Class X

Chapter 6

Life Processes - Case Study

Respiration is a metabolic process that occurs in all organisms. It is a biochemical process that occurs within the cells of organisms. Like other living organisms, plant also exchange gases with their environment. However, plants do not possess any transport system for the gases. Different parts of plants exchange gases independently. The gases move entirely by diffusion. Different parts of the plant respire at different rates. Energy liberated during oxidative breakdown of respiratory substrate is partly stored in ATP. The rest is dissipated as heat.

1. Name the two ways in which glucose is oxidized to provide energy in various organisms.
2. What advantages over an aquatic organism does a terrestrial organism have with regard to obtaining oxygen for respiration?
3. What are the different ways in which glucose is oxidized to provide energy in various organisms?
4. “All plants give out oxygen during day and carbon dioxide during the night”. Do you agree with this statement? Give reason.
5. If a plant is releasing carbon dioxide and taking in oxygen during the day, does it mean that there is no photosynthesis occurring? Justify your answer.

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Chapter 6

Life Processes- Case Study (Set II)

Excretion

The purpose of making urine is to filter out waste products from the blood. Just as CO_2 is removed from the blood in the lungs, nitrogenous waste such as urea or uric acid are removed from blood in the kidneys. It is then no surprise that the basic filtration unit in the kidneys, like in the lungs, is a cluster of very thin-walled blood capillaries. Each capillary cluster in the kidney is associated with the cup-shaped end of a tube that collects the filtered urine. Each kidney has large numbers of these filtration units called nephrons packed close together. Some substances in the initial filtrate, such as glucose, amino acids, salts and a major amount of water, are selectively re-absorbed as the urine flows along the tube. The amount of water reabsorbed depends on how much excess water there is in the body, and on how much of dissolved waste there is to be excreted

- ---------- is considered as the basic functional unit of the human kidney.
- What is the other name of Artificial Kidney?
- What is an artificial kidney?
- Name the organelle in amoeba that performs excretion and osmoregulation.
- Why the conversion of ammonia to urea is essential in human body?
- ''About 180 litres of filtrate is produced each day but only 1.5 of urine is excreted out“ justify the statement.
- What are the different substances excreted by plants?

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Chapter 6
Life Processes- Case Study (Set III)

The organ system of human beings which is responsible for the transport of materials inside the body is called circulatory system. The various organs of the circulatory system in humans are: heart, arteries, veins and capillaries. Blood is also considered a part of the circulatory system in the circulatory system, the heart acts as a pump to push out blood. The artillery, veins and capillaries act as pipes through which the blood flows. These tubes that carry blood are called blood vessels. Thus, there are three types of blood vessels in the human body: arteries veins and capillaries. The heart is roughly triangular in shape. It is made of special muscles called cardiac muscle. The size of our heart is about the same as our 'clinched fist'. The heart has four compartment called 'chambers' inside it. The upper two chambers of heart are called atria, and the lower two chambers of heart are called ventricles. The two atria receive blood from the two main veins. And the two ventricles transport blood to the entire body and the lungs. The left atrium is connected to the left ventricle through a valve. Similarly, the right atrium is connected to the right ventricle through another valve. These valves prevent the backflow of blood into atria when the ventricles contract to pump blood out of the heart to the rest of the body.

1. Which Chamber of heart receives oxygenated blood?
2. Name the valve present between pulmonary artery and right atrium.
3. Which valve prevents the backflow of blood into atria?
4. Define circulatory system?
5. Write the difference between arteries and veins.
6. What are the two types of circulation in a human body? And define them.