

Write 4 points of difference between aerobic and anaerobic respiration

aerobic respiration	anaerobic respiration
Oxygen is present when this form of respiration takes place	Oxygen is absent when this form of respiration takes place
It involves the exchange of gases between the organism and the outside environment	Exchange of gases is absent
It can be found in the cytoplasm and the mitochondria	It can be found only in cytoplasm
Glucose breaks down into carbon dioxide and water	Glucose breaks down into ethyl alcohol, carbon dioxide and energy

What advantage over an aquatic organism does a terrestrial organism have with regards to obtaining oxygen for respiration.

Terrestrial organism breathes by using atmospheric

dissolved in water. A terrestrial animal has over an aquatic animal with regards to obtaining oxygen for respiration. It's because the air in the atmosphere contains the maximum amount of oxygen.

What are the different ways in which glucose is oxidised to provide energy in various organisms?

- (i) Anaerobic respiration - The respiration which takes place without oxygen is called anaerobic respiration. Example - Yeast and some bacteria breakdown glucose into ethanol and carbon dioxide.
- (ii) Aerobic respiration - The respiration which uses oxygen is called aerobic respiration. Example - Plants and animals breakdown glucose completely into carbon dioxide and water to release energy.

How is oxygen and carbon dioxide transported in human beings?

- (i) Oxygen enters the blood from the lungs and carbon dioxide is expelled out of the blood into the lungs.

- (iv) The blood serves to transport both gases
(iii) oxygen is carried to the cells
(v) Carbon dioxide is carried away from the cells

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

In humans, a pair of lungs are designed in such a way that they are lined by a thin membrane. The smaller tubes called bronchioles, ~~are~~ ~~like~~ ~~structure~~ ~~called~~ ~~bronchioles~~ a balloon like structure called alveoli and a network of blood capillaries increases the surface area for the exchange of gases.

Why is the trachea provided with cartilaginous rings?
The cartilage ring is C-shaped because trachea presses against the oesophagus. It prevents ~~trachea~~ ~~prevents~~ the trachea from collapsing during breathing in and out. In human, there are ~~and~~ ~~about~~ one above 15 to 20 incomplete C-shaped cartilaginous rings. Hence the

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

Alveoli are pouch like air sacs that is made up of simple squamous epithelium. It has a thin cell wall to facilitate gaseous exchange.

The presence of millions of alveoli in the lung, provide ample surface area to facilitate gaseous exchange between the air in alveoli and blood in surrounding capillaries. Oxygen diffuses across the alveolar and capillary wall into the bloodstream while carbon dioxide diffuses from blood across the mentioned walls into the alveoli.