

Date: 9. july.2020

Day: Thursday

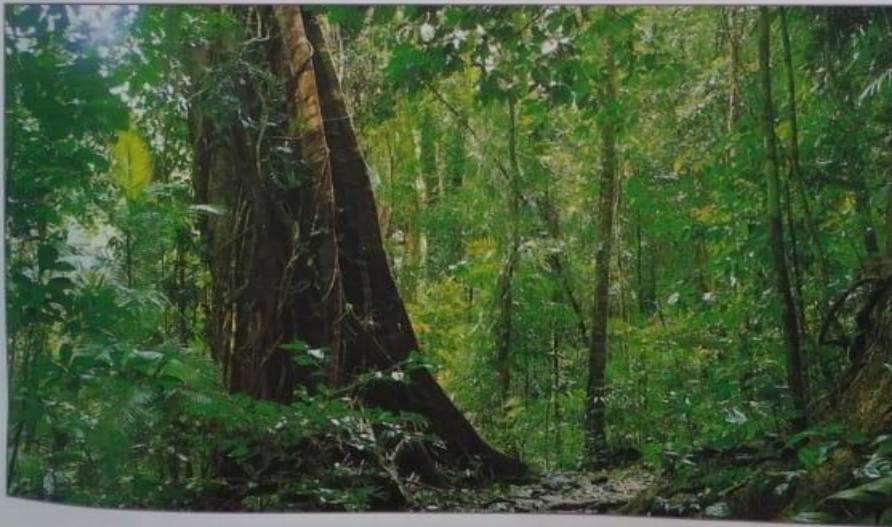
Subject: G. science

Chapter 20

Food – To Make or to Break?

In this unit, you will learn

- that photosynthesis is the process by which plants make food using water, carbon dioxide and light energy from the Sun.
- about the products of photosynthesis.
- to identify the occurrence of photosynthesis by testing for the presence of starch.
- that aerobic cellular respiration is the process of breaking down glucose in the presence of oxygen to release energy from food.
- about the products of aerobic cellular respiration.
- ** the differences between inhaled and exhaled air.



Why are rainforests sometimes called the lungs of the Earth?

Prepared by: Miss Iqra Akram Khan

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Unit 20# Food –To make or to Break

Answer the following questions:

1. Why is rainforest sometimes called the lungs of earth?

Ans: Tropical rainforests are often called the “lungs of the earth” because they generally draw in carbon dioxide and breathe out oxygen. But the amount of carbon dioxide they absorb, or produce, varies hugely with year-to-year variations in the climate.

2. Why green plants are called food factories?

Ans: Green plants are often called food factories of the world because almost all the food on Earth comes directly or indirectly from green plants.

3. Define the following term:

a. Photosynthesis

b. chlorophyll

c. stomata

Ans: **photosynthesis:** Green plants make food using carbon dioxide, water and light energy from the sun. this process is called photosynthesis. ‘photo’ means light and ‘synthesis’ means putting together.

Equation:

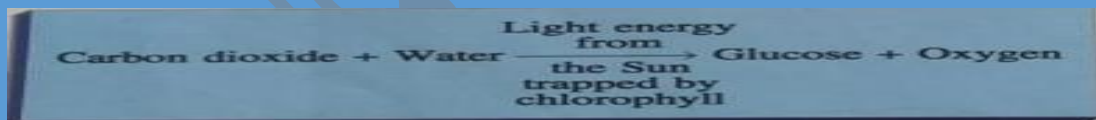
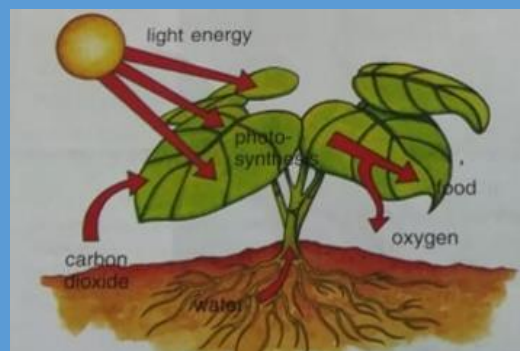


Diagram:

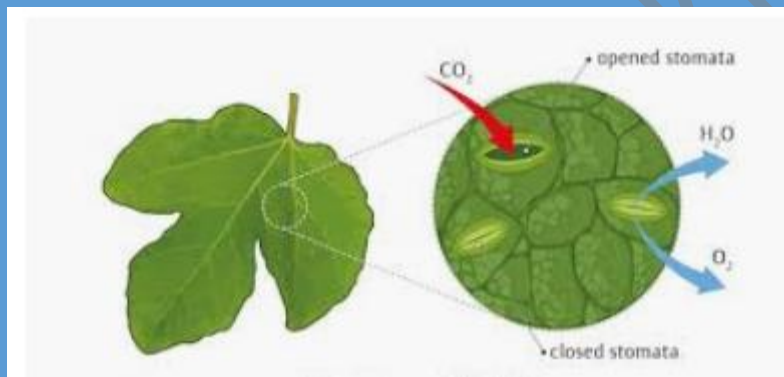


2. Chlorophyll:

The energy from sunlight is trapped by green pigments called chlorophyll found in chloroplasts which are present in the cells of green leaves. This light energy is used to turn the raw materials, carbon dioxide and water into glucose and oxygen.

3. Stomata:

~~water~~ Oxygen, the waste product, is released into the air through tiny pores called **stomata** found mainly on the underside of leaves.



Date: 13. july.2020

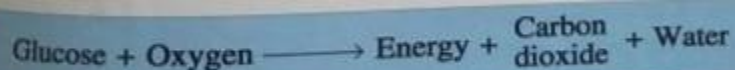
Day: MONDAY

QNO4: DEFINE RESPIRATION.

ANS: RESPIRATION:

~~complex substances~~ The chemical process by which energy is released from the breaking down of glucose or other food substances is called **respiration**.

EQUATION:



QNO5: HOW MANY TYPES OF RESPIRATION?

ANS: THERE ARE TWO TYPES OF RESPIRATION:

1. AEROBIC RESPIRATION
2. ANAEROBIC RESPIRATION

QNO6: WRITE DIFFERENCE BETWEEN AEROBIC AND ANAEROBIC RESPIRATION.

AEROBIC RESPIRATION	ANAEROBIC RESPIRATION
1) It takes place in the presence of oxygen.	1) It takes place in the absence of oxygen.
2) In aerobic respiration, complete oxidation of glucose takes place.	2) In anaerobic respiration, the glucose molecule is incompletely oxidised.
3) End products are CO ₂ and water.	3) End products are either ethyl alcohol or lactic acid and CO ₂ .
4) Lot of energy is liberated (38 ATP).	4) Relatively small energy is liberated (2 ATP).
5) It occurs in plant's and animal's cells.	5) Occurs in many anaerobic bacteria and human muscle cells.

Date: 14. july.2020

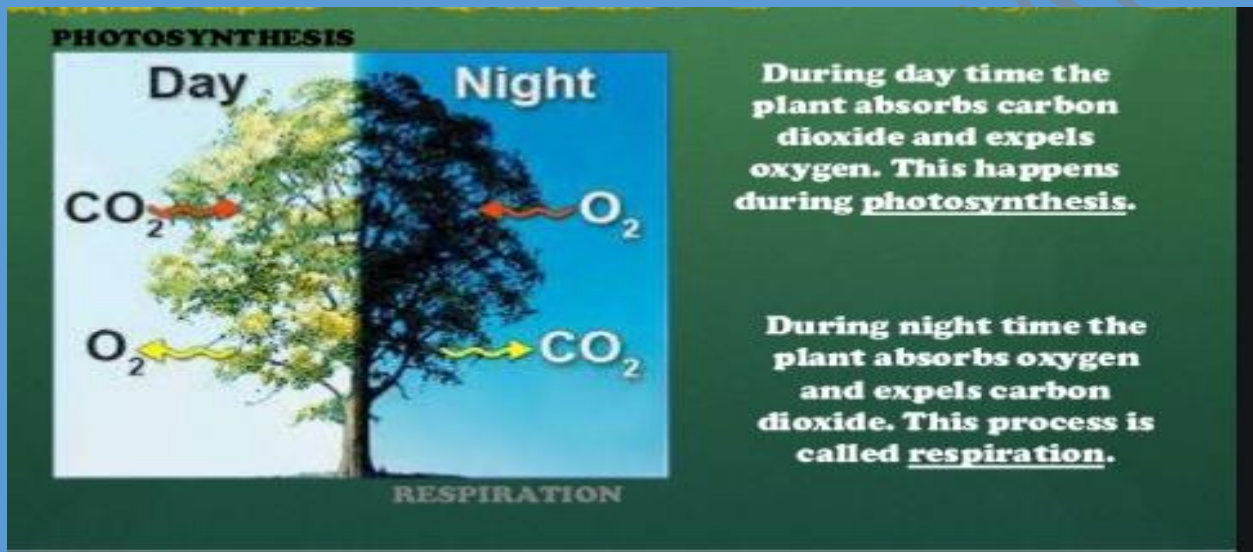
Day: Tuesday

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Qno1: Explain the mechanism of respiration.

Ans: Mechanism of Respiration:

Respiration occurs all the time in plants and animals.



Qno2: Define Breathing.

Ans: Breathing:

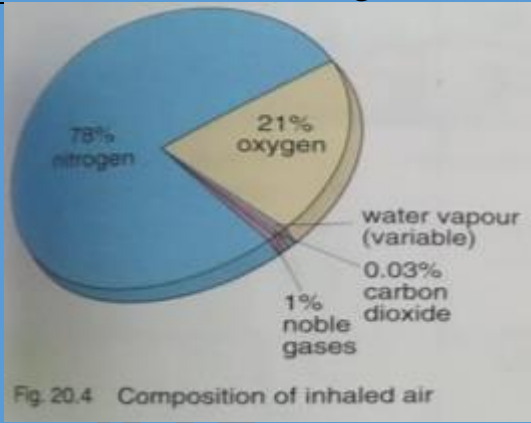
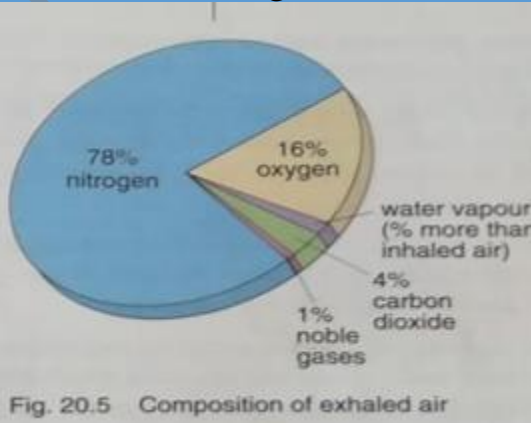
Breathing is the process of moving air into and out of the lungs to facilitate gas exchange with the internal environment, mostly by bringing in oxygen and flushing out carbon dioxide.

Qno3: write difference between breathing and respiration.

Respiration and breathing	
Respiration	Breathing
Takes place all the time	Takes place all the time
Take place in every cell	Take place in the lungs
A process that breaks down food to release energy	A process of gaseous exchange with the environment
Uses oxygen obtained from breathing	Takes in oxygen from environment
Produces carbon dioxide	Removes carbon dioxide produced during respiration

Qn04: Difference between inhalation and exhalation.

Ans:

Inhalation	Exhalation
- Inhalation is the process of intake of air into lungs.	Exhalation is the process of letting air out from lungs.
 <p>Fig. 20.4 Composition of inhaled air</p>	 <p>Fig. 20.5 Composition of exhaled air</p>

Date: 15. july.2020

Day: Wednesday

Review Exercise

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1. What is photosynthesis?

Ans: done

2. What are the conditions for photosynthesis to take place? Name the raw materials and products of photosynthesis. What is the waste product?

Ans: **conditions for photosynthesis:** Light energy from sun trapped by chlorophyll.

Raw material: carbon dioxide and water

Product: Glucose

Waste product: oxygen

3. How can one determine whether photosynthesis has taken place in a leaf?

Ans: To find out if a leaf has carried out photosynthesis, we may test it for starch. starch turns blue- black when iodine solution is added to it. It shows photosynthesis taken place in a leaf.

Qno4: (a) define aerobic cellular respiration.

Aerobic cellular respiration: in aerobic cellular respiration, glucose combines with oxygen in living cells to release most of energy needed by the body.

Qno4: (b) name the useful product of this process.

Ans: Energy is the useful product of this process.

Qno4: (C) name the waste product of this process. How do they leaved the body.

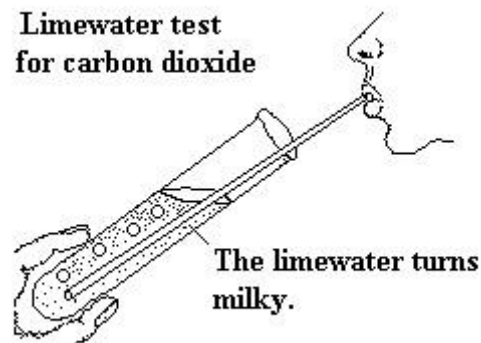
Ans: The waste products of aerobic respiration are carbon dioxide and water. Animals remove carbon dioxide from their bodies when they breathe out. In daytime, plants use some of this carbon dioxide for photosynthesis. At night, they release the carbon dioxide to their surroundings.

QNO5: state the difference between inhaled and exhaled air.

Ans : already done

Qno6: Describe experiments to show the differences between inhaled and exhaled air.

Ans: There is a very simple experiment that we can do to prove that exhaled air contains more carbon dioxide than inhaled air. Carbon dioxide will turn colorless limewater milky/cloudy.



The CO₂ percentage in inhaled air is so small that it doesn't have an effect on the limewater, however bubble some exhaled air through it and it will turn milky/cloudy.
