

P. 101 Oral Questions

1. Protects the organs in the upper part of the body such as heart and lungs. It also gives a skeletal structure for the human physique.
2. bone marrow inside the bones
3. skull
4. The backbone has 33 small bones called vertebrae joined together. The joints allow the movement of the backbone.
5. Ball and socket joint. Hinge joint allows movement in one direction only while ball and socket joint allows movement in all directions.
6. No, muscles make the bones move only by pulling.

P. 102 Oral Questions

1. No, examples are earthworm, snail, cockroach
2. human, fish: endoskeleton; crab, cockroach, snail: exoskeleton
3. No. A fish uses its tail fin to push the water and move forward. The side fins are used for balance and for turning.
4. Snake has a very flexible backbone. It can curve its body into many loops and each loop pushes against the ground to give the body a forward push. In humans, the backbone is not that flexible.

P. 103 Exercises

- A. 1. d 2. a 3. b 4. a
5. a 6. a 7. d 8. a
9. a 10. b
- B. 1. false 2. circulatory
3. digestive 4. true
5. skull 6. one
7. heart, lungs 8. Femur
9. true 10. triceps
11. false 12. true
13. exoskeleton 14. tail fin
15. streamlined shape 16. vertebrates
- C. 1. A group of cells that performs a special job together is known as a tissue. For example, blood, skin.
2. The main organs in the digestive system are teeth, food pipe, stomach, small and large intestine. The main function of this system is to digest and absorb nutrients necessary for growth and maintenance of the body.
3. The soft, inside portion of a bone is known as bone marrow. The main function of bone marrow is to produce blood cells.
4. The spine allow us to bend or twist our back. It forms the central support for the skeleton and also protects the spinal cord.
5. The muscles move the bones by their pull. Muscles cannot push. Therefore to move the bone in one direction at least two sets of muscles are required.

6. The three types of skeletons are:

- (i) Exoskeleton: It is a skeleton which is outside the body but is not made up of bones. For example, crabs and snails.
- (ii) Endoskeleton: It is a skeleton which is inside the body and made up of bones. For example, humans and fish.
- (iii) Liquid skeleton: A liquid skeleton performs the same function as a bony skeleton. For example, earthworms have liquid skeletons. They have liquid trapped in spaces inside the body.

7. The forelimbs of birds are modified into wings. Their bones are hollow and very light.

- D. 1. Group of organs work together to carry out various life activities in our body. Such a group of organs is called an organ system, for example,
- (i) muscular system: movement of body parts
 - (ii) excretory system: removes waste from the body
 - (iii) reproductive system: produces offsprings
2. a. Earthworms: Muscles squeeze against the liquid trapped in spaces inside the body. The muscles can be squeezed differently to change the body shape. These changes in the shape help the earthworm to move along. To move the earthworm first extends the front part of its body, keeping the rear part fixed to the ground. Next, it fixes the front part and shortens it and pulling rear end forward.
- b. Snake: Snakes have a long and flexible backbone. They can curve their body into many loops. Each loop pushes against the ground to give a forward push to the body.
- c. Fish: Muscles enable the fish to move, contract on one side and expand on the other. The tail fin of the fish moves along with the body in a zig-zag pattern and thus pushes the water. This force moves its body forward. Again, fishes have a streamlined shape which helps in reducing water resistance.
3. In such joints, the end of one of the bones is round like a ball. It fits into a hollow part (or socket) in the other bone. The bone that ends in a ball can move in any direction. Shoulder joint and hip joint are examples of ball and socket joint. This joint allows movement in all directions.
4. The main functions of the human skeleton are
- (i) Support: The skeleton provides the framework which supports the body and maintains its shape.
 - (ii) Protection: The skeleton protects many vital

organs like brain, heart, etc.

(iii) Movement: The joints between bones permit movements.

(iv) Blood cells production: Blood cells are made in the bone marrow inside the larger bones of the body.

5. The joints in the body are the places where two bones are joined together. The joints are of three types, depending on the types of movement they allow – immovable, slightly movable and freely movable.
6. Endoskeleton: It is the skeletal system which is present inside the body. For example, humans, fish, birds and so on.

Exoskeleton: It is a skeletal system which is present outside the body. It is not made up of bones. For example, crabs, cockroaches, snails and so on.

HOTS Questions

1. The vertebrae provides flexibility as it allows our back to bend, twist and turn at each joint. Freedom of movement and flexibility of body would have been restricted if the backbone had only one long bone.
2. No. A fish moves forward by the zig-zag movement of its body and tail fin. The side fins are used for balance, not for moving forward.
3. Beating of the heart; movement of stomach muscles for churning the food during digestion.

HALF-YEARLY TEST PAPER for Chapters 1–9

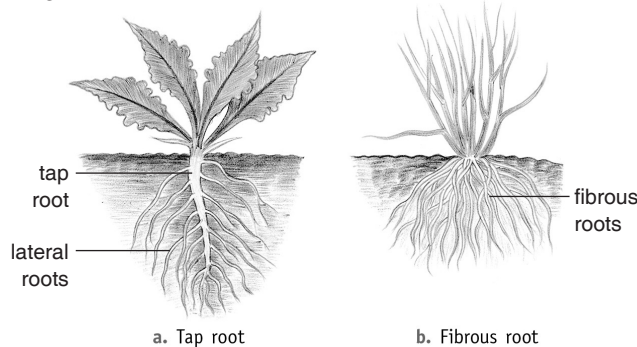
- A. 1. Parasites 2. Cabbage 3. Proteins
4. Iron 5. Synthetic 6. Wool
7. Yes 8. Gas 9. Evaporation
10. Loading 11. Physical change
12. False 13. False 14. Phototropism
15. Fruit

- B. 1. Rusting is a chemical change because the rust formed has very different properties from those of iron.
2. Leaves of *Mimosa* plant droop when something touches it.
3. Plants growing in hot deserts have small leaves to prevent the loss of water from the surface of the leaves.
4. Muscles make bones move at the joints.
5. Snakes have small teeth, which help them to swallow the prey as a whole.
6. Carbohydrates are the nutrients in the food which give us quick energy.
7. The rearing of the silkworm for the production of silk is known as sericulture.
8. Molecules in a solid can only vibrate about their fixed positions.

9. Distillation involves evaporating a liquid to its vapours and cooling the same so that they condense to give the pure liquid.

10. The structural units of non-living things are molecules but the structural units of living things are the cells.

- C. 1. In case of physical changes, the molecules of the substance remain exactly the same before and after the change. Whereas in chemical changes, the molecules of the original substances undergo changes to form molecules of new substances.
2. Cotton cloth is soft and lets air in. It also absorbs sweat. The sweat it absorbs evaporates because of the air it lets in. This results in the cooling down of the body. Synthetic fibres on the other hand do not breathe so well. They also cannot absorb sweat. So cotton clothes are more comfortable to wear in summer.
3. Two ways in which living and non-living things are similar are:
(i) Both living and non-living things are made up of matter.
(ii) Both living and non-living things are made up of structural units.
4. The two main functions of roots are:
(i) They anchor the plant to the soil. Roots also bind soil particles together and prevent soil erosion.
(ii) They absorb water, minerals and salts from the soil.
5. The backbone consists of 33 small bones called vertebrae. The vertebrae are joined to each other. These joints allow slight movement of the vertebrae. The backbone is attached to the base of the skull and forms the central supporting rod for the skeleton. The backbone is also called the spine or the vertebral column.
- 6.



- D. 1. a 2. a 3. d 4. c
5. d 6. a 7. c 8. b
9. a 10. d 11. a 12. c
13. c 14. c 15. b