

In-text Questions

Q1. What advantages over an aquatic organism does a terrestrial organism have with regard to obtaining O_2 for respiration?

A Terrestrial organisms obtain oxygen directly from air through different organs but aquatic organisms obtain it dissolved from water. Since, the amount of dissolved O_2 is fairly low compared to the amount of O_2 in air.

Q2. What are the different ways in which glucose is oxidized to provide energy in various organisms?

A Glucose is first broken down in the cell cytoplasm into a three carbon molecule called pyruvate. Pyruvate is further broken down by different ways to provide energy. The breakdown of glucose by different pathways.

Q3. How is oxygen & carbon dioxide transported in human beings?

- A
- Where oxygen diffuses from alveoli into the blood capillaries it combines with haemoglobin called oxyhaemoglobin.
 - As blood passes through the tissue of the body, the O_2 from the blood diffuses into the cell. Where as carbon dioxide produced during respiration diffuses into the blood & is carried to the lungs.

Q4. How are lungs designed in human beings to maximize the area for exchange of gases?

A Each lung has highly branched structures called bronchioles. The tip of each bronchiole has balloon like structure called alveoli. The alveoli provides maximum surface to maximize area for exchange of gases.

Q9. Explain

How are the alveoli designed to maximize the exchange of gases?

A The alveoli are thin walled & richly supplied with a network of blood vessels to facilitate the exchange of gases between blood & tissues filled in alveoli. They have a balloon like structure that provides maximum surface area for exchange of gases.