

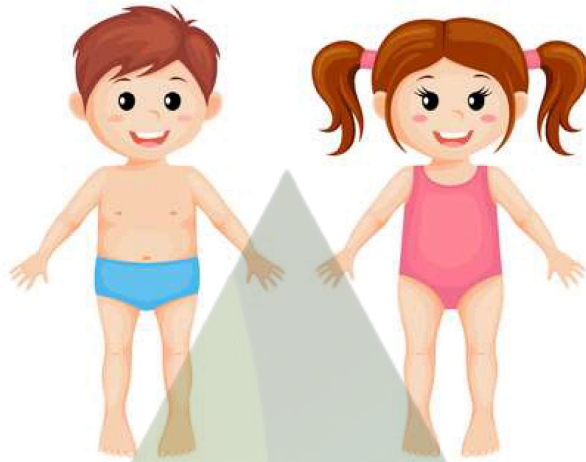
EVS



CHAPTER 1: OUR BODY



OUR BODY



➤ INTRODUCTION

The human body is a complex, highly organized structure made up of unique cells that work together to accomplish the specific functions necessary for sustaining life. Overview of the Human Body: Cells, Tissues, Organs, and Organ Systems.

➤ NERVOUS SYSTEM

Nervous system co-ordinates all our body functions. It consists of brain, spinal cord and the nerves. Brain is our body's control system. Brain sends messages and receives them from all organs, all over the body. Brain is divided into 3 parts

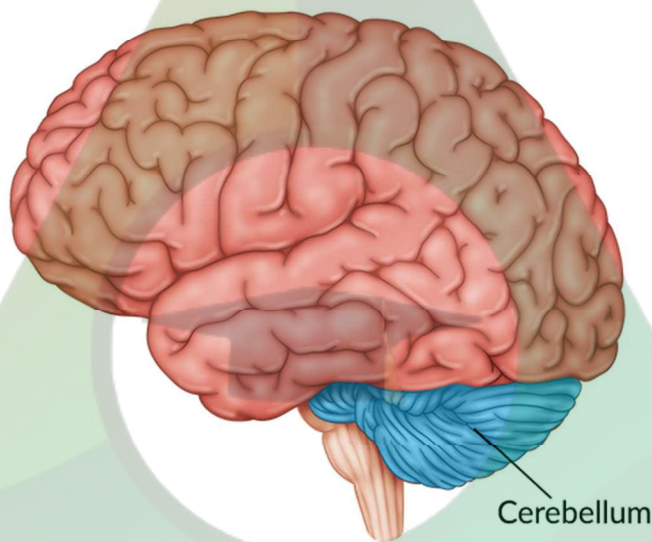


Human Brain

Accounts for 85% of our brain's weight. It consists of two -halves, right half and left half. The right half, which helps to think about things like colour, different shapes, etc. The left half is responsible for speech, maths, and logic. It is also known as the **forebrain**.

❖ Cerebellum

It is also called the Hindbrain, and is much smaller than forebrain. It is responsible for the movement of our body and maintaining body balance.



(Cerebellum)

❖ Medulla Oblongata

It joints brain and the spinal cord. Functions like digestion, blood pressure, breathing, etc. is controlled by this organ.

❖ Nerve

Spinal cord is a mass of nerves running down the middle of the backbone. A fine network of nerves connects the brain and the spinal cord to every part of our body.

They carry messages to and from the brain to the body part. Nerves present in our body are of two main types. The sensory nerves, which carries messages from the sense organ to the spinal cord or the brain. Motor nerves which carries messages from the brain or the spinal cord to various parts of the body. 90% of full weight of the brain is achieved at the age of 5 years.

Questions

1. Human nervous system consists of

- (a) Brain
- (b) Spinal cord
- (c) Nerves
- (d) All of these
- (e) None of the above

2. Nerves which carry the messages from the sense organs to the spinal cord or brain are

- (a) Motor nerves
- (b) Sensory nerves
- (c) Both type of nerves carry messages to the brain
- (d) All of the above
- (e) None of the above

Answers:

1. Correct Option (d)

2. Correct Option (b)

We Must know

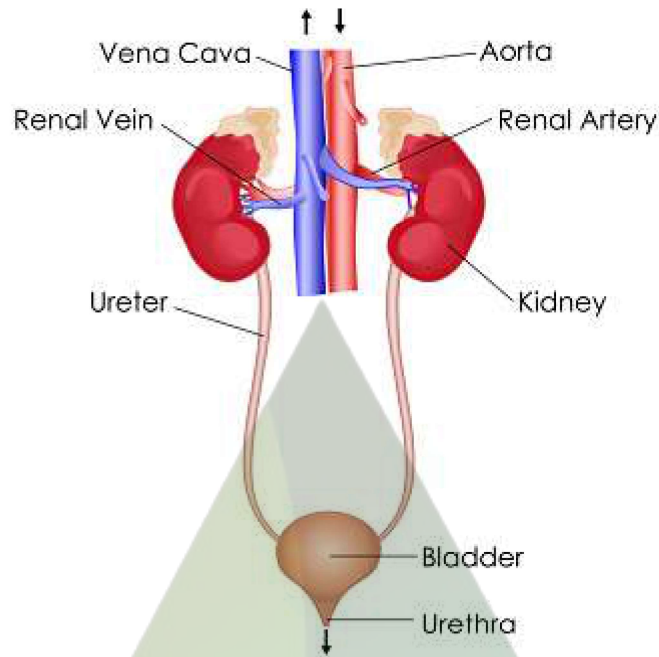
- The stomach's digestive acids are strong enough to dissolve zinc. Fortunately for us, the cells in the stomach lining renew so quickly that the acids don't have time to dissolve it.
- Each finger and toenail takes six months to grow from base to tip.
- The lungs contain over 300,000 million capillaries (tiny blood vessels). If they were laid end to end, they would stretch 2400 km.

Summary

- **Nutrients:** The component of food which is necessary for our body.
- **Sense Organ:** The organs which helps us to sense the outside world.
- **Digestion:** The process of breaking down of the complex food materials into simple form.
- **Respiration:** It is a process of releasing energy from the food.
- **Circulatory system:** It transport oxygen and nutrients to all parts of the body and bring back carbon dioxide and waste from the body.
- **Excretory system:** Removes the waste materials from the body.
- **Nervous system:** Coordinates between the body parts and brain.

➤ EXCRETORY SYSTEM

Excretory system throws out waste from our body. Human excretory system consists of kidneys, ureter urinary bladder and urethra.



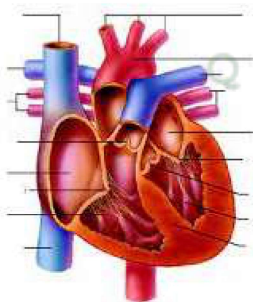
(Excretory System)

We have a pair of kidneys which is bean shaped. When the blood reaches the kidney it has both useful and harmful substance present in it. The kidneys absorb harmful substance from the blood. The waste is dissolved in water and is removed as urine. The urine from the kidney goes to the urinary bladder through tube like urethras. Urethra has an opening at end of the muscular tube through which urine passes out. The skin also helps in removing waste from our body in the form of sweat.

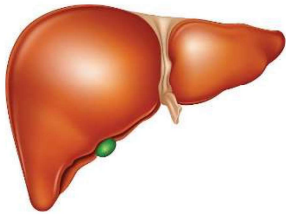
Lungs act as excretory organ by removing carbon dioxide (harmful gas) from the body.

Questions

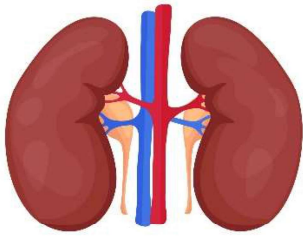
1. A person has been put on dialysis. Which one of his following organs has failed to work?



(a)



(b)



(c)



(d)

(e) All of these

2. Which one of the following is a part of excretory system?

(a) Stomach

(b) Liver

(c) Heart

(d) Kidney

(e) All of these

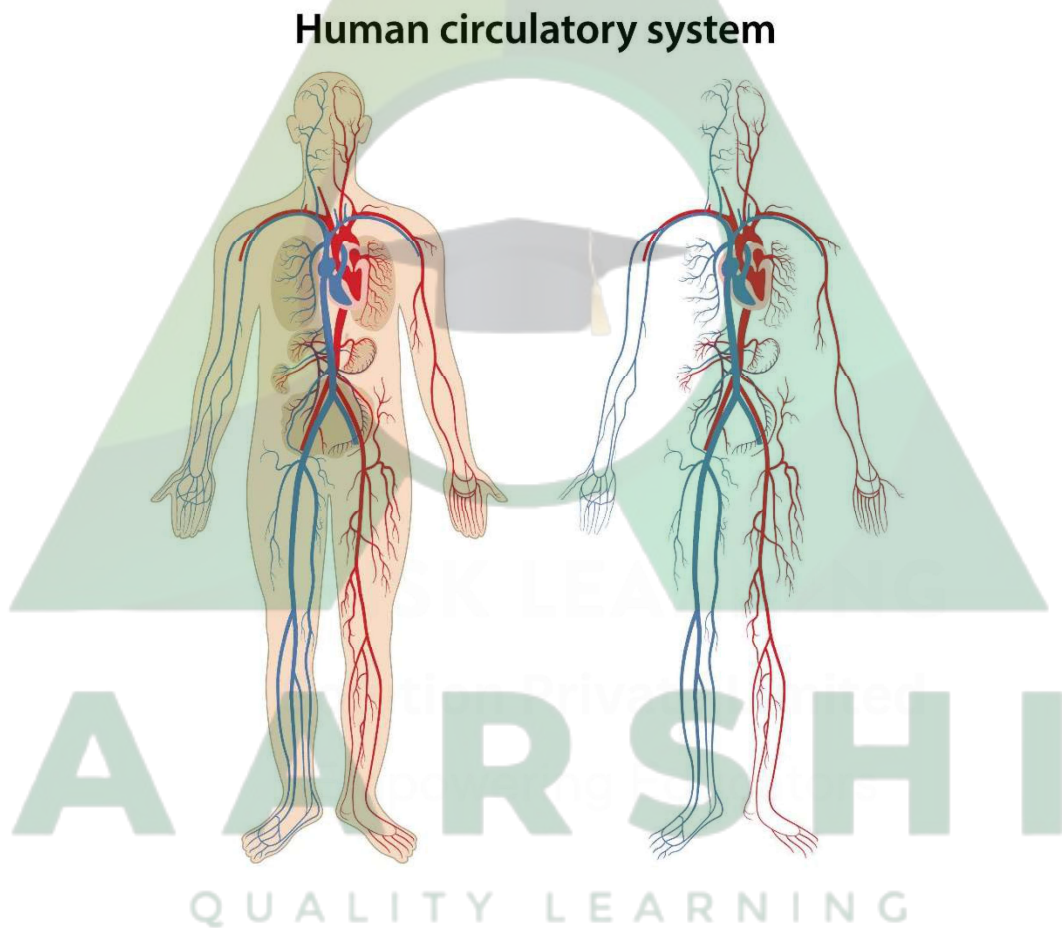
Answers:

1. Correct Option (c)

2. Correct Option (d)

➤ CIRCULATORY SYSTEM

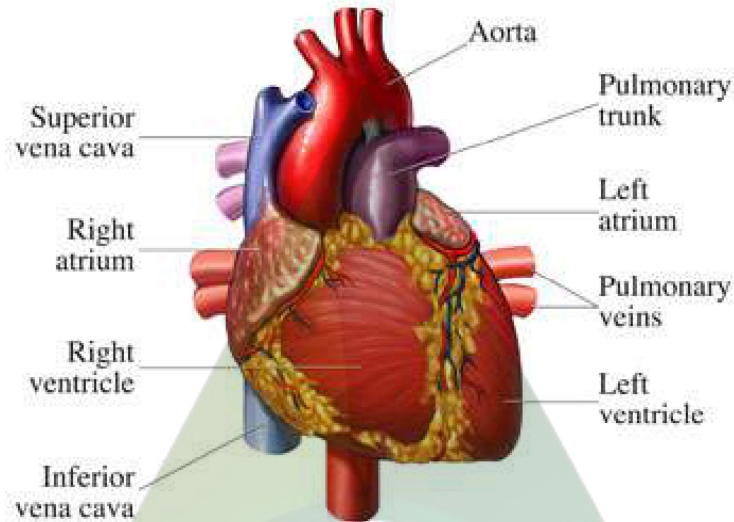
Circulatory system circulates blood throughout the body. It takes oxygen and food to every body cells and sweeps out carbon dioxide and other waste materials. It also helps in fighting infection and keeps our body warm. The circulatory system consists of the heart, blood vessels and the blood. Our heart is a powerful pump made of muscle. It contracts and relaxes automatically about 72 times a minute to pump blood around the body. Our heart is placed in the middle of our chest, slightly to the left.



❖ Our heart

Our heart has two sides, the right and the left one. The right side pumps blood only to the lungs. The left side, which is the bigger of the two sides pumps blood throughout

the body. Blood vessels are thin tube through which blood travels throughout the body.



Our Heart

Questions

1. Which one of the following is a part of circulatory system?

- (a) Heart
- (b) Blood
- (c) Blood vessels
- (d) All of these
- (e) None of these

2. Which one of the following can be termed as "pumping machine?"

- (a) Lung
- (b) Nerves
- (c) Kidney

(d) Heart

(e) None of these

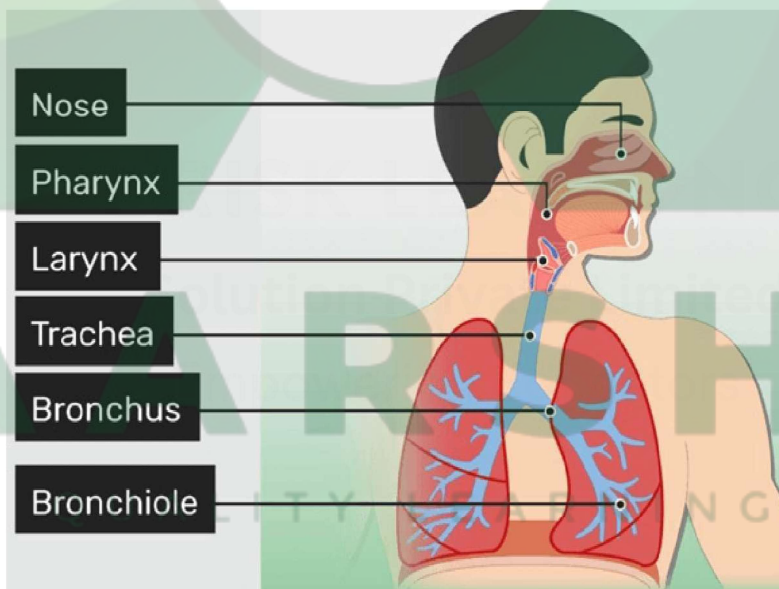
Answers:

1. Correct Option (d)

2. Correct Option (d)

➤ Respiration

Respiration is a process by which body burns organic matter (glucose) in the presence of oxygen to release energy. This energy is needed for work, growth, development and maintenance of the body. The human respiratory system consists of nose, windpipe and lungs. We breathe air through our nose. The air has oxygen in it. This air now moves down from windpipe to the lungs. The lungs are present inside our rib cage. We have a pair of them. It is a soft spongy bag like organ. Each of our lungs has millions of branching air sacs known as bronchioles.



(Respiratory system)

Respiration in Human At the end of each bronchioles there are bunches of air sacs known as alveoli. During the process of respiration, oxygen from the air seeps through the air

sacs into the blood and at the same time carbon dioxide seeps back into the air sac and is thrown out when we breathe out.

Questions

1. When a person runs or does some hard physical work, what happens to his breathing?

- (a) Breathes faster
- (b) Breathes slow
- (c) Breathes at the normal rate
- (d) None of these
- (e) All of these

2. Name the gas that all living things breathe in

- (a) Oxygen
- (b) Carbon dioxide
- (c) Hydrogen
- (d) Nitrogen
- (e) All of these

Answers:

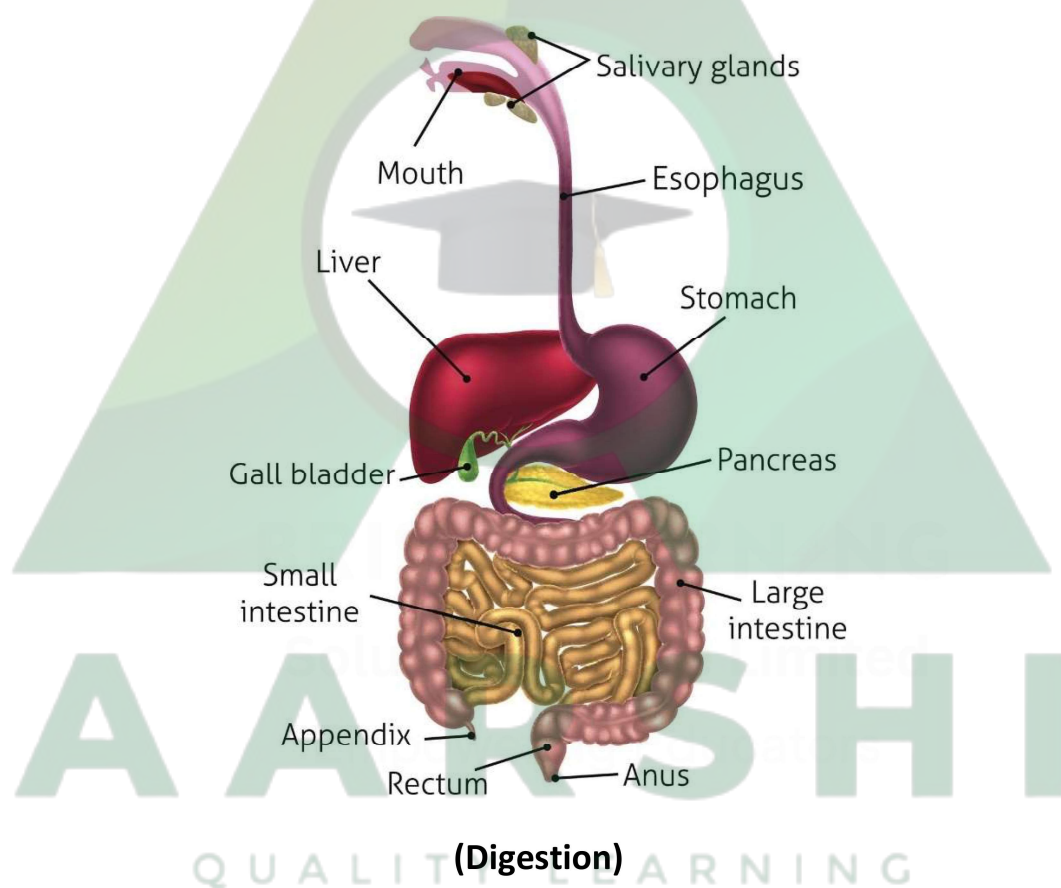
1. Correct Option (a)

2. Correct Option (a)

➤ DIGESTION

Digestion is the process of breaking down food into simple form so that it is easily absorbed by the body. Digestion of food takes place in a number of steps. There are several organs of our body, which are involved in this process. They all together make up

our digestive system. Digestion of food starts in the mouth. The food is broken down by chewing and grinding into a paste. The paste next moves to the stomach through the food pipe. Food is churned by the stomach muscles with more digestive juices. It is then broken down into simple soluble form. The simpler food now passes to the intestine. Here the food is mixed with more digestive juices and breaks down further. Some of these digestive juices come from the intestine, while other is made in other body organs such as liver and pancreas. These juices complete the digestion of food. The food is now in simple soluble form, which can easily be absorbed into the blood through the walls of the small intestine. The undigested food pass through the large intestine and thrown out of the body through the anus.



Questions

1. Where does the digestion of food start in our body?

(a) Stomach

- (b) Small intestine
- (c) Large intestine
- (d) Mouth
- (e) None of these

2. Which of the following is not a part of the digestive system?

- (a) Mouth
- (b) Food pipe
- (c) Windpipe
- (d) Stomach
- (e) Intestine

Answers:

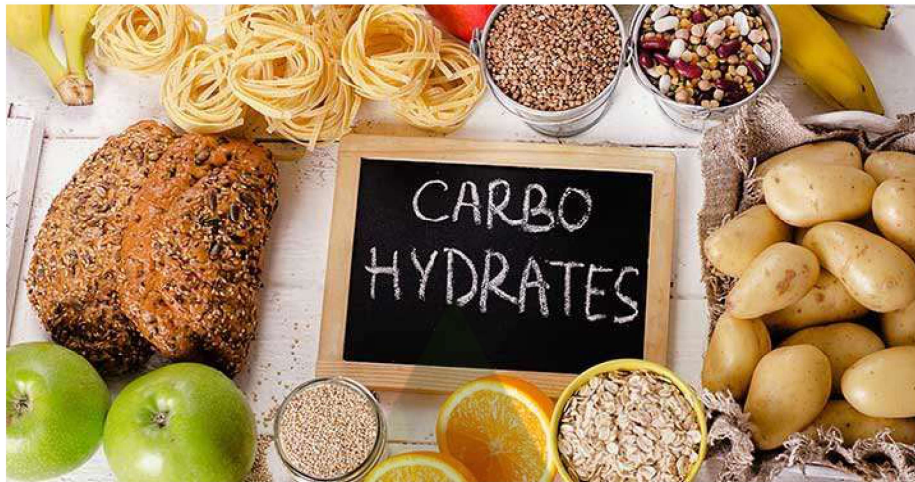
- 1. Correct Option (d)
- 2. Correct Option (c)

➤ NUTRIENTS

All living thing needs food for its growth, maintenance and development. Food has different components. These components are called nutrients. Each nutrient is required in specific amount and has a specific function. Food is divided into different groups according to the function they perform in the body.

❖ Carbohydrates

Carbohydrates provide energy to our body. We need energy to do any kind of work. Example bread, chocolates, sweet Potatoes and Banana.



(Carbohydrate Rich Food)

❖ Proteins

They are the body building nutrients. We need protein for our growth. They build muscles and repair the damaged parts of our body. Children need more protein than adult because their body parts need to grow and get bigger. Milk, egg, fish, meat, cheese curd, pulses and beans etc. are protein rich food.



(Protein Rich Food)

❖ Fat

Fat gives energy and warmth. They give us more energy and heat than carbohydrates. Fat are stored in the body for future use. This stored energy is used when the body does not get enough food to eat. Example: Cheese, butter, oil, nuts are all rich in fat.



(Fat Rich Food)

❖ Vitamins and minerals

Vitamins and minerals are the protective nutrients. These food nutrients protect us from diseases and keep us healthy and fit. These are needed in very small amounts. Example fresh fruits, vegetables, eggs, milk are rich source of vitamins and minerals.



(Food items rich in vitamins and Minerals)

❖ Roughage and Water

Apart from nutrients, our body also needs dietary fibers, which help us to keep our bowl clean by adding bulk to it. These dietary fibers also know as roughage. Roughage is mainly provided by plant products in our food. Fresh fruits and vegetables, whole grain pulses are main source of roughage. It does not provide any nutrient value to the body but still is very important. It help us to get rid of undigested food with ease. Water helps in absorption of nutrients from the food. It also plays a major role in throwing out wastes like sweat, urine from the body. Most of the water requirement is fulfilled by the liquids we drink. Fruits and vegetables also provide water.

Questions

1. Which one of the following food is a rich source of carbohydrates?

- (a) Bread
- (b) Egg
- (c) Milk
- (d) All of these

(e) None of these

2. Roughage has no food value yet it is an important part of a balanced diet. Why?

(a) Roughage has water holding capacity

(b) Roughage adds bulk to the food

(c) Roughage makes the food tasty

(d) Both a and b

(e) All of the above

Answers:

1. Correct Option (a)

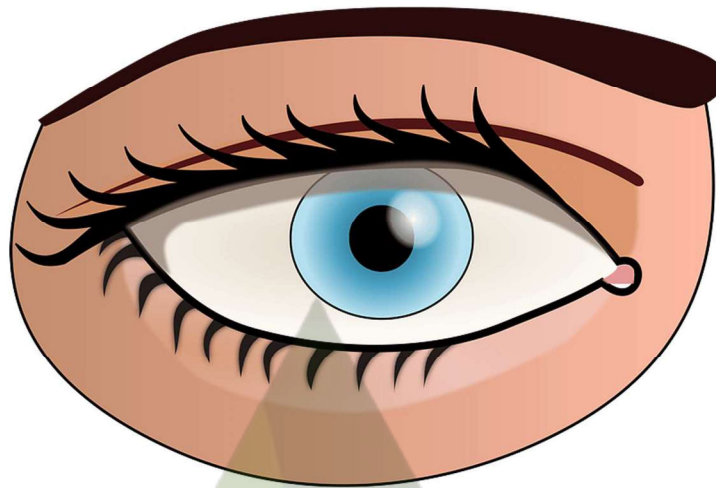
2. Correct Option (d)

➤ SENSE ORGANS

Sense organs are the organs, which help us to sense the outside world. They are the external organs of our body. We have five sense organs.

❖ Eyes

Eyes are the organ, which help us to see the beautiful world around us. The eye is connected to the brain. The brain combines the input of both the eyes into a single image.



(Human Eye)

❖ Ear

Ear is the organ, which helps us to listen to all kinds of sound, whether it is music, chirping of birds, moving of waves or laughter of children. The ear is connected to the brain. The brain combines the input of both the ears and then determines the distance and the direction of sound.

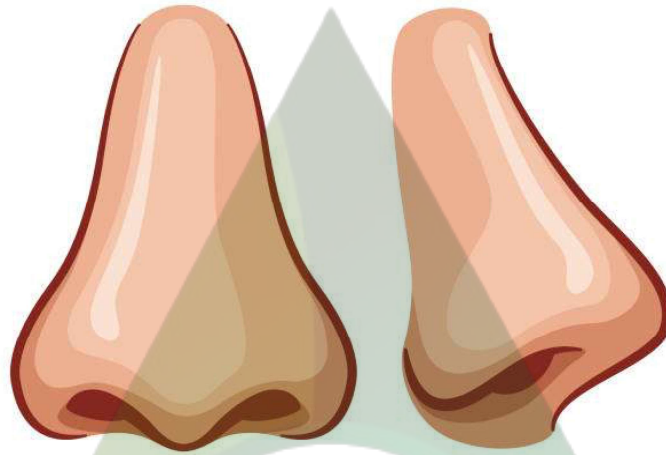


(Human Ear)

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QUALITY LEARNING

❖ Nose

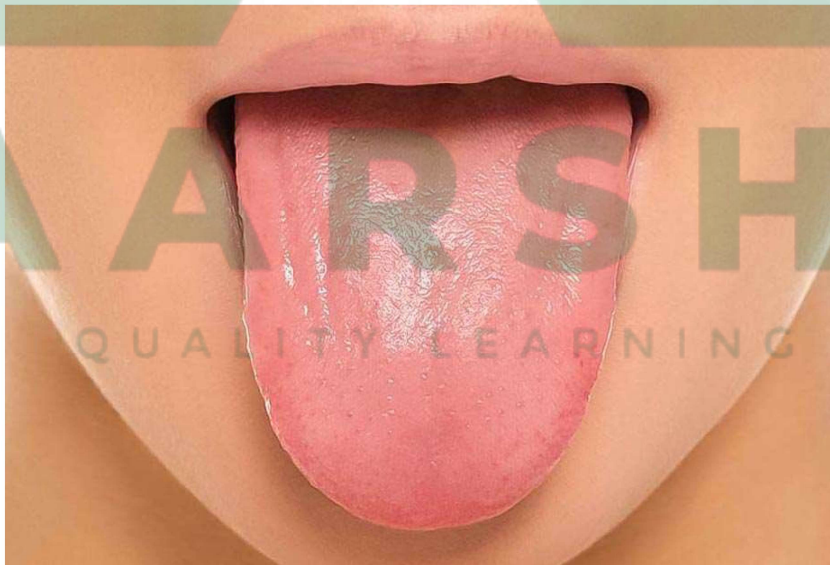
Nose apart from breathing helps us to smell things. It helps us to smell the fragrance of perfume and the smell of the rotten eggs, decay garbage.



(Human Nose)

❖ Tongue

Tongue is the organ of taste, it also helps us to talk. The taste of the things that we eat is due to tongue. Tongue is sensitive to different types of taste like salty, sour, bitter or sweets. The specific area of the tongue is specialized in a specific taste.



(Human Tongue)

❖ Skin

Skin help us to feel the things around us. When we touch something we get a lot of information, such as whether it is hard or soft, hot or cold, sharp or blunt rough or smooth etc. Skin covers us from head to the tip of the toe.



Human Skin

Questions

1. How many types of sense organ are present in our body?

- (a) Five
- (b) Two
- (c) Six
- (d) Ten
- (e) None of these

2. The biggest sense organ of our body is

- (a) Eye

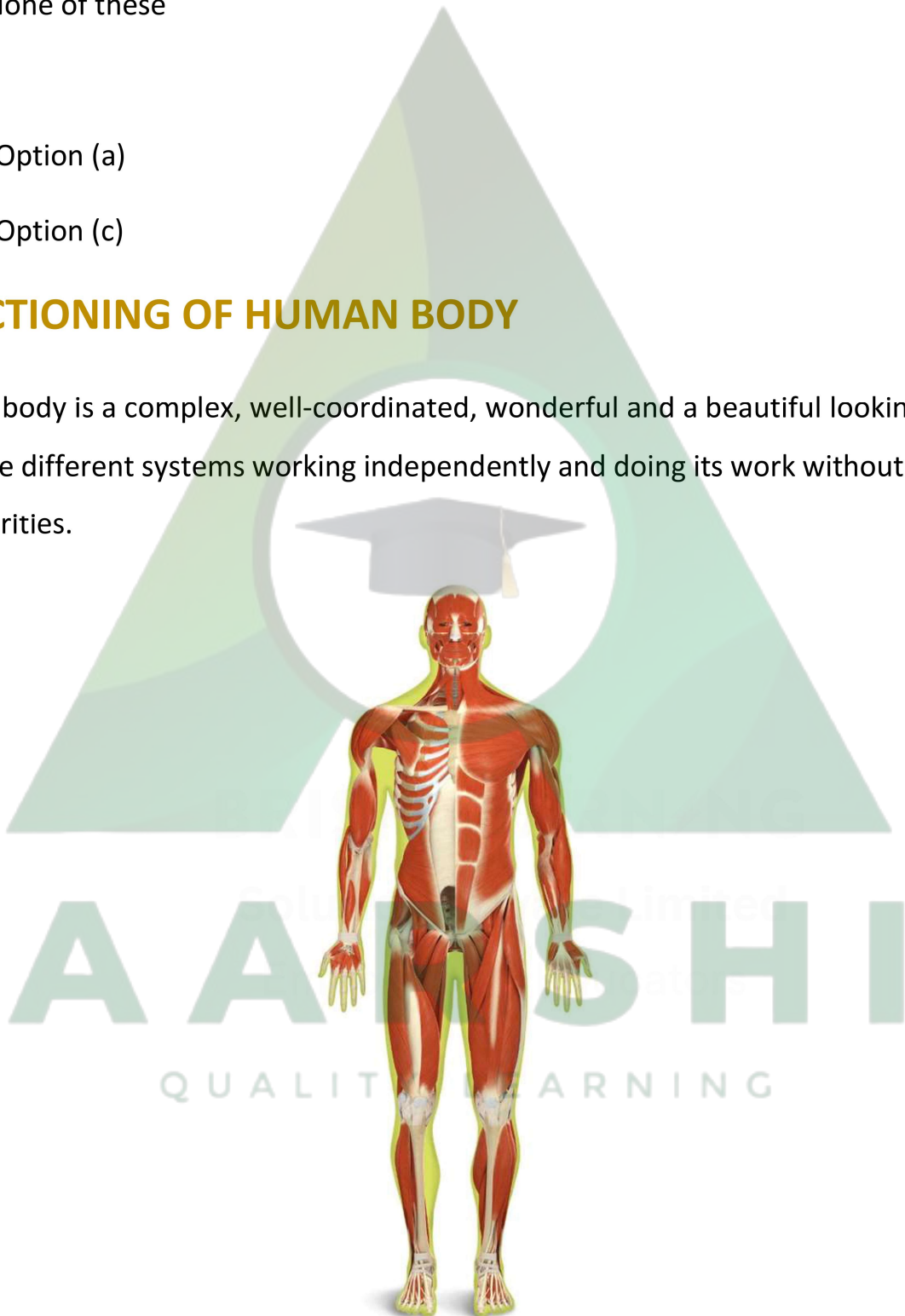
- (b) Nose
- (c) Skin
- (d) Ear
- (e) None of these

Answers:

1. Correct Option (a)
2. Correct Option (c)

➤ FUNCTIONING OF HUMAN BODY

Human body is a complex, well-coordinated, wonderful and a beautiful looking machine. We have different systems working independently and doing its work without any fuss or irregularities.



1 OUR BODY

We can say that our body follows the rule of division of labour. We have different systems like the digestive system whose function is digesting of food, circulatory system which supplies food and oxygen to the required cells and collects waste from all body parts. Nervous systems which coordinates all our body function. Respiratory system is concerned with the release of energy from the food. Excretory systems excrete the waste material from our body. Reproductive system is involved in reproduction, i.e., producing young ones. The functions of these systems are monitored by the brain. These systems are made up of many organs working together for a common function. For example, digestive system consists of mouth salivary glands, oesophagus, stomach, liver, gall bladder, pancreas, small intestine large intestine, rectum and anus. Other than organs of the systems we have the sense organs which help us to see, feel, hear, smell and taste. The human body is also wonderfully packed with each organ placed at proper point with all care and protection. The soft organs of the body are protected by the hard outer covering of the rib cage and the bones. The organs of our body function all the time.