EXERCISE – 01

Multiple Choice Questions

1. Which one of the following helps a fish to swim in water?
(1) Hands (2) Legs
(3) Fins (4) Gills

2. Which one of the following has light and hollow bones?
(1) Man (2) Dogs
(3) Horses (4) Birds

3. Which part of our body can we bend?
(1) Knee (2) Elbow
(3) Neck (4) All of these

4. Which part of our body contain joints that allow movement in any direction?
(1) Neck (2) Elbow
(3) Shoulder (4) Backbone

5. Which part of our body has a pivot joint?
(1) Shoulder (2) Knee
(3) Ribs (4) Neck

6. The joint which help in movement in all directions is –
(1) pivot joint
(2) ball and socket joint
(3) hinge joint
(4) fixed joint

7. _____ gives a shape and structure to our body.
(1) Bones (2) Skin
(3) Colour (4) Skeleton

8. _____ gives a better image of the human skeleton.
(1) Camera (2) X–ray
(3) Infrared rays (4) None of these

9. The hip region consists of –
(1) shoulder bones (2) pivot joint
(3) rib cage (4) pelvic bones

10. "Gait" means –
(1) manner of nutrition in animals
(2) manner of movement
(3) manner of reproduction
(4) the habitat of animals

11. A cockroach has _____ pairs of legs.
(1) 2 (2) 3 (3) 4 (4) 6

12. A snail moves with the help of its –
(1) shell (2) wings
(3) bristles (4) foot

13. Birds can fly because of its –
(1) feathers (2) wings
(3) hollow bones (4) all of these

14. A fish swims in water with the help of its –
(1) scales
(2) streamlined body
(3) fins
(4) both (2) and (3)

15. A snake moves –
(1) in a straight line
(2) by making loops
(3) by its scales
(4) by its hollow bones

True/False

1. The bones are soft while cartilages are hard.

2. Skeletal system gives the body support and protects inner organs.

3. Doctors use X–ray films to examine the injuries of bones.

4. The bones are moved by simultaneous contraction and relaxation of two sets of muscles.

5. All the joints in our body are similar.

Fill in the blanks

1. Our skeleton is made up of many pieces of _____and_____.

2. The place where two or more bones meet is called a_____.

3. Bodies of fishes are usually spindle shaped and _____.

4. Movement from one place to another place movement of animals is called _____.

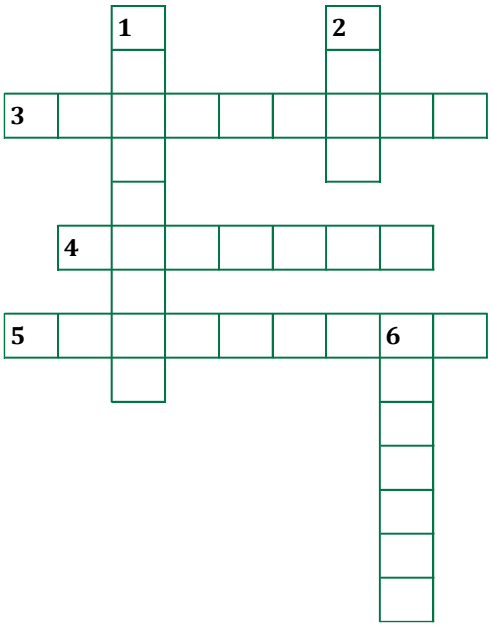
5. _____and swans also swim in water.

Match the column

1.

	Column – I		Column – II
(1)	Snails	(a)	Breast is connected with 3 pairs of legs and 2 pairs of wings
(2)	Earthworm	(b)	Crawl on the ground by alternately looping sideways
(3)	Cockroach	(c)	Swim by forming loops alternately
(4)	Joint	(d)	A place where two bones meet together
(5)	Snakes	(e)	Move by the muscular foot
(6)	Birds	(f)	Fly by flapping its wings
		(g)	Move by alternate extension and contraction of the body

Solve the following crossword puzzle with the clues given:



Across

3. Most abundant mineral in muscles.

4. Wave like motion of a snake.

5. It attaches bone to bone.

Down

1. Study of bones.

2. Manner of movement.

6. It attaches muscles to the bones.

ANSWER KEY

Multiple Choice Questions

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	3	4	4	3	4	2	4	2	4	2	2	4	4	4	2

True/False

1. False **2.** True **3.** True **4.** True

5. False

Fill in the blanks

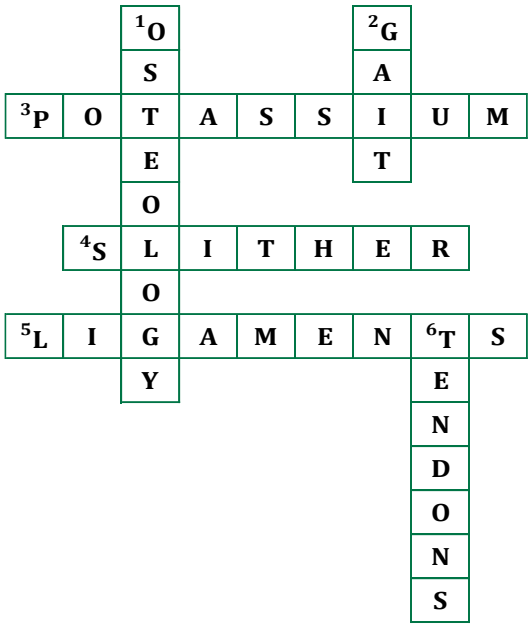
1. bones, cartilage **2.** joint **3.** Streamlined **4.** Locomotion

5. Ducks

Match the column:

1. (1) → e; (2) → g; (3) → a; (4) → d; (5) → b; (6) → f

Crossword Puzzle Answer



EXERCISE – 02

Very Short Answer Type Questions

1. What is a skeleton?
2. What is a rib cage?
3. What is a joint?
4. Name an animal which moves by using its large, disc–type foot.
5. Name an animal which swims in water by moving its tail from side to side.

Short Answer Type Questions

1. How does an earthworm move?
2. How does a snail move?
3. How does a fish swim in water?
4. How does a snake move?
5. What are the adaptations which make the fish move in water?

Long Answer Type Questions

1. What is the role of skeletal system?
2. What is a joint? Describe various kinds of joints found in our body.
3. Write an activity to explain the action of muscles.
4. Write short notes on the following –
   (a) Skull
   (b) Rib cage
   (c) Backbone
   (d) Hip bone
   (e) Shoulder bones
5. What is locomotion? How does it help the animals?

EXERCISE SOLUTION – 01

Multiple Choice Questions

1. Option (3)

A fish is an aquatic animal. They do not have hands and legs. They have fins to swim in water.

2. Option (4)

Birds are aerial animals and they fly in the sky for long duration. That's why light and hollow bones help them to fly easily.

3. Option (4)

Knee, elbow and neck in our body, we can bend.

4. Option (3)

Ball and socket joint present in our shoulder joint helps to move our hand in all directions. The rest of all not able to move in all directions.

5. Option (4)

Ball and socket joint is present in shoulder. A hinge joint is present in the knee. Our neck has pivot joint.

6. Option (2)

The joint which allows movement in all direction is known as ball and socket joint.

7. Option (4)

Skeleton gives a shape and structure to our body.

8. Option (2)

The X-Ray gives a better image of the human skeleton.

9. Option (4)

The hip region of our body is known as the pelvic region and the bone present in this region is called pelvic bone. Pelvic (hip) bones form the link between the upper part of our body and the legs.

10. Option (2)

Gait is a manner of movement found in organisms.

11. Option (2)

Cockroaches have three pairs of legs and two pairs of wings.

12. Option (4)

A snail moves with the help of its muscular foot.

13. Option (4)

Birds are aerial animals, so they have some adaptations to flying in the sky. They have feathers and wings that help in flying and hollow bones which make its body lighter to fly.

14. Option (4)

A fish has scales, fins and a streamlined body. Fins and streamlined body help them to swim in water.

15. Option (2)

A snake contracts and relaxes the muscles on the two sides of its body alternately to form many loops in which different parts of the snake's body are moving to the left side and right side at the same time.

True/False

1. **False**

The bones are hard while cartilage is soft.

2. **True**

3. **True**

4. **True**

5. **False**

All the joints in our body are different and all the joints move in different directions.

Fill in the blanks

1. bones, cartilages

2. Joint

3. Streamlined

4. Locomotion

5. Ducks

Match the column

1. (1) → (e), (2) → (g), (3) → (a), (4) → (d), (5) → (b), (6) → (f)

Crossword Puzzle Answer

		^{1}O				^{2}G		
		S				A		
^{3}P	O	T	A	S	S	I	U	M
		E				T		
		O						
	^{4}S	L	I	T	H	E	R	
		O						
^{5}L	I	G	A	M	E	N	^{6}T	S
		Y					E	
							N	
							D	
							O	
							N	
							S	

EXERCISE SOLUTION – 02

Very Short Answer Type Questions

1. Skeleton is the framework of the body formed by the bones and cartilage.

2. The hollow, bony structure formed by the ribs is called a rib cage.

3. The structural arrangement of tissue by which bones are joined together is called a joint.

4. Snail

5. Fish

Short Answer Type Questions

1. The body of an earthworm is made up of many rings joined end to end. An earthworm does not have bones. It has muscles which help to extend and shorten the body. During movement, the earthworm first extends the front part of the body, keeping the rear portion fixed to the ground. Then it fixes the front end and releases the rear end. It then shortens the body and pulls the rear end forward. This makes it move forward by a small distance. Its body secretes a slimy substance to help it in the movement. Under its body, it has a large number of tiny bristles (hair like structures) projecting out which are connected with muscles and help to get a good grip on the ground.

2. The snail moves with the help of a large, disc-shaped muscular foot. It deposits a little fluid at its front end and walks smoothly over this fluid. The shell is dragged along with the foot, as the shell cannot move by itself.

There are two sets of muscles in the foot of snail which contract and expand alternately. producing a kind of wave effect. A series of waves in the muscles of the foot makes the snail move forward.

3. During swimming, muscles make the front part of the body curve to one side and the tail part swings towards the opposite side. The fish forms a curve. Then, quickly, the body and tail curve to the other side. This makes a jerk and pushes the body forward. A series of such jerks make the fish swim ahead. This is helped by the fins of the tail.

Fish also have other fins on their body which mainly help to keep the balance of the body and to keep direction, while swimming.

4. Snakes have a long backbone and a large number of thin muscles. The muscles are connected to each other. Backbone, ribs and skin are also connected to the muscles. Movement takes place by crawling. A snake contracts and relaxes the muscles on the two sides of its body alternately to form many loops in which different parts of the snake's body are moving to the left side and right side at the same time. Each sideways moving loop of snake pushes back against the ground and gives the snake a forward push. The resultant push of all the loops of snake's body makes it move forward very fast.

5. Various adaptations are found in fish which help in movement.

(i) The fish has flexible backbone. Due to flexible backbone, the fish can bend its body easily from side to side to move through water.

(ii) The fish has fins. The thin and flat projections on the body of fish are called fins that help in steering, balancing and stopping in water. The tail fin also helps in moving the fish forward in water.

(iii) The fish has powerful body muscles. The powerful body muscles of fish on both sides help in moving its tail on both sides.

Long Answer Type Questions

1. Skeletal system plays an important role in human body.

(1) Protection and support: A skeleton protects the delicate body parts e.g. brain, heart, lungs, liver, spinal cord etc. and supports the body.

(2) Attachment: It provides surface for the attachment of muscles.

(3) Movement and Locomotion: The skeletal system helps in movement and locomotion with the help of muscle.

(4) Body form: Locomotion and relaxation move bone which involves the movement of the whole body like walking, running and swimming.

It gives shape and structure to the body.

2. The structural arrangements of tissues by which bones are joined together are called joints.

According to the mobility, joints are classified as –

(i) Immovable joints/fixed joints: In some joints, the bones are held so tightly together that they cannot move at all. Such joints are called fixed joints. These joints allow no movement. For example, the bones of skull are interlocked with each other by their serrated margins called sutures, joints in tooth sockets, upper jaw.

(ii) Slightly movable/cartilagenous: In these joints, a pad of flexible cartilage is present between the bones which makes slight movement possible. Such joints are present between adjacent vertebrae in the backbone.

(iii) Freely movable joints: These joints allow free movement of bones in various directions. These are also known as synovial joints.

(a) Ball and socket joint: In this joint, the rounded head (like a ball) of one bone fits into a cup-shaped cavity formed by the other bone. This allows movement in all directions. For example, you can move your shoulder and hip in all directions.

(b) Hinge joint: The hinge joints allow the movement only in one direction (back and forth movement) like those of a door or the lid of a box. Elbow joint (joints between the upper and the lower arm), knee-joint (between thigh and lower leg) are examples of this type of joint.

(c) Pivot joint: Such joints allow rotation only. Pivot joint occurs where our neck joins the head. It allows the head to move backward and forward and turn the head to our right or left. The head rotates over a cylindrical bone of the neck.

(d) Gliding joint: Also known as plane joint. It allows the bones to glide past one another providing little movement. e.g. at ankle and carpals in wrist.

3. Aim

To understand the action of muscles.

Experiment

Make a fist with one hand. Bend your arm at the elbow and touch your shoulder with your thumb.

With your other hand, see if there is any change in your upper arm.

Observation & conclusions

You will feel a swollen region inside your upper arm. This swollen region is due to a swollen muscle. This is due to contraction of the muscle.

Now bring your arm back to its normal position and note what happens. You will feel that the swollen muscle is no longer present. It has returned to its earlier normal position. This is due to relaxation of muscles.

4. (a) Skull: The bones of skull form a strong case around the brain. In this way, the skull protects the brain. The skull also protects the main sense organs like eyes, ears and nose. The eyes are contained in two large cavities called 'eye sockets' in front of the skull.

(b) Rib cage: If we take a deep breath, hold it for a while and move our hand on the chest, we will find a number of bones in the chest region. These chest bones are called ribs. Ribs are the curved bones in our chest. Ribs exist in pairs. There are 12 pairs of ribs in the chest of our body. The hollow, bony structure formed by the ribs is called 'rib cage'. Ribs are attached in front to breast bone or sternum and at the back they are attached to backbone.

(c) Backbone: The backbone is a long, hollow, rod-like structure running from the neck to the hips, inside our body. The scientific name of backbone is vertebral column. The backbone forms the main supporting structure of the body.

(d) Hip bone: The thigh bones of our legs are joined to the hip bone by the ball and socket joints. Actually, hip bone forms the link between upper part of our body (called trunk) and the legs.

(e) Shoulder bones: Shoulders are that part of the body (or skeleton) to which our arms are attached. The human body has two shoulders, one on each side of the neck.

There are two shoulder bones, collar bone and shoulder blade.

5. The act of moving from place to place is called locomotion. Locomotion helps the animals in many ways.

(1) Locomotion helps the animals to move in search of food.

(2) Locomotion enables animals to move from an unfavourable place or environment to a favourable place or environment.

(3) It helps them to escape from their enemies and predators.

(4) It helps animals to find their partners for reproduction and to move to favourable areas for egg laying or rearing of the young ones.