



## BIOLOGY

### BOOKS - MTG IIT JEE FOUNDATION

#### BODY MOVEMENTS

##### Illustrations

1. Bones of which part of the skull are movable?



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2. Mention any two functions of ribs.



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**3. Differentiate between Exoskeleton and endoskeleton**



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**4. Name the following:**

Part of the skeleton with almost all immovable joints.



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**5. Name the following:**

Tissue present in upper part of the ear.



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**6. Name the following:**

Type of joint that offers maximum movement.



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7. Name the following:

Tissue that joins two bones.



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8. Bones are hard structures that cannot be bent. How are we then able to bend our back so much to touch our toes?



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9. Where is pivot joint present in our body?



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10. How is the exoskeleton of cockroach useful to it?



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11. Differentiate between ligaments and tendons.



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12. What happens to the bicep and tricep muscles when we bend our arm?



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13. How does the endoskeleton of birds help them to fly?



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14. What role do the tail fin and other fins play in the movement of a fish?

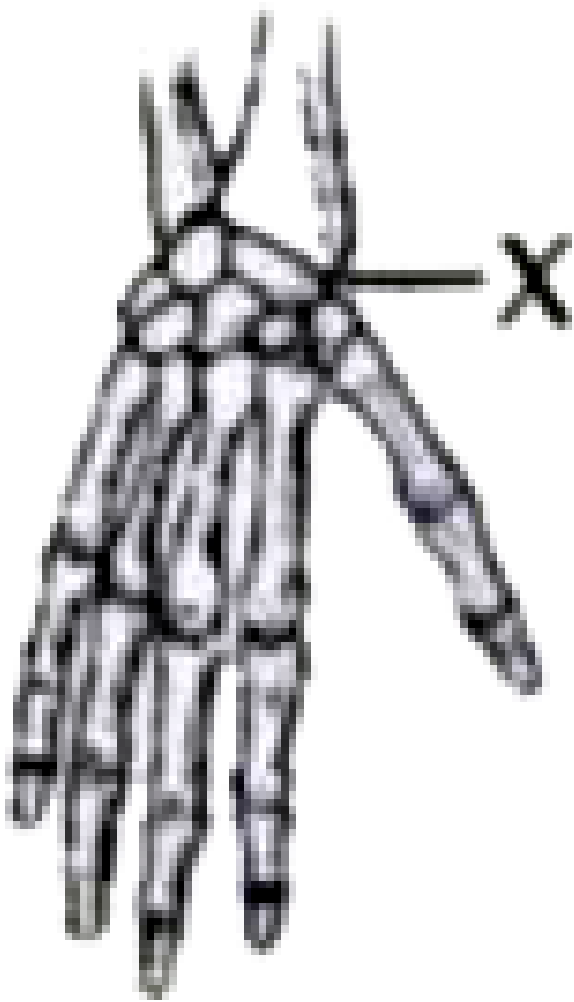




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## Solved Examples

1. Briefly explain the type of joint present in the region X shown in the given figure.



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2. How do muscles work in pairs to move a bone? Explain with the help of an example.



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3. Give reasons for the following statements.

The upper part of our ear is harder as compared to the ear lobe.



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4. Give reasons for the following statements.

Birds have streamlined bodies.



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5. Identify the type of joint/s that is/are being used in the action for carrying out the following activities.

Kicking a football



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6. Identify the type of joint/s that is/are being used in the action for carrying out the following activities.

Nodding to say yes



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7. Identify the type of joint/s that is/are being used in the action for carrying out the following activities.

Grasping a tennis racquet



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8. Identify the type of joint/s that is/are being used in the action for carrying out the following activities.



Lifting a bucket

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9. 0.02 mole of  $[Co(NH_3)_5Br]Cl_2$  and 0.02 mole of  $[Co(NH_3)_5Cl]SO_4$  are present in 200 cc of a solution X. The number of moles of the precipitates Y and Z that are formed when the solution X is treated with excess silver nitrate and excess barium chloride are respectively

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10. Define (a) skeleton (b) joint.

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11. Why do doctors sometimes recommend X-ray in case the bones get injured?



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**12.** What is the difference between bone and cartilage?



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**13.** How does a fish move in water?



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**14.** What is a skull? State its function.



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**15.** Do muscles both push and pull the bone?



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**1. Fill in the blank**

Joints of the bones help in the \_\_\_\_\_ of the body.



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**2. Fill in the blank**

A combination of bones and cartilages forms the \_\_\_\_\_ of the body



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**3. Bones at the elbow are joined by a \_\_\_\_\_ joint.**



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**4. Fill in the blank**

The contraction of the \_\_\_\_\_ pulls the bones during movement.



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**5. Indicate true (T) and false (F) among the following sentence**

The movement and locomotion of all animals is exactly the same.



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**6. Indicate true (T) and false (F) among the following sentence**

The cartilages are harder than bones.()



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**7. Indicate true (T) and false (F) among the following sentence**

The finger bones do not have joints()



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**8.** Indicate true (T) and false (F) among the following sentence

The fore arm has two bones.()



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**9.** Indicate true (T) and false (F) among the following sentence

Cockroaches have an outer skeleton()



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10. Match the items in Column I with one or more items of Column II.

Column I	Column II
Upper jaw	have fins on the body.
Fish	has an outer skeleton.
Ribs	can fly in the air.
Snail	is an immovable joint.
Cockroach	protect the heart.
-	shows very slow movement.
-	have a streamlined body.



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11. Answer the

What is a ball and socket joint?



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12. Skull bones are



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13. Answer the

Why can our elbow not move backwards?



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## Exercise Multiple Choice Questions

1. Which of the following statements is incorrect regarding human skeleton?

- A. It consists of skull, backbone, ribcage and bones of limbs.
- B. It consists of 206 bones in an adult woman.
- C. All the bones present in it are of same size and shape.

D. It provides shape and support to our body.

**Answer: C**



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2. Which of the following is not a function of human skeleton?

A. Movement

B. Protection of internal organs

C. Formation of blood cells

D. Reproduction

**Answer: D**



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3. Exoskeleton is the skeleton which is present



A. outside the body of an organism

B. inside the body of an organism

C. only in insects

D. none of these.

**Answer: A**



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**4. Which of these has the least number of movable joints?**

A. Skull

B. Backbone

C. Arms and hands

D. Legs and feet

**Answer: A**



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5. The hinge joint allows movement in

- A. all directions
- B. one plane only
- C. two planes only
- D. depends on where the joint is located in the body.

**Answer: B**



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6. The bones at the joints are held together by

- A. ligaments
- B. tendons
- C. muscles

D. none of these.

**Answer: A**



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7. Which joints do we use while climbing the stairs?

A. Pivot, hinge

B. Fixed, ball and socket

C. Ball and socket, hinge

D. Pivot, ball and socket

**Answer: C**



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8. Which of the following joints allow movement in all directions?

A. Hinge joint

B. Ball and socket joint

C. Pivot joint

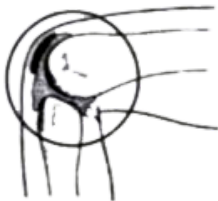
D. Gliding joint

**Answer: B**

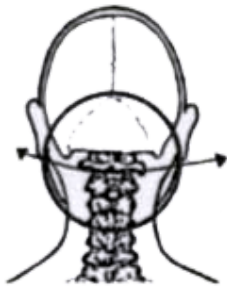


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9. Identify the part of the body where hinge joint is located in the body.



A.



B.



C.



D.

**Answer: A**



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**10.** Match the joints in column I with their examples in column II and select the correct option.

Column I

Column III

- |                          |       |          |
|--------------------------|-------|----------|
| A. Hinge joint           | (ii)  | Neck     |
| B. Gliding joint         | (ii)  | Ankle    |
| C. Pivot joint           | (iii) | Shoulder |
| D. Ball and socket joint | (iv)  | Elbow    |

A. A - (iv), (B) - (ii), C - (i), D - (iii)

B. A - (iii), B - (ii), C - (i), D - (iv)

C. A - (iv), B - (i), C - (ii), D - (iii)

D. A - (ii), B - (iii), C - (iv), D - (i)

**Answer: A**



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**11. Select the incorrect statement.**

- A. Femur is the thigh bone.
- B. Humerus is the bone present in lower arm.
- C. Cartilage is present in upper part of ear.

D. Vertebral column is formed by 33 serially arranged vertebrae.

**Answer: B**



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12. Which of the following animals does not have muscles for movement?

A. Earthworm

B. Snail

C. Bird

D. none of these

**Answer: D**



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13. A band of dense tissue that connects a muscle to the bone is

A. cartilage

B. tendon

C. ligament

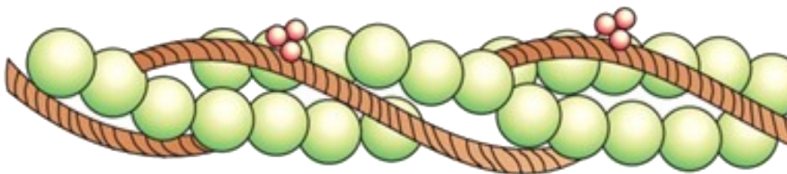
D. scale.

Answer: B



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14. Identify I,II and III and select the correct option



A. (i) Larger (ii) Steamlined



- B. (i) Larger (ii) Spindle-shaped
- C. (i) Smaller (ii) Streamlined
- D. (i) Smaller (ii) Circular

**Answer: C**



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15. Select the mismatched pair of the organism and its locomotory organ.

- A. Pigeon - Wings
- B. Snail - Bristles
- C. Cockroach - Legs
- D. Fish - Fins

**Answer: B**



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16. The joint which allows side to side as well as forward and backward movements is called

- A. hinge joint
- B. pivot joint
- C. ball and socket joint
- D. gliding joint.

**Answer: D**



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17. Which of the following organs are protected by rib cage?

- A. Brain
- B. Sense organs

C. Lungs

D. Intestine

**Answer: C**



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**18.** The movement of the lower jaw makes it possible for us to

A. talk

B. chew food

C. think

D. both (a) and (b).

**Answer: D**



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19. The animals which possess backbone are called P, e.g., Q and R. Here P, Q, and R are respectively

- A. vertebrates, birds, reptiles
- B. vertebrates, insects, snails
- C. invertebrates, snakes, birds
- D. invertebrates, humans, reptiles.

**Answer: A**



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20. The joint that allows only back and forth movement is present in

- A. ribs
- B. knees
- C. hips

D. wrist

**Answer: B**



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**21.** Which of the following features of birds help them to fly?

A. Streamlined body shape

B. Hollow bones

C. Strong breast muscles

D. All of these

**Answer: D**



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**22.** Which of the following help the fish to swim with ease in water?

A. Presence of strong muscles

B. Presence of scales

C. Presence of tail fin

D. All of these

**Answer: D**



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**23.** Select the correct statement

A. There are total 10 pairs of ribs in human body.

B. First seven pairs of ribs are called true ribs.

C. Ribs are attached to backbone in the front and to sternum at the back.

D. Ribs protect the brain and the heart.

**Answer: B**



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**24.** Which of the following organisms does not have an endoskeleton of bones?

- A. Frog and lizard
- B. Snail and cockroach
- C. Fish and snake
- D. All of these

**Answer: B**



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**25.** Which property of muscles is responsible for movement of bones?

- A. Pushing and pulling
- B. Hardness and rigidity
- C. Contraction and relaxation
- D. Contraction only

**Answer: C**



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**26.** The aquatic animal whose skeleton is made almost entirely of cartilage is

- A. dolphin
- B. shark
- C. whale
- D. penguin.

**Answer: B**





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27. The last two pairs of ribs are called (i) ribs because they are (ii) to the breastbone in the front.

Select the correct option for (i) and (ii).

- A. false, not attached
- B. floating, not attached
- C. floating, attached
- D. true, directly attached

**Answer: B**



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28. Select the incorrect statement regarding cartilage.

- A. It is a tissue present at the ends of bones.

B. It acts as a shock absorber between the two bones.

C. It is present at tip of the nose.

D. It makes up the entire skeleton in some animals, such as whale.

**Answer: D**



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**29. Pivot joint is present**

A. in neck region

B. between bones of ankle

C. between humerus and radius bones

D. between bones of fore arm and wrist.

**Answer: A**



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**30.** We are able to bend and twist our back because the vertebrae are joined together by

A. slightly movable joints

B. fixed joints

C. freely movable joints

D. none of these.

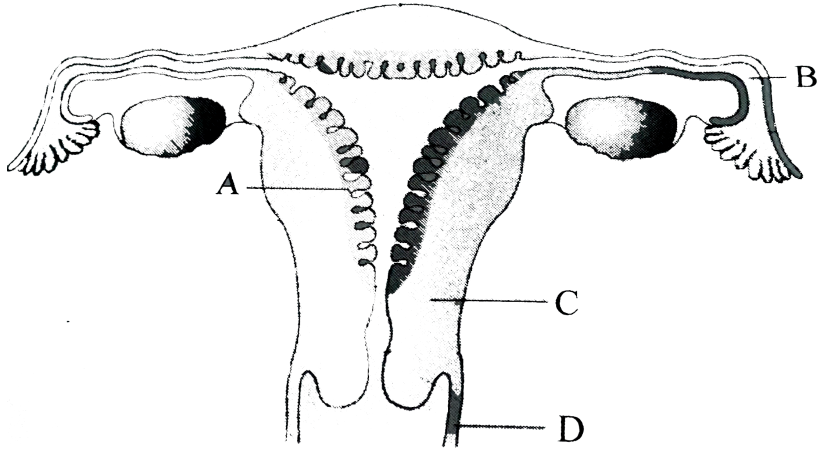
**Answer: A**



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**31.** The given diagram shows a human female 's reproductive system. Select the part (labelled as A, B, C & D) where semen is released into the

female by the penis during copulation



- A. Snake P
- B. Snake Q
- C. None of the two snakes
- D. Cannot be identified

**Answer: B**

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32. In which of the following actions, hinge joint is involved?

- A. Kicking a football
- B. Lifting weight
- C. Bowling the cricket ball
- D. All of these

**Answer: D**

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**33.** Select the option that correctly fills up the blanks in the given paragraphs. After one month of pregnancy the embryo's (i).\_\_\_\_ is formed. By the end of the (ii).\_\_\_\_ month of pregnancy the fetus develops limbs and digits. By the end of (iii).\_\_\_\_ most of the major organ systems are formed, for example, the limb and external genital organs are well-developed by the end of (iv).\_\_\_\_ the body is covered with fine hair, eye-lids separate, and eyelashes are formed.

- A. front, rear, near, front, rear

B. front, rear, front, rear, rear

C. rear, front, front, rear, front

D. rear, front, rear, front, front

**Answer: B**



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**34.** Match column I with column II and select the correct option.

Column I		Column II
A. Joint that offers maximum movement	(i)	Ball and socket joint
B. Tissues that join bones with muscles	(ii)	Hinge joint
C. Tissues that join the two bones	(iii)	Tendons
D. Joint present in fingers	(iv)	Ligaments

A. A - (i), B - (iii), C - (iv), D - (ii)

B. A - (ii), B - (iii), C - (iv), D - (i)

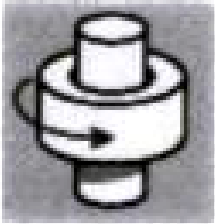
C. A - (i), B - (iv), C - (iii), D - (ii)

D. A - (ii), B - (iii), C - (i), D - (iv)

Answer: A

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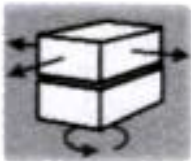
35. Which one is a ball and socket joint



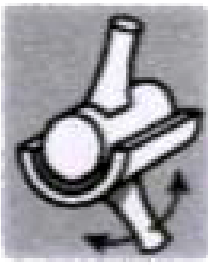
A.



B.



C.



D.

**Answer: B**



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**36.** Read the following statements (I to IV).

I. Snail moves with the help of its muscular foot.

II. Vertebral column of man has more number of vertebrae than that of woman.

III. At the time of birth, a human baby has more number of bones than an adult.

IV. Joint present in the upper jaw of the skull is freely movable.

Which of the above statements are incorrect?

A. I and II



B. I and III

C. II and III

D. II and IV

**Answer: D**



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**37. Select the correct match out of the following.**

A. Floating ribs - 11<sup>th</sup> and 12<sup>th</sup> pairs of ribs

B. Vertebrae of backbone - Joined by freely movable joints

C. Liquid endoskeleton - Snake

D. Fixed joint - Lower jaw of the skull

**Answer: A**



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**38.** We cannot bend our elbow backward like the way we can bend and move our shoulder. It is because the elbow joint is a

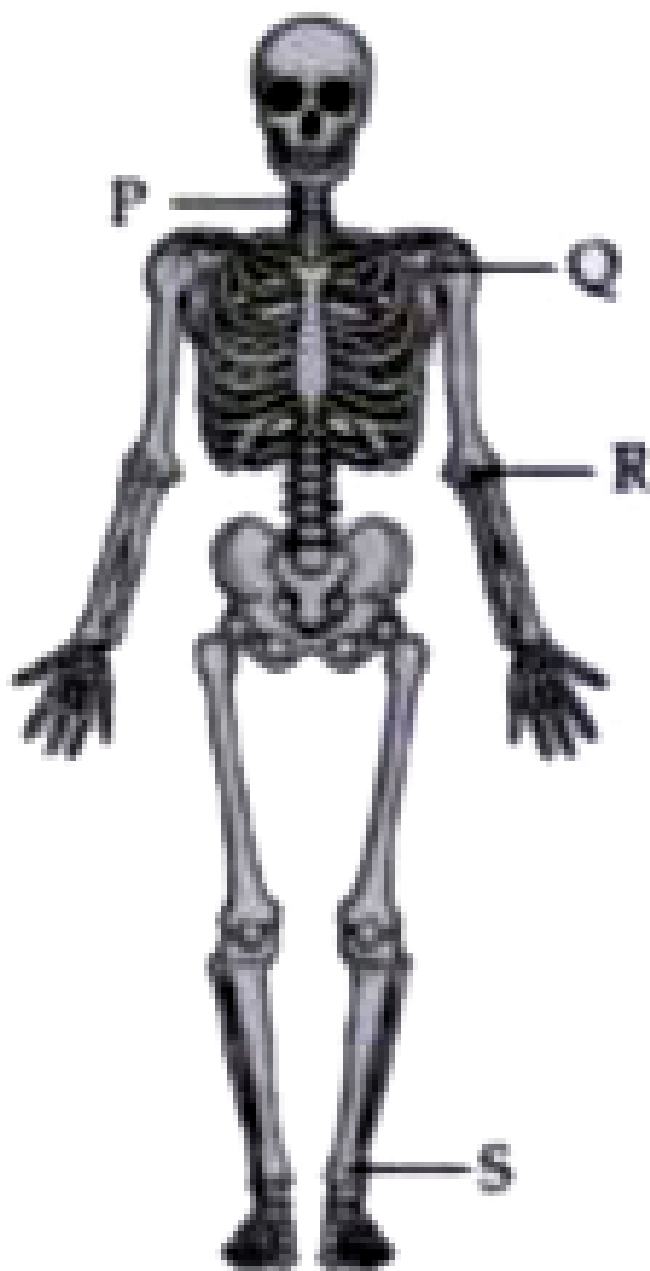
- A. gliding point
- B. pivot joint
- C. hinge joint
- D. ball and socket joint.

**Answer: C**



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**39.** Refer to the given diagram and select the correct option for the joints P, Q, R and S.



- A. Joint P allows movement in all directions.
- B. Joint Q is also present in ankle.
- C. Joint R is also present in knees.
- D. Joint S allows only left and right movement.

**Answer: C**



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**40.** Select the correct option regarding the type of joint, that joins our arm with the shoulder.

- A. The round end of one bone fits into the hollow part of another bone.
- B. The joint allows movement in one plane only.
- C. It is a slightly movable joint.
- D. It is also present in knees.

**Answer: A**



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**41.** Which out of the following options is not true regarding movement in a fish?

- A. Muscles that help the fish to move are present on either side of the backbone.
- B. The sweeping of the tail is due to the contraction and relaxation of muscles.
- C. The fins present on the sides of the body do not play any role in the movement.
- D. Streamlined body shape of fish helps its movement in water.

**Answer: C**



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42. Which of the following is a mismatched pair?

- A. Sternum — Breast bone
- B. Humerus — Bone in upper arm
- C. Pelvis — Strongest bone
- D. Pectoral girdle - Shoulder girdle

**Answer: C**



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43. In animal, 'X' the exoskeleton is made up of different units joined together that permits movement. Identify the animal 'X'.

- A. Snail
- B. Fish
- C. Snake

D. Cockroach.

**Answer: D**

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44. Which bones are represented by the given figure?



A. Pectoral bones

B. Pelvic bones

C. Tibia and fibula

## D. Radius and ulna

**Answer: B**



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**45.** Consider the following statements each with one or two blanks.

(i) Each pectoral girdle consists of a (A) and (B) .

(C) is a condition of rapid spasms (wild contractions) in muscle due to low  $Ca^{++}$  in body fluid.

Each organised skeletal muscle in our body is made of a number of (D) held together by a common collagenous connective tissue layer called (E) .

Which one of the following options correctly fills the blanks in any two the statements ?

A. (i) -long      (ii) -33

B. (iii) -Pelvic,      (iv) -Cockroach



C. ( i) -small, (iii) - Pectoral

D. (ii) -33, (iv) -Earthworm

**Answer: D**



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**46.** Select the incorrect option regarding snakes.

A. They have thin muscles that are connected to each other.

B. They are invertebrates.

C. During movement, the snake's body curves into many loops.

D. Backbone and ribs of snakes help them to move.

**Answer: B**



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47. Refer to the given paragraph.

(i) does not have bones. It has (ii) which help to extend and shorten the body. It has a large number of (iii) projecting out from underside of the body which help to get a good grip on the ground.

Select the correct option for (i), (ii) and (iii) respectively.

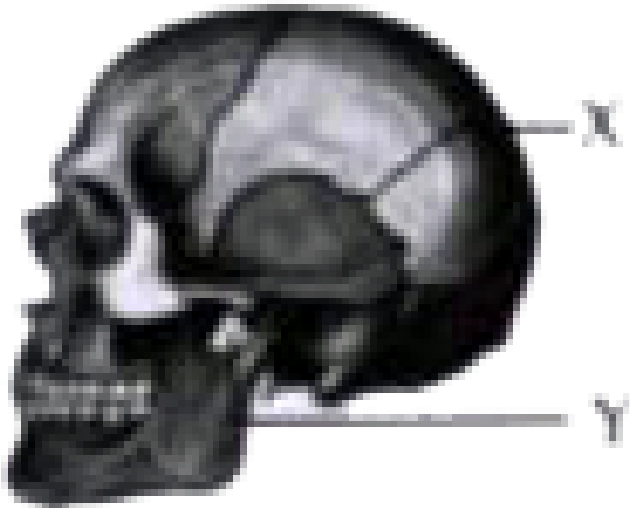
- A. Snail, setae, muscular foot
- B. Earthworm, muscles, setae
- C. Earthworm, muscular foot, scales
- D. Snake, muscles, setae

**Answer: B**



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48. Refer to given figure and select the correct option.



- A. X type of joint shows no movement at all.
- B. Y type of joint is also present in our elbow.
- C. X type of joint is also found in between vertebrae.
- D. Both (a) and (b)

**Answer: A**



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49. Which of the following is not an adaptation shown by birds for flying?

- A. Most bones are hollow and light.
- B. Hindlimbs are modified into wings to enable flight.
- C. Body is covered with feathers.
- D. Breast muscles are strong.

**Answer: B**



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50. 'X' is the skeleton which is present inside the body of an organism 'Y'.

Select the option which correctly identifies X and Y.

- |    |                  |           |
|----|------------------|-----------|
| A. | <i>X</i>         | <i>Y</i>  |
|    | Bony exoskeleton | Earthworm |

- B.  $X$  Soft exoskeleton  $Y$  Snail
- C.  $X$  Liquid endoskeleton  $Y$  Earthworm
- D.  $X$  Bony endoskeleton  $Y$  Snail

**Answer: C**



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### Exercise Fill In The Blanks

1. Skeletal system of our body is formed by \_\_\_\_\_ and \_\_\_\_\_ .



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2. Liquid skeleton is present in \_\_\_\_\_ .



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3. Cockroaches have \_\_\_\_\_ pairs of legs and \_\_\_\_\_ pairs of wings.



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4. \_\_\_\_\_ help the bones to move at the joints.



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5. Fill in the blank

The bones at the elbow are joined by a \_\_\_\_\_ joint.



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6. In birds, bones of the \_\_\_\_\_ limbs are typical for walking and perching.



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7. \_\_\_\_\_ is a soft tissue that joins one bone with the other.



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8. The skeleton present outside the body of an animal is called \_\_\_\_\_.



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9. \_\_\_\_\_ is a soft tissue that is present at the tip of the nose.



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10. \_\_\_\_\_ joint is present in the region where arm is joined to the shoulder.



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## Exercise True Or False

1. Human skeletal system consists of skull, backbone, ribs and limbs.

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2. The shell of a snail is made up of different units joined together.

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3. Human skull consists of all immovable joints.

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4. During movement, snake's body curves into many loops.

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5. The spinal cord encloses and protects the vertebral column.



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6. Pivot joint allows only side-to-side movements.



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7. Muscles become shorter and thicker while contracting.



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8. Cartilage present at the place of joint acts as a shock absorber between two bones.



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9. Our knee and elbow joints are gliding points.



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10. Vertebral column is made up of one long one.



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### Exercise Assertion Reason Type

1. Assertion : We are able to move a few parts of our body easily in various directions whereas some parts can be moved in only one direction.

Reason : Different types of joints are present in different parts of our body.

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

**Answer: A**



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2. Assertion : The up and down movements of four arms are controlled by two types of muscles, biceps and triceps.

Reason : Biceps : Biceps are the muscles that straighten the arm and triceps are the muscles that bend the arm.

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

**Answer: C**



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**3. Assertion :** Repeated muscle expansions and contractions make the earthworm move through the soil.

**Reason :** Earthworms help to make the soil fertile, loose and porous.

- A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: B**



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4. Assertion : When you open your mouth wide, you can move your lower jaw away from your head, but you cannot move your upper jaw.

Reason : The joint between the upper jaw and rest of the head is a fixed joint whereas the joint between the lower jaw and rest of the head is movable joint.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: A**

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5. Assertion : Hinge joint is present in shoulders and hips.

Reason : Hinge joint is the joint that allows movements in all the directions.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: D**



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**6. Assertion :** Cockroaches remain hidden and inactive during day while they become active at night.

**Reason :** Cockroaches have an outer hard skeleton which is made up of different units joined together .

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: B**



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7. Assertion : The shape of the fish is such that water can flow around it easily and offers minimum resistance.

Reason : The head and tail of the fish are smaller than the middle portion of the body.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.



**Answer: A**



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**8.** Assertion : Ribs are thin, flat and curved bones that form a protective cage around some internal organs of the body.

Reason : All the 24 ribs are attached to the backbone at the back and to the breastbone in the front.

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

**Answer: C**



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9. Assertion : The endoskeleton of the birds is such that it makes the body of the birds light weight.

Reason : Most of the bones in a bird's body are hollow and light.

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

**Answer: A**



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**10.** Assertion : The joint present between bones of the upper arm and fore arm is pivot joint.

Reason : Pivot joint allows all-round movement.

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

**Answer: D**



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**Exercise Subjective Questions Very Short Answer Type**

1. What is human skeleton made up of?



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2. Name the type of joint that helps a bowler to throw a ball in cricket.



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3. Name a part of our body that is made up of fixed point.



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4. Which property of muscles is responsible for movement of bones?



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5. Which joint is present in the region where our neck joins the head?



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6. How many number of bones are present in an adult human body?



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7. Write one important function of the backbone.



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8. Name two parts of human body in which cartilage is present.



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9. Name the group of muscles you use to bend your arm.



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10. What kind of skeleton does a cockroach have?



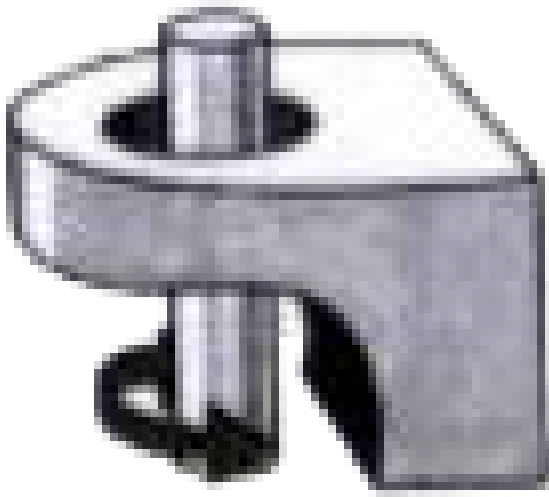
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11. The longest and strongest bone of the human body:



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12. In which body part, the joint represented by the figure is present?



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13. Why do different animals have different ways of locomotion?

[▶ Watch Video Solution](#)

14. What happens to a muscle when it contracts?

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15. Name an animal having liquid skeleton.

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### Exercise Subjective Questions Short Answer Type

1. Differentiate between movement and locomotion.

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2. Which features of the earthworm enable it to move on the ground.

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3. How does the slimy substance help in movement of animals like earthworm and snail?



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4. What is a streamlined body? How does it help in movement of animals that fly in air or swim in water?



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5. What is the importance of fins in fish?



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6. Give one word for following.

The long bony structure that runs along the back of your body.



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7. Give one word for following.

Tiny hair present on the underside of an earthworm.



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8. Give one word for following.

A body shape found in fish and birds.



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9. Give one word for following.

An organ protected by rib cage.



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**10.** Give one word for following.

The place where two or more bones are joined together.



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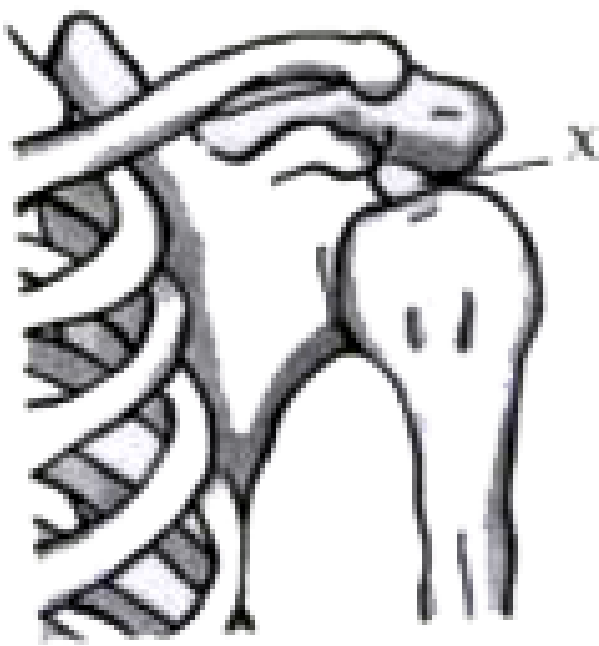
**11.** Give one word for following.

A tissue that connects one bone with the other.



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**12.** Identify the joint 'X' shown in given figure. What kind of movement does it allow? Name the body parts in which it is present.



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13. How are ligaments different from tendons?

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14. What would have happened if our backbone had only long instead of many vertebrae?

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15. Unscramble the jumbled words given below:

ULKLS

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16. Unscramble the jumbled words given below:

TEVEERBRA

 [Watch Video Solution](#)

17. Unscramble the jumbled words given below:

ELUMCS

 [Watch Video Solution](#)

**18.** Unscramble the jumbled words given below:

TEEKSONL



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**19.** Unscramble the jumbled words given below:

RTIGEAACL



**Watch Video Solution**

**20.** How does an earthworm fix parts of its body to the ground?



**Watch Video Solution**

**21.** What are floating ribs? Why are they called so?



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22. Describe the role of X-rays in the field of medicine (in relation to bones).



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23. Is shell of a snail made up of bone?



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## Exercise Subjective Questions Long Answer Type

1. How does an earthworm move?



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2. Why are earthworms called as farmer's friends?



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3. What is rib cage? What roles does it play?



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4. Why does a newborn body has more number of bones than an adult?



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5. Which features of a cockroach enable it to walk, run and fly?



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6. What is a joint? How can you classify joints on the basis of the type of movement they allow?



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7. Draw a neat and labelled diagram showing different bones and joints of human skeletal system.

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8. Enumerate the main functions of skeletal system in our body.

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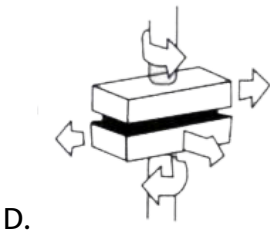
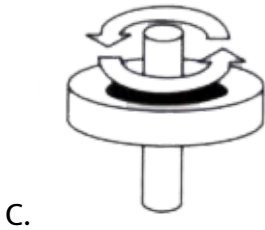
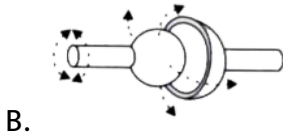
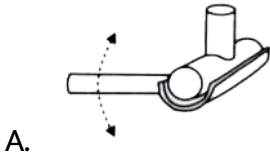
9. What are true ribs? Why are they called so?

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10. Describe how is the body of birds well adapted for flight?

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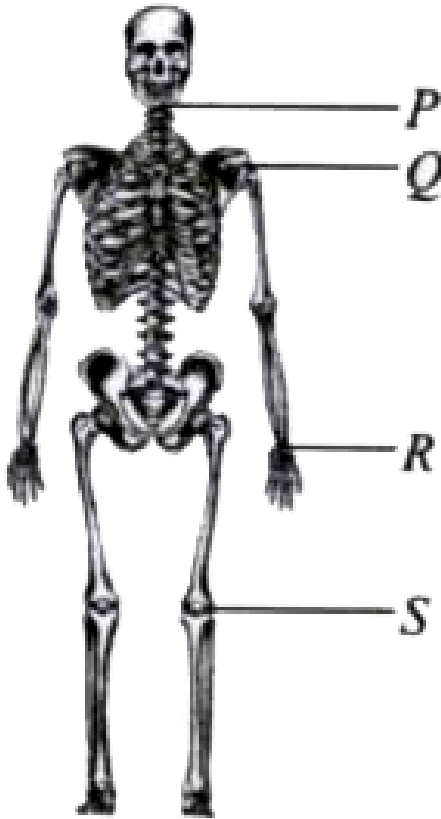
1. Hinge joint is present in our body between



Answer: C



2. Identify the joints labelled as P, Q, R and S in the given figures and select the correct option.



- |    |                           |                                   |                         |                         |
|----|---------------------------|-----------------------------------|-------------------------|-------------------------|
| A. | Gliding joint<br><i>S</i> | Ball and socket joint<br><i>P</i> | Hinge joint<br><i>Q</i> | Pivot joint<br><i>R</i> |
| B. | Gliding joint<br><i>R</i> | Ball and socket joint<br><i>Q</i> | Hinge joint<br><i>P</i> | Pivot joint<br><i>S</i> |

C.	Gliding joint <i>R</i>	Ball and socket joint <i>Q</i>	Hinge joint <i>S</i>	Pivot joint <i>P</i>
D.	Gliding joint <i>P</i>	Ball and socket joint <i>S</i>	Hinge joint <i>Q</i>	Pivot joint <i>R</i>

**Answer: C**

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**3.** Select the correct statement about skeletal system in some animals.

- A. Earthworms have liquid skeleton i.e., the liquid trapped in body spaces keeps the body firm.
- B. Sharks have skeleton present outside their body only and not inside.
- C. Snakes and birds have hollow bones which reduce their body weight and make the movement easier.
- D. Cockroaches have an endoskeleton made of chitin.

**Answer: A**



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4. The earthworm has no bones but there is a series of muscular rings all along its body, which it uses for locomotion. Given below are the various steps of its locomotion. Arrange them in sequence and select the correct option.

- (i) It shortens the body by muscle contraction and pulls its rear-end forward.
- (ii) It fixes the front end and releases the rear end.
- (iii) It fixes its rear portion to the ground with the help of tiny bristles.
- (iv) It extends the front part of its body by muscle expansion.

A. (iv) → (iii) → (ii) → (i)

B. (iii) → (iv) → (ii) → (i)

C. (i) → (ii) → (iii) → (iv)

D. (ii) → (iii) → (iv) → (i)

**Answer: B**



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**5. Which of the following statements is/are incorrect?**

- (i) Fishes have streamlined body in order to facilitate swimming.
- (ii) Birds have strong flight muscles which aid them in flying.
- (iii) Snakes have hollow bones that help them in locomotion.
- (iv) Tigers and wolves have sharp pointed teeth to help them tear the flesh of their prey.

A. (ii) only

B. (iii) and (iv) only

C. (iii) only

D. (i) and (iii) only

**Answer: C**



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6. Which of the following statements is correct for the models shown in given figure?



(A)



(B)

A. A' shows the functioning of hinge joint while 'B' shows the functioning of ball and socket joint.

B. A' is present in shoulder, while 'B' is seen in elbow.

C. A' shows the functioning of pivot joint, while 'B' shows the functioning of gliding joint.

D. A' is present in forearm while 'B' is seen in neck.

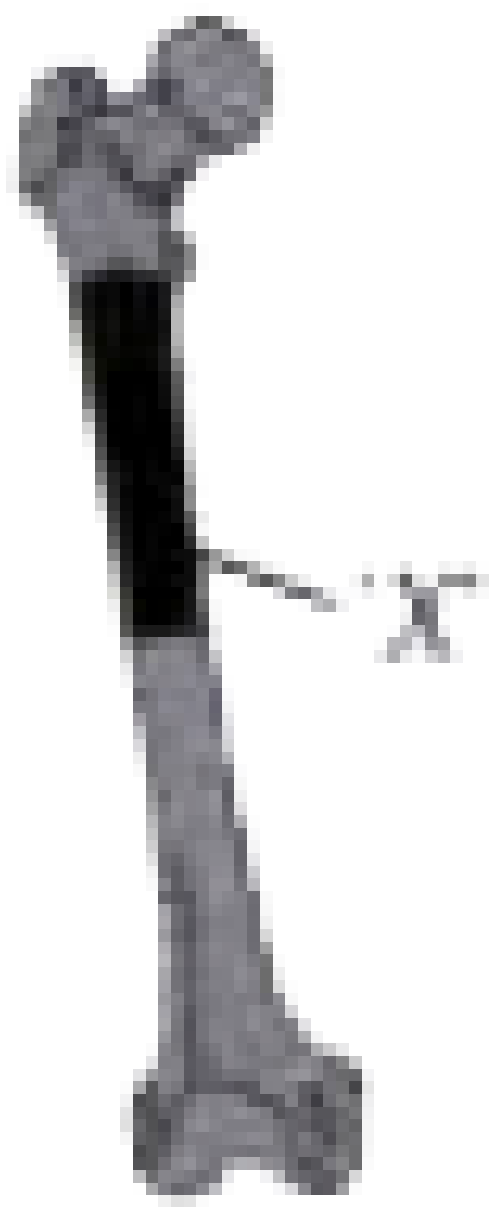
**Answer: A**



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7. The given figure shows a bone with a part labelled as 'X'. Select the correct regarding 'X'.





A. Blood cells are formed in 'X'.

B. X' is the flexible tissue in the hollow interior of bones.

C. Leukemia is a type of cancer of the blood that generally starts in 'X'.

D. All of these

**Answer: D**



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**8. Which of the following statements is correct?**

A. Pectoral girdle is the region where legs are attached to the hips.

B. Osteoporosis in the childhood is called rickets which is marked by insufficient amount of calcium in the bones.

C. Vertebral column of man has more number of vertebrae than that of woman.

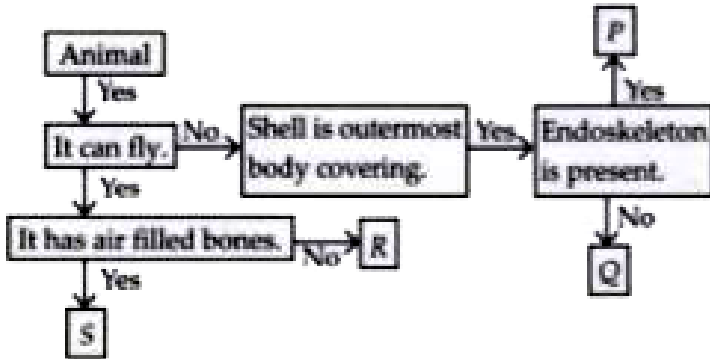
D. Snail moves with the help of muscular foot.

Answer: D



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9. Refer to the given flow chart.



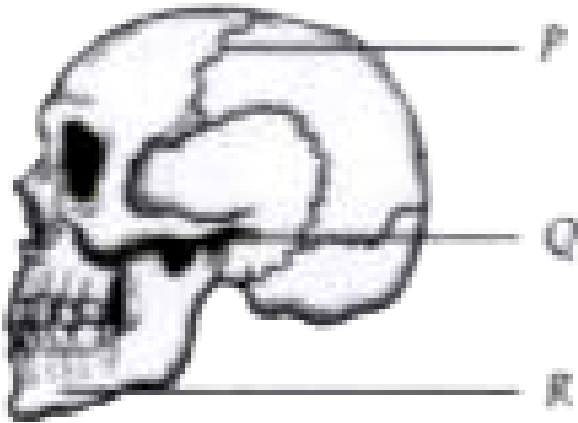
Identify P, Q, R and S and select the correct option.

- A. *P*      *Q*      *R*      *S*  
Oyster    Turtle    Pigeon    Grasshopper
- B. *P*      *Q*      *R*      *S*  
Tortoise    Clam    Butterfly    Sparrow
- C. *P*      *Q*      *R*      *S*  
Oyster    Tortoise    Mosquito    Housefly
- D. *P*      *Q*      *R*      *S*  
Snail    Turtle    Robin    Stork

Answer: B

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10. In which labelled part(s) is a movable joint present?



A. P

B. R

C. Q

D. All of these

**Answer: C**



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