SCIENCE : Life Processes

64) What advantages does a terrestrial organism have over an aquatic organism in obtaining oxygen for respiration?

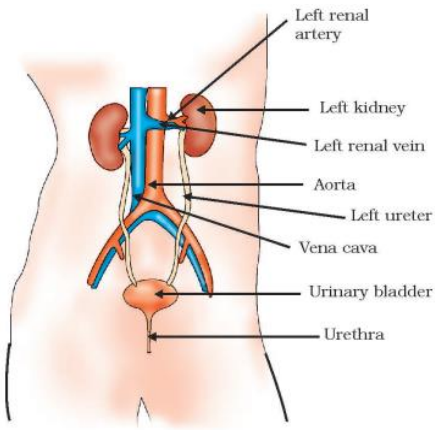
Ans: The amount of oxygen in the air is more than the amount dissolved in the water. Therefore, terrestrial organisms make less effort to get oxygen than aquatic organisms.

65) What are the ways of glucose oxidation to provide energy in different organisms?

Ans: There are two types of respiration for oxidising glucose, i.e., aerobic and anaerobic respiration. In aerobic respiration, the complete oxidation of glucose takes place. The optimum output of energy is obtained. Oxygen is required for this process.

In anaerobic respiration, the process takes place in the absence of oxygen. The complete oxidation of glucose does not take place. Bacteria exhibit this process. In our calf muscles, sometimes anaerobic respiration takes place.

66) DrawExcretory system in human beings



67) Explain oxygen and carbon dioxide transport in human beings.

Ans: A gas transportation system transports oxygen and carbon dioxide in human beings. This system comprises the lungs, heart, veins and arteries.

Lungs breathe in oxygen-rich air and breathe out carbon-dioxide-rich layers.

The heart pumps deoxygenated blood to the lungs for oxygenation and distributes it to the various body parts.

Veins carry deoxygenated blood to the heart. The pulmonary vein is the exception which has oxygenated blood from the lungs to the heart.

Arteries carry oxygenated blood to various parts of the body from the heart. One exception is the pulmonary artery which carries deoxygenated blood from the heart to the lungs.

68) How are the lungs designed to maximise the area for exchanging gases in humans?

Ans:- The air passage in the lungs is divided into smaller tubes called bronchi which form bronchioles. The bronchioles terminate in balloon-like structures called alveoli. These alveoli provide maximum area for the gaseous exchange. The alveoli walls are very thin and contain an extensive network of blood vessels to facilitate the exchange of gases.

69) What are the components and their function in human beings?

Ans: A well-developed circulatory system is present in humans, including the heart, blood vessels and blood.

The heart is responsible for pumping and circulating blood in the whole body.

Blood vessels include arteries, veins and capillaries. The arteries have thick walls and carry oxygenated blood to different body parts.

Veins are thin-walled blood vessels carrying deoxygenated blood from all body parts back to the heart.

Capillaries are thin and narrow blood vessels in which the exchange of materials between the blood and the surrounding cells occurs.

Blood acts as connective tissue and transports food, oxygen, waste material and hormones.

70) Why is the separation of oxygenated and deoxygenated blood in mammals and birds necessary?

Ans: Mammals and birds are warm-blooded animals. They control body temperature and do not depend on the environment to regulate body temperature. So birds and mammals need optimum oxidation of glucose which is possible with a good supply of oxygen without mixing oxygenated and deoxygenated blood.

71) Name components of the transport system in organised plants.

Ans: The highly organised components of the transport system in plants are Xylem and phloem. Xylem contains vessels and tracheids. The phloem comprises sieve tubes and companion cells.

72). How are water and minerals transported in plants?

Ans: The vessels and tracheids of roots, stems and leaves in xylem tissue are interconnected and form a continuous water-conducting channels.

The cells of the roots in soil contact actively take up ions, and a difference between ion concentrations is created. A steady movement of water into the root xylem from the soil creates a column of water that is pushed upwards. The plants use another strategy to move the water in the Xylem upwards to the highest point of the plant's body.

The water lost through the stomata is replaced by water from the xylem vessel in the leaf. The evaporation of water molecules from the cells ***(Contd)***