affected by
   (a) light (b) carbon dioxide
   (c) chlorophyll (d) all of these
5. Aerobic respiration occurs within the
   (a) cytoplasm (b) mitochondria
   (c) chloroplast (d) cytoplasm and mitochondria
6. Alcohol is produced in plants during
   (a) aerobic respiration (b) anaerobic respiration
   (c) photosynthesis (d) transpiration
7. Chloroplasts are used for
   (a) photosynthesis (b) respiration
   (c) both (a) and (b) (d) none of these
8. Lenticels are found on
   (a) fruits (b) tubers
   (c) stems (d) all of these

C. Match the following.

Column A	Column B
1. Chloroplast	a. Site of respiration (2)
2. Mitochondria	b. Heat trapped by carbon dioxide (8)
3. Stomata	c. Occurs without oxygen (6)
4. Starch	d. Openings in the leaves (3)
5. Guard cells	e. Piles of thylakoids (7)
6. Anaerobic respiration	f. Site of photosynthesis (1)
7. Grana	g. Turns blue-black when iodine solution is added (4)
8. Greenhouse effect	h. Open and close a stoma (5)

D. Answer the following.

1. What is photosynthesis? What are the factors that affect this process?
2. How do guard cells help open and close a stoma?
3. Distinguish between aerobic and anaerobic respiration.

JUNE 2020

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Respiration in plants

Answer the following :

1. Define respiration.

Ans: The process of breakdown of food particles in the presence or absence of oxygen to produce energy along with carbon dioxide and water is known as respiration.

2. Write down the word equation for respiration.

Ans: Glucose + Oxygen ⟶ carbon dioxide + water + energy.

3. Name the two types of respiration.

Ans: The two types of respiration are —

1. Aerobic respiration.
2. Anaerobic respiration.

4. What is lenticels ?

Ans: Lenticels are the pores present on the old and woody stems, roots, tubers, fruits etc. that helps in the exchange of gases. Lenticels are clearly visible on apples, pears and potatoes.

5. Write down the difference between aerobic and anaerobic respiration.

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Ans: Difference between aerobic and anaerobic respiration

Aerobic respiration	Anaerobic respiration.
i) Oxygen is required for aerobic respiration.	i) Anaerobic respiration can occur without oxygen
ii) Large amount (38 ATP) of energy is released.	ii) very less amount (2 ATP) of energy is released.
iii) The end products of aerobic respiration are carbon-di-oxide and water.	iii) The end products of anaerobic respiration are carbon dioxide and alcohol.
iv) Aerobic respiration occurs in all higher plants and animals.	iv) Anaerobic respiration occurs in micro-organism.

Ans: Difference between photosynthesis and Respiration.

Photosynthesis	Respiration
i) Energy is used to make food in photosynthesis.	i) Food is broken down to liberate energy in this process.
ii) Light is required for the process of photosynthesis	ii) Light is not required.
iii) carbon dioxide and water are raw materials while glucose and oxygen are the end products.	iii) Respiration starts with glucose and oxygen and the end products are carbon dioxide and water.
iv) Photosynthesis occurs in the chlorophyll containing green parts of the plants.	iv) Respiration occurs in all the cells of plants and animals.
v) occurs during the day only.	v) occurs day and night.

24 SUNDAY

Thinking well is wise; planning well, wiser; doing well, wisest and best of all.