Life Processes - NCERT Questions

Q 1.
The kidneys in human are a part of the system for

A nutrition
B respiration
C excretion
D transportation
SOLUTION:
Ans.: (c) Excretion

Q 2.
The xylem in plants are responsible for

A transport of water
B transport of food
C transport of amino acids
D transport of oxygen
SOLUTION:
Ans.: (a) Transport of water

Q 3.
The autotrophic mode of nutrition requires

A carbon dioxide and water
B chlorophyll
C sunlight
D all of these.
SOLUTION:
Ans.: (d) All of these

Q 4.
The breakdown of pyruvate to give carbon dioxide, water and energy takes place in

A cytoplasm
B chloroplast
C mitochondria
D nucleus
SOLUTION:
Ans.: (c) Mitochondria

Q 5.

How are fats digested in our bodies? Where does this process take place?

SOLUTION:
Fats are digested in the small intestine. The secretion of liver, called bile, breaks down the large globules of fat into smaller globules. This is called emulsification of fats. The bile also makes the medium alkaline so that the pancreatic enzyme, lipase further digest fats to form fatty acids.

Q 6.
What is the role of saliva in the digestion of food?

SOLUTION:
Saliva contains salivary amylase and is released in our mouth. It breaks down starch into sugar (complex carbohydrates into simpler ones).

Q 7.
What are the necessary conditions for autotrophic nutrition and what are its by-products?

SOLUTION:
For autotrophic nutrition to take place the conditions necessary are - light, chlorophyll, carbon dioxide and water. The by-product of autotrophic nutrition is oxygen which is released through stomata.

Q 8.
What are the differences between aerobic and anaerobic respiration? Name some organisms that use the anaerobic mode of respiration?

SOLUTION:
Differences between aerobic and anaerobic respiration are as follows :

	Aerobic respiration	Anaerobic respiration
1.	Takes place in presence of oxygen.	Take place in absence of oxygen.
2.	Its end products are carbon dioxide and water.	Its end products are ethanol and carbon dioxide.
3.	More energy is released.	Less energy is released.
4.	It takes place in cytoplasm and mitochondria.	It takes place only in the cytoplasm.
5.	Complete oxidation of glucose takes place.	Incomplete oxidation of gluclose takes place.

Some organisms that use the anaerobic mode of respiration are - yeast, bacteria.

Q 9.
How are the alveoli designed to maximize the exchange of gases?

SOLUTION:
The alveoli are present at the terminal of bronchioles. They are balloon shaped structures which increase the surface area for the exchange of gases and are richly supplied with blood vessels.

Q 10.
Describe double circulation in human beings. Why is it necessary?

SOLUTION:
The heart of human beings consists of two sides — right and left.
The right side of the heart receives deoxygenated blood and sends it further for purification to lungs. The left side of heart receives oxygenated blood from the lungs which is pumped further and sent to all the parts of the body through blood vessels. This is called double circulation. The energy demands for human beings is too high and hence the separation of oxygenated and deoxygenated blood is necessary to meet this energy demand.

Q 11.
What would be the consequences of the deficiency of haemoglobin in our body?

SOLUTION:
Haemoglobin is a red pigment present in our blood which carries oxygen to all the parts of the body. If there is deficiency of haemoglobin then amount of oxygen reaching our body cells will decrease which may lead to release of less energy in our body, leading to a disease called anaemia. Breathlessness, tiredness, weakness are the symptoms of anaemia.

Q 12.
What are the differences between the transport of materials in xylem and phloem?

SOLUTION:

	Transport in xylem	**Transport in phloem**
1.	Water and mineral salts are transported.	Food in aqueous form is translocated.
2.	The transport is unidirectional *i.e.*, from roots to tip.	The transport is bidirectional *i.e.*, from source to sink.

Q 13.
Compare the alveoli in the lungs and nephrons in the kidneys with respect to their structure and functioning.

SOLUTION:

	Alveolus	**Nephron**
1.	It is the structural and functional unit of lungs.	It is the structural and functional unit of kidneys.
2.	It is thin walled, has a large surface area and is richly supplied with blood vessels.	It is thin walled, has a large surface area and is richly supplied with blood vessels.
3.	It removes carbon-dioxide from the blood.	It removes nitrogenous wastes from the blood.