

12. The Muscular system and digestive System in Human Beings

1. Fill in the blanks with the right word from the brackets.

(i) The process of digestion starts from the

(stomach/ mouth)

(ii) Eyelids have.....Muscles .

(voluntary/involuntary).

(iii)..... is not a function of the muscular system.

(Production of blood cells/ performing movements)

(d) Muscles of the heart are..... .

(ordinary muscles/ cardiac muscles)

(e) Pushing forward the food that has been chewed is the function of the

(stomach/oesophagus).

(f) Muscles in our arms and legs are

(voluntary/involuntary).

Study of muscles is called

(myology / cyology)

Ans : (1) mouth (2) voluntary (3) Production of blood cells (4) cardiac Muscles (5) Oesophagun (6) voluntary (7) myology

2. Find a match for me .

Group 'A'	Group 'B'
(1) Cardiac muscles	(a) always function in pairs.
(2) Are brought about by muscles	(b) We never feel tired.
(3) Pepsin	(c) Uncontrolled and painful contraction of muscles.
(4) Cramps	(d) Chewing movements of jaws
(5) Skeletal muscles	(e) enzyme of the gastic juice.

Answers
(1) We never feel tired.
(2) Chewing movements of jaws
(3) enzyme of the gastric juice.
(4) Uncontrolled and painful contraction of muscles.
(5) always function in pairs.

3. who is telling lie ?

Organ	Statement
1. Tongue	: My taste -buds can tell only a sweet taste
2. Liver	: I am the largest gland in the body.
3. Large intestine	: I am 7.5 meter long.
4. Appendix	: Digestion is impossible without me.
5. Lung	: I play an important role in excretion.

Ans :

(1) tongue is lying. It can sense all the different tastes.

(2) Liver is telling the truth.

(3) Large intestine is lying. Its length is 1.5 meter long.

(4) Appendix is lying. It does not perform any function in human body.

(5) Lung is telling a partial lie. It can perform function of excretion. But not as important role as performed by kidney.

4. Give reasons.

(1) Food becomes acidic in the stomach.

Ans : The wall of the stomach gastric glands is produce hydrochloric acid. Due to this the food becomes acidic in the stomach.

(2) Cardiac muscles are said to be involuntary muscles.

Ans : The muscles of heart do not depend upon our will. Cardiac muscles cause our heart to relax and contract continuously for life time.

(3) Intoxicating substances should not be consumed.

Ans :Intoxicating substances are harmful and they effect our health . This substances invite cancer like diseases. and also distribute our body function. Therefore intoxicating substances should not be consumed.

(4) Your muscles should be strong and efficient.

Ans : Our muscle should be strong & efficient because of our preten diet and regular exercise. If our muscles are not healthy then various painful problem are start.

(5) In our stomach food become acidic.

Ans : When food entered our stomach is churned that times hydralic acid, pepsin and mucus are mixed in food. therefore in our stomach food become acidic.

5. Answer the following.

(i) How many types of muscles are there? Which are those types ?

Ans : There are three types of muscles. (1) Skeletal or voluntary muscles (2) Cardiac muscles (3) Smooth or involuntary muscles.

(ii) What causes the problem of acidity ? What is effect on the body ?

Ans : In our stomach acid is produced. It is mild 0.5% HCl. Headache, heart, vomiting or skin rashes start when acid is produced.

(iii) Name the different types of teeth. What is the function of each type ?

Ans : incisors, canines, premolars and molars. are four type of teeth. For biting, breaking something into piece incisors help. canines not well developed in herbivorous animals & man. for chewing & grinding food premolars & molars are help.

(iv) Explain the gland and there secretion in our digestive system.

Ans : In our digestive system salivary gland secret saliva secret ptyalin, gastric wall gastric juice, liver, secrete bile and pancreas secret pancreatic juice.

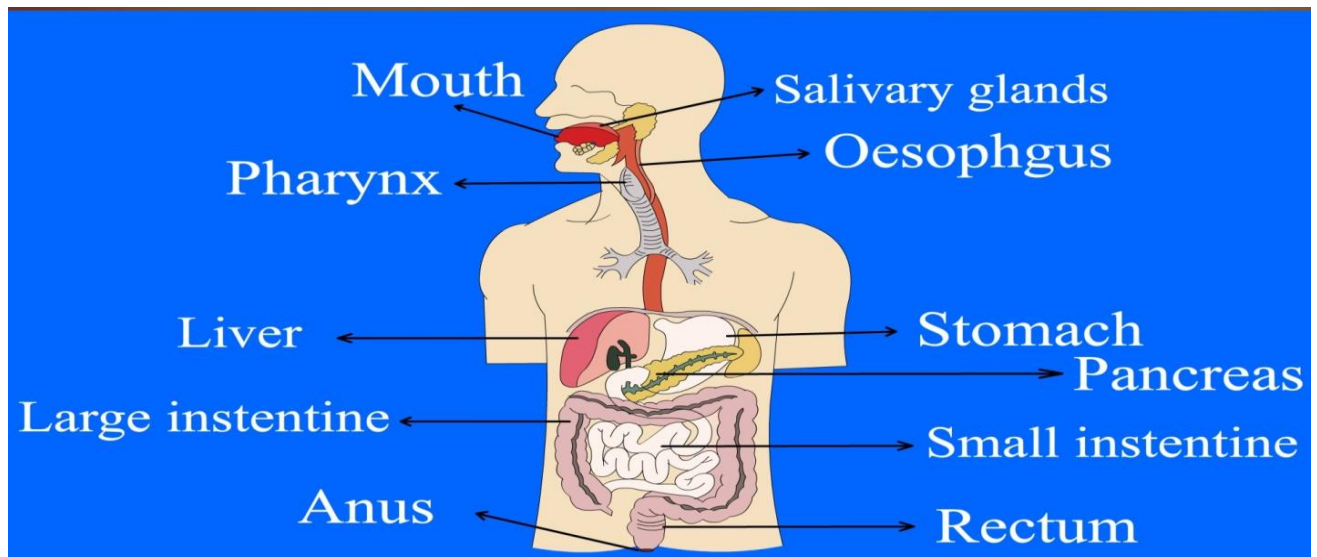
(v) Which parts of our body are made up only of muscles ?

Ans : Heart, blood vessels, diaphragm located between the thoracic and abdominal cavity and the uterus in female body are entirely made up of muscles.

(vi) Where enzymes secreted ? In digestive system which enzymes change in the food materials ?

Ans : Enzymes secrete in the body of an organism. The digestive enzymes change in the food material in digestive system.

6. Sketch and label a diagram of the digestive system and describe it in your own words.



Ans : The digestion of food starts from mouth cavity.

(1) **Mouth** : The food that is ingested is broken down into small bits by teeth. The tongue helps to understand the taste. The food is mixed with saliva by tongue. After the morsel is gulped it enters the pharynx.

(2) **Pharynx** : In the pharynx the esophagus and trachea open. When food is gulped the small flap called epiglottis covers the opening of trachea. This makes the food to enter into oesophagus.

(3) **Oesophagus** : This is the first part of the alimentary canal. It starts from pharynx and ends in stomach.

(4) **Stomach** : The stomach is a large J shaped bag. There are gastric glands in the wall of stomach. They secrete gastric juice. It has mid hydrochloric acid, pepsin and mucus. The

food is churned into semi solid slurry and mixed with gastric juice in the stomach.

The food becomes acidic in the stomach. The preliminary digestion of proteins is done by the enzyme pepsin present in the gastric juice. The mucus protects the inner lining of the stomach. The slurry of semi digested food is passed into small intestine from the stomach.

(5) **Small intestine** : Small intestine is a very long, narrow tube like part of alimentary canal. It is about 6 metre long. Here two main functions take place, viz. Completion of digestion and absorption of nutrients.

The intestinal juice from wall of small intestine, the bile juice, secreted by the liver and the pancreatic juice secreted by the pancreas are mixed with the food here. The digestive enzymes from these secretions act on the food and complete the process of digestion here. The soluble nutrients which are not ready are absorbed in the blood vessels.

(6) **Large intestine** : Large intestine is about 1.5 metres and is wider in diameter. It has two parts, colon and rectum. There is small functionless appendix near the beginning of large intestine. The water is reabsorbed here in the large intestine

and the faeces is formed. The undigested and unwanted matter from the food is thrown out through the anus.

(7) **Associated digestive glands** : The digestive glands are as follow :

(i) **Salivary glands** : Three pairs of salivary glands open in the mouth. They are located near ear, under the tongue and in the pharynx. These glands secrete saliva which contains salivary amylase or ptyalin. The food is mixed with this enzyme in the mouth. Starch is converted into maltose by this enzyme.

(ii) **Liver** : Liver is the largest gland in the human body. It stores the glucose. There is gall bladder near the liver. The bile juice secreted by the liver is stored in the gall bladder. The bile juice helps in the emulsification of fats. Bile juice contains bile salts and bile pigments.

Answer the following question.

(1) What are the effects of tobacco on the digestive system.

Ans : (i) All the organs of the digestive system of the body are harmed by any tobacco products consumption.

(ii) It causes problems like vomiting, nausea and headache

(iii) Tobacco particles spoil oral hygiene.

(iv) Also the tobacco leads to cancer and then death.

2) What is meant by muscles ? What is main function of muscle ?

Ans : Muscles are bundles of fibres that can contract and relax as required. The main function of muscle is movement.

7.Explain types of Muscles According to the functions

Ans : 1) Voluntary muscles : The muscles that work under our will are called voluntary muscles. E.g. muscles that help in the movement of hands and legs.

2)Involuntary muscles : The muscles that do not work under our will are called involuntary muscles. Some vital processes like breathing, blood circulation , digestion are essential for life. They are not under our control or will. E.g. muscles of stomach, intestine etc. are involuntary muscles.

8. Explain types of muscles according to structure.

Ans : 1) Skeletal muscles : The muscles which are attached to the skeleton and those which hold the bones are called skeletal muscles. They also give shape to our body. They are

voluntary in function. The two ends of skeletal muscles are attached to two different bones. E.g. Muscles of the arms and legs.

2) **Heart or cardiac muscles** : These muscles form the heart wall and they bring about continuous contraction and relaxation of the heart. This is known as beating of heart which is involuntary. In one minute, heart beats about 70 times.

3) **Smooth muscles** : These are involuntary muscles which are present in the internal vital organs other than the heart. E.g. muscles of the stomach, intestine, blood vessels, uterus, etc.

9. What is the mutual relationship between muscles and bones?

Ans : Muscles are firmly attached to bones by means of tendons. Due to contraction and relaxation of muscles, the bones are able to move. This helps in movement of our body.

10. Explain the function of muscles.

Ans : For the body movements, the muscles always work in groups. When some muscles undergo contraction, other muscles of the same group, show relaxation.

With this alternating action, the muscles work in coordination to perform various functions of our body.

Biceps: The muscles in the front of the bone of upper arm.

Triceps: the muscles at the back of the bone of upper arm.