

HOME ASSIGNMENT

1. NCERT Q -

③ (Q3) How is oxygen and carbon dioxide transported in human beings?

Ans: ★ Oxygen & CO_2 are transported in human beings through blood vessels to the different parts of the body & from the parts of body respectively.

★ After passing through the alveoli; O_2 & CO_2 get diffused into the blood and are carried by respective blood vessels.

★ In case of O_2 ; the thick walled arteries carry oxygenated blood from heart to the diff. parts of body after binding with RBC.

★ CO_2 is carried from the cells back to the lungs by the ~~veins~~ blood vessels and is present in solubilised form in the water.

★ Thus, the transportation of O_2 & CO_2 takes place in human beings.

④ (Q2) How are lungs designed to maximise the ^{SA for} exchange of gases in human beings?

Ans: ★ In human beings, a pair of lungs are designed in such a way that they are lined by a thin membrane and smaller tubes called bronchioles ending in air sacs called as alveoli.

★ Alveoli are balloon like structures that provide a surface for exchange of gases to take place.

★ The walls of alveoli are provided with extensive network of blood vessels. So, lungs maximise surface area due to presence of millions of alveoli which make the chest cavity spacious and provide a surface for exchange of gases.

NCERT Exercise →

⑨ How are alveoli designed to maximise the exchange of gases?

Ans: ★ Alveoli are balloon like structures which are present at the terminal end of the bronchioles.

★ Alveoli are one cell layer thick (made up of squamous epithelium) and consists of an extensive network of blood capillaries.

★ This structure of alveoli provides a huge surface area for exchange of gases to take place in the lungs.

(Q5) What advantage ~~does~~ ^{over} an aquatic organism does a terrestrial organism have with regard to obtaining oxygen for respiration?

Ans. ★ An aquatic organism breathes using the dissolved oxygen present in water where the O_2 content is low.

★ While a terrestrial organism breathes through the free atmospheric oxygen present in the environment where oxygen content is high. So, it ~~has to~~ ^{can} breathe slowly at a lesser rate.

★ But the aquatic animals breathe faster to obtain as much as O_2 possible and spend more energy as compared to a terrestrial animal.

(Q6) Why is the trachea provided with cartilaginous rings?

Ans: ★ The trachea is provided with cartilaginous C-shaped rings because they prevent the trachea from collapsing while breathing in and out.

★ They allow the trachea to flex and relax to steady the breathing & support the throat.