EXERCISE

① The kidneys in human beings are a part of the system for- (c) excretion.

2) The xylem in plants are responsible for- (b) transport of food

3) The autotrophic mode of nutrition requires - (d) all of the above.

4) The breakdown of pyruvate to give CO_2, H_2O and energy takes place in - (b) mitochondria

⑤ How are fats digested in our bodies? Where does.

Ans- The digestion of fats takes place in small intestine. Fats are present in the intestine in the form of large globules. The fat digesting enzymes are not able to act upon large globules effeciently.

→ Bile juice from the liver accomplish this in addition to acting on fats. Bile salts emulsify the large globules of fats and break them down into smaller globules. The walls of the small intestine contain glands which secrete intestinal juice. The enzymes present in it finally convert the fats into fatty acids and glycerol.

Digestion of fat in small Intestine.

Fats + Bile Juice from Liver → Emulsified fats.
(Bile salt)

Emulsified Fats + Pancreatic Juice (lipase)
⟹ Broken down fats

Broken down fats + Intestinal Juice → Fatty acids + Glycerol

(6) what is the role of saliva in the digestion of food?

Ans - Saliva secreated by the salivary glands. The saliva contains an enzyme called Salivary Amlase that breaks down starch, which is a complex molecule to give sugar.

Starch + salivary Amylase (complex molecules) ⇒ sugars (simple molecules)

(ii) The food moistured by saliva, easily breaks down in smaller parts on chewing and is further mixed thoroughly by action of muscular tounged. This all helps in digestion of starch efficiently.

(7) what are the necessary conditions for autotrophic nutrition and what are its by-products?

Ans(a) The necessary conditions for autotraplic nutrition:

(i) The presence of chlorophyll
(ii) Presence of sunlight to carry out the photosynthesis.
(iii) The adequate ~~nutrition~~ water supply to different parts of plant

(b) Byproducts of ~~auto~~ trophic nutrition: The byproducts of autotrophic nutrition are starch, water and oxygen.

(8) What are the differentce between aerobic and anaerobic respiration? Name some organisms that use the anaerobic mode of respiration.

Ans:-

Aerobic Respiration	Anaerobic Respiration
(i) in presence of O_2	(i) in absence or reduce of O_2
(ii) complete oxidational glucose.	(ii) Complete oxidation of glucose doesn't takes place.

(iii) In aerobic respiration, end products are CO_2 water and energy.

$C_6H_{12}O_6 + 6O_2 \Rightarrow$

$6H_2O + 6CO_2 + Energy$

(v) In anaerobic respiration, a large amount of energy is produced.
(38 ATP molecules per glucose molecule)

(iii) In aerobic respiration, end products are ethyl alcohol, CO_2 and little energy.

$C_6H_{12}O_6 \Rightarrow 2CO_2 + 2C_2H_5OH + Energy.$

(iv) In aerobic respiration, small amount of energy is produced (2 molecules of ATP per glucose molecule)

(ii) Organisms that use the anaerobic mode of respiration are yeast, bacteria and para-sites like tapworm (Taenia), Ascaris.

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

Ans- The alveoli have balloon-like structures, that provides an enlarged surface for the exchange of gases. The walls of the

alveoli are very thin and contain an extensive network of blood-vessels to further facilitate exchange of gases between blood and air filled in alveoli.

(10) what would be the consequences of a deficiency of haemoglobin in our bodies?

Ans - The average haemoglobin content of blood, irrespective of sex is 14.5 per 100 ml. The haemoglobin which has a very high affinity for oxygen, is responsible for absorption of oxygen from the inhaled air inside the lungs.

In case of deficiency of haemoglobin in our blood, its oxygen capacity will decrease and it teem this

would affect the process of respiration adversely. This will lead to breathlessness and person may exibit symptoms of anaemia.