6. BODY MOVEMENTS

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Multiple Choice Questions

1. Which part of the skeletal system is responsible for protecting the brain?

   A) Ribs B) Spine C) Skull D) Limbs

Correct Answer: (C) Skull

Explanation: The skull (cranium) is a bony structure that encases and protects the brain.

2. How many bones make up the upper part of the skull?

   A) 8 B) 14 C) 22 D) 6

Correct Answer: (A) 8

Explanation: The neurocranium (upper skull) consists of 8 fused bones.

3. What is the purpose of the spinal cord passing through the holes in the verte brae?

   A) To provide flexibility B) To protect the bones

   C) To transmit nerve signals D) To allow for bending and twisting

Correct Answer: (C) To transmit nerve signals

Explanation: The vertebral foramen forms a protective canal for the spinal cord, which relays neural signals.

4. What are the bones that form a cage around the heart and lungs?

   A) Skull B) Spine C) Limbs D) Ribs

Correct Answer: (D) Ribs

Explanation: The rib cage (12 pairs of ribs + sternum) shields thoracic organs.

5. How many pairs of ribs do humans typically have?

   A) 6 B) 10 C) 12 D) 14

Correct Answer: (C) 12

Explanation: Humans have 12 pairs (24 total) of ribs.

6. Which type of joint allows movement in only one direction?

   a) Ball and Socket Joint b) Pivot Joint

   c) Hinge Joint d) Gliding Joint

Correct Answer: (c) Hinge Joint

Explanation: Hinge joints (e.g., elbow, knee) permit flexion/extension in one plane.

7. Where are immovable joints commonly found?

   a) Arms b) Legs c) Skull d) Pelvis

Correct Answer: (c) Skull

Explanation: Sutures in the skull are fibrous, immovable joints.

8. What is the function of immovable joints?

   a) To allow free movement b) To protect delicate organs

   c) To cushion the joints d) To hold the joint together

Correct Answer: (b) To protect delicate organs

Explanation: They provide structural stability (e.g., skull protects the brain).

9. Which type of joint allows movement in all directions?

   a) Hinge Joint b) Pivot Joint

   c) Ball and Socket Joint d) Gliding Joint

Correct Answer: (c) Ball and Socket Joint

Explanation: These joints (e.g., hip, shoulder) allow multi-axial movement.

10. Where is the ball and socket joint found?

    a) Elbows b) Knees c) Hip d) Fingers

Correct Answer: (c) Hip

Explanation: The femoral head (ball) fits into the acetabulum (socket) of the pelvis.

11. Which muscles are responsible for pushing food from the mouth to the stom ach?

    a) Voluntary muscles b) Involuntary muscles

    c) Cardiac muscles d) Elastic muscles

Correct Answer: (b) Involuntary muscles

Explanation: Smooth muscles in the esophagus perform peristalsis automatically.

12. Which type of muscles are found in the heart?

    a) Voluntary muscles b) Involuntary muscles

    c) Cardiac muscles d) Elastic muscles

Correct Answer: (c) Cardiac muscles

Explanation: Striated, involuntary muscles unique to the heart.

13. How do voluntary muscles work during movement?

a) They expand b) They contract c) They stretch d) They relax

Correct Answer: (b) They contract

Explanation: Skeletal muscles shorten (contract) to pull bones.

14. How many muscles are typically needed to move bones in one direction?

a) 1 b) 2 c) 3 d) 4

Correct Answer: (b) 2

Explanation: Antagonistic muscle pairs (e.g., biceps/triceps) enable controlled movement.

15. Which type of muscles are responsible for activities like reading, writing, walking, or running?

a) Voluntary muscles b) Involuntary muscles

c) Cardiac muscles d) Elastic muscles

Correct Answer: (a) Voluntary muscles

Explanation: Skeletal muscles are under conscious control.

ADVANCED LEVEL QUESTIONS

More than One Answer Type

16. What are functions of the vertebral column (backbone)?

A) Protecting the spinal cord B) Providing flexibility

C) Supporting the body D) Producing red blood cells

Correct Answer: (A) Protecting the spinal cord, (B) Providing flexibility, (C) Supporting the body

Explanation: The spine supports posture, allows movement, and protects the spinal cord (red blood cell production occurs in bone marrow).

17. Which types of joints are movable? (Select all that apply)

A) Hinge Joint B) Ball and Socket Joint

C) Immovable Joint D) Gliding Joint

Correct Answer: (A) Hinge Joint, (B) Ball and Socket Joint, (D) Gliding Joint

Explanation: Immovable joints (e.g., skull sutures) lack mobility.

18. Which statements about muscles are true? (Select all that apply)

    A) Muscles are attached to bones and pull to make them move at joints.

    B) Muscles are capable of both pulling and pushing bones.

    C) Muscles are made of tough elastic tissues.

    D) At least 2 muscles are required to move bones in one direction.

Correct Answer: (A) Muscles pull bones, (C) Made of elastic tissues, (D) =2 muscles needed per movement

Explanation: Muscles cannot push; they only contract (pull).

Reason And Assertion Type

19. Assertion: Voluntary muscles control the movement of the body and are under conscious control.

    Reason: Involuntary muscles, on the other hand, work independently of con scious control and are found in internal organs.

Correct Answer: Both Assertion and Reason are true, and Reason explains Assertion.

Explanation: Voluntary muscles (e.g., biceps) are consciously controlled, while involuntary muscles (e.g., intestines) function autonomously.

20. Assertion: To move bones in one direction, at least 2 muscles are required.

    Reason: Muscles can only pull bones; they cannot push them.

Correct Answer: Both Assertion and Reason are true, and Reason explains Assertion.

Explanation: Muscles work in pairs (agonist/antagonist) because they can only contract (pull), not push.

Matrix Matching Type

21.

1. Skull	A. Forms a cage around the heart and lungs
2. Spine	B. Protects the brain and contains movable lower jaw
3. Rib Cage	C. Contains the femur, tibia, fibula, ankle, and foot
4. Fore Limbs (Arms)	D. Consists of 26 vertebrae and protects the spinal cord
5. Hind Limbs (Legs)	E. Includes the upper arm, forearm, wrist, and hand

Answer:

1.Skull - B. Protects the brain

2.Spine - D. 26 vertebrae, protects spinal cord

3.Rib Cage - A. Protects heart/lungs

4.Fore Limbs - E. Includes arm, wrist, hand

5.Hind Limbs - C. Includes femur, ankle, foot

Comprehension Type

Immovable Joints

An immovable joint is a place where two bones are joined together, where little or no movement happens. Its function is to protect the delicate organs inside it. For example, the joints between the bones of the skull, joints between the teeth, joints in the pelvis are all immovable joints.

Movable Joints

The joints that we are able to move freely in our body are called movable joints. These types of joints are found in the arms, legs, hip and shoulders. We are able to move these joints freely due the presence of cartilage.

22. How does cartilage contribute to the mobility of movable joints?

a) It cushions the joints. b) It holds the joint together.

c) It prevents dislocation. d) It allows bones to move freely.

Correct Answer: (a) It cushions the joints.

Explanation: Cartilage reduces friction and absorbs shock between bones.

23. Which of the following statements accurately describes movable joints?

a) They are primarily found in the skull.

b) They allow little to no movement between bones.

c) They are held together by ligaments.

d) They are found in the arms, legs, hip, and shoulders.

Correct Answer: (d) Found in arms, legs, hip, shoulders.

Explanation: Movable joints enable locomotion (e.g., knee, elbow), unlike immovable skull joints.

LEARNERS TASK
NEET LEVEL QUESTIONS
Multiple Choice Questions

1. Which part of the forelimb extends from the shoulder to the elbow?

A) Hand B) Forearm C) Upper arm D) Shoulder

Correct Answer: (C) Upper arm

Explanation: The upper arm contains the humerus bone between shoulder and elbow joints

2. What is the longest bone in the human body?

A) Humerus B) Femur C) Tibia D) Fibula

Correct Answer: (B) Femur

Explanation: The femur (thigh bone) averages 26% of a person's height.

3. Which bones are not attached to the chest bone but only to the backbone?

A) Floating ribs B) Lower ribs C) Upper ribs D) Sternum

Correct Answer: (A) Floating ribs

Explanation: Ribs 11-12 are "floating ribs" attached only to vertebrae, not the sternum.

4. How many bones make up the wrist and hand?

A) 20 B) 25 C) 27 D) 30

Correct Answer: (C) 27

Explanation: 8 carpals (wrist) + 5 metacarpals (palm) + 14 phalanges (fingers) = 27.

5. Which part of the skeletal system is responsible for supporting and shaping the body?

A) Ribs B) Skull C) Spine D) Limbs

Correct Answer: (C) Spine

Explanation: The vertebral column provides structural support and maintains posture.

6. What is the purpose of cartilage in joints?

a) To hold the joint together

b) To allow movement in all directions

c) To cushion the joints

d) To prevent dislocation

Correct Answer: (c) To cushion the joints

Explanation: Cartilage reduces friction and absorbs shock between bones.

7. Which joint allows side to side, upward and downward movement?

a) Hinge Joint b) Ball and Socket Joint
c) Pivot Joint d) Gliding Joint

Correct Answer: (d) Gliding Joint

Explanation: Gliding joints (e.g., between wrist/ankle bones) permit multi-directional sliding.

8. What type of joint is found in the wrist and ankle?

   a) Hinge Joint b) Ball and Socket Joint

   c) Pivot Joint d) Gliding Joint

Correct Answer: (d) Gliding Joint

Explanation: These joints allow limited sliding movements between small bones.

9. What is the function of ligaments in joints?

   a) To hold the joint together b) To allow free movement

   c) To cushion the joints d) To prevent dislocation

Correct Answer: (a) To hold the joint together

Explanation: Ligaments are tough fibrous tissues connecting bone to bone.

10. Where is the smallest bone in the human body located?

    a) Skull b) Arm c) Middle ear d) Leg

Correct Answer: (c) Middle ear

Explanation: The stapes bone measures ~2.8mm and transmits sound vibrations.

11. What is the function of muscles in the human body?

    a) To provide support to the bones b) To push bones for movement

    c) To pull bones for movement d) To regulate body temperature

Correct Answer: (c) To pull bones for movement

Explanation: Muscles contract (pull) but cannot push; they work antagonistically in pairs.

12. How many muscles are there in the human body?

    a) 320 b) 640 c) 480 d) 720

Correct Answer: (b) 640

Explanation: The body contains ~640 skeletal muscles (varies by classification method).

13. What connects muscles to bones?

    a) Nerves b) Ligaments c) Tendons d) Cartilage

Correct Answer: (c) Tendons

Explanation: Tendons are collagen fibers attaching muscles to bones.

14. Which type of muscles are responsible for the movement of the body under our control?

    a) Voluntary muscles b) Involuntary muscles

    c) Cardiac muscles d) Elastic muscles

Correct Answer: (a) Voluntary muscles

Explanation: Skeletal muscles are consciously controlled for locomotion.

15. Where are involuntary muscles mainly found?

    a) Arms and leg b) Heart c) Eyes and tongue d) Internal organs

Correct Answer: (d) Internal organs

Explanation: Smooth muscles in organs (e.g., intestines) function automatically.

ADVANCED LEVEL

More than One Answer Type

16. Which bones are part of the lower limb (leg)?

    A) Femur (thigh bone) B) Tibia C) Fibula D) Ankle

Correct Answers: (A) Femur, (B) Tibia, (C) Fibula

Explanation: The ankle is a joint, not a bone.

17. Which statements accurately describe immovable joints? (Select all that apply)

    A) They are found in the skull.

    B) Little or no movement happens in these joints.

    C) They are found in the arms and legs.

    D) They protect delicate organs.

Correct Answers: (A) Found in skull, (B) Little/no movement, (D) Protect organs

Explanation: Immovable joints (e.g., skull sutures) don't occur in limbs.

18. Which characteristics describe involuntary muscles? (Select all that apply)

    A) They control movement consciously.

    B) They work independently of conscious control.

    C) They are found in internal organs.

    D) They are found in the arms and legs.

Correct Answers: (B) Work unconsciously, (C) Found in organs

Explanation: They control automatic functions (e.g., digestion), not conscious movement.

Reason And Assertion Type

19. Assertion: Muscles are attached to bones and pull to make them move at joints.

    Reason: Muscles are made of tough elastic tissues.

Correct Answer: Both Assertion and Reason are true, but Reason doesn't explain Assertion.

Explanation: While muscles are elastic, this property doesn't directly explain their pulling action on bones.

20. Assertion: Cardiac muscles are responsible for pumping blood throughout the body and are involuntary.

    Reason: Smooth muscles, found in internal organs, include those responsible for pushing food from the mouth to the stomach.

Correct Answer: Both Assertion and Reason are true, but Reason is unrelated.

Explanation: While both describe involuntary muscles, the Reason discusses smooth muscles, not cardiac muscles.

Matrix Matching Type

21.

1. Hinge Joint	A. Allows movement in all directions; one bone is like a ball fitting into a hollow socket of another bone.
2. Ball and Socket Joint	B. Allows movement only in one direction.
3. Pivot Joint	C. Allows bones to slide on each other in any direc tion along the plane of the joint.
4. Gliding Joint	D. Found between the head and neck, allowing side to side, upward, and downward movement.

Answer:

1.Hinge Joint - B. Allows movement in one direction

2.Ball and Socket Joint - A. Allows multi-axial movement

3.Pivot Joint - D. Allows rotational movement

4.Gliding Joint - C. Permits sliding motions

Comprehension Type

Ribs are thin, flat, bow-shaped bones that are enclosed. They form a cage around the heart and lungs to protect them. We have 12 pairs of ribs which are symmetrically paired on the right side and left side, forming a cage. They join the backbone at the back and the sternum (chest bone) in the front. 2 pairs of the lower ribs are not attached to the chest bone; they are only attached to the backbone and are called floating ribs.

22. What is the primary purpose of ribs in the human body?

A) To support the spinal cord

B) To facilitate movement of the arms

C) To form a protective cage around the heart and lungs

D) To provide structure to the legs

Correct Answer: (C) Form a protective cage

Explanation: Ribs shield the heart and lungs from external damage.

23. What is the function of the rib cage?

A) To protect the liver

B) To provide structure to the face

C) To enclose and protect the heart and lungs

D) To support the legs

Correct Answer: (C) Enclose and protect heart/lungs

Explanation: The bony structure prevents compression of thoracic organs.

TEACHING TASK
NEET LEVEL QUESTIONS
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Multiple Choice Questions

1. What is the purpose of the shell for a snail?

a) To protect against predators b) To help with digestion

c) To serve as a home d) To aid in reproduction

Correct Answer: (a) To protect against predators

Explanation: The snail's hard shell serves as a protective barrier from birds, rodents, and other predators.

2. Where is a snail's head located in relation to its shell?

a) It's inside the shell b) It's on top of the shell

c) It's at the back of the shell d) It's underneath the shell

Correct Answer: (a) It's inside the shell

Explanation: When threatened, the snail retracts its head and foot entirely into its shell for protection.

3. What is the thick part of a snail called?

a) Antenna b) Tentacle c) Foot d) Fin

Correct Answer: (c) Foot

Explanation: The muscular "foot" is the locomotive organ that secretes mucus for movement.

4. How does a snail's foot move?

a) In a straight line
b) By hopping
c) In a wavy motion
d) By contracting and expanding

Correct Answer: (d) By contracting and expanding

Explanation: Waves of muscular contractions (peristalsis) propel the snail forward.

5. What role does the snail's foot play in its movement?

a) It helps it grip surfaces
b) It acts as a sensory organ
c) It produces slime for locomotion
d) It propels the snail forward

Correct Answer: (a) It helps it grip surfaces

Explanation: The foot creates suction and secretes mucus to adhere to and glide across surfaces.

6. What enables cockroaches to move efficiently?

a) Lightweight bones
b) Hard outer shell
c) Hollow wings
d) Streamlined body shape

Correct Answer: (d) Streamlined body shape

Explanation: Their flattened, oval body allows them to squeeze through narrow spaces.

7. What adaptation helps birds to fly?

a) Strong hind legs
b) Lightweight body
c) Thick outer shell
d) Short wings

Correct Answer: (b) Lightweight body

Explanation: Hollow bones, fused vertebrae, and feathers reduce weight for flight.

8. What characteristic of a fish's body helps it move smoothly through water?

a) Large head and tail
b) Jerky movements
c) Streamlined shape
d) Heavy skeleton

Correct Answer: (c) Streamlined shape

Explanation: The torpedo-like body minimizes water resistance.

9. How do fish propel themselves forward?

a) Pushing against the ground
b) Swinging their tail side to side
c) Moving their fins up and down
d) Curling their bodies into loops

Correct Answer: (b) Swinging their tail side to side

Explanation: Lateral tail movements create thrust by pushing against water.

10. What assists underwater divers in moving easily in water?

    a) Hollow bones b) Streamlined body shape

    c) Tail fins d) Fin-like flippers on their feet

Correct Answer: (d) Fin-like flippers on their feet

Explanation: Swim fins mimic fish tails to increase propulsion.

LEARNERS TASK
NEET LEVEL QUESTIONS

Multiple Choice Questions

1. What is the Earthworm's method of locomotion?

    a) Sliding b) Wiggling c) Hopping d) Gliding

Correct Answer: (b) Wiggling

Explanation: Alternating muscle contractions create a wavelike motion.

2. How does an Earthworm anchor itself to the ground?

    a) Using suction cups b) With tiny bristles on its belly

    c) By burying itself d) By wrapping around objects

Correct Answer: (b) With tiny bristles on its belly

Explanation: Setae (bristles) grip soil during movement.

3. What purpose does the slippery substance produced by an Earthworm serve?

    a) To attract prey b) To camouflage itself

    c) To help it slide through soil d) To build its nest

Correct Answer: (c) To help it slide through soil

Explanation: Mucus reduces friction in burrows.

4. What is the snail's outer structure called?

    a) Skeleton b) Exoskeleton c) Shell d) Carapace

Correct Answer: (c) Shell

Explanation: Calcium carbonate shell grows with the snail.

5. How does a snail move?

    a) By jumping b) By flying c) By crawling d) By swimming

Correct Answer: (c) By crawling

Explanation: Muscular foot glides on secreted mucus.

6. What allows snakes to move quickly?

   a) Long backbone b) Thick muscles c) Short ribs d) Smooth skin

Correct Answer: (a) Long backbone

Explanation: 200-400 vertebrae enable flexible locomotion.

7. How do snakes achieve forward movement?

   a) Pushing against the ground with their tails b) Moving in a straight line

   c) Curving their bodies into loops d) Sliding on their bellies

Correct Answer: (c) Curving their bodies into loops

Explanation: Lateral undulation pushes against surface irregularities.

8. Which animal has a hard outer shell made of plates?

   a) Birds b) Fish c) Snakes d) Cockroaches

Correct Answer: (d) Cockroaches

Explanation: Their exoskeleton has overlapping chitinous plates.

9. What type of bones do birds have that aid in flight?

   a) Heavy and thick b) Hollow and lightweight

   c) Short and flexible d) Long and dense

Correct Answer: (b) Hollow and lightweight

Explanation: Pneumatic bones are air-filled to reduce weight.

10. How do fish maintain balance and direction while swimming?

    a) With their hollow wings b) By pushing against the ground

    c) With their fins d) By curving their bodies into loops

Correct Answer: (c) With their fins

Explanation: Dorsal/pectoral fins prevent rolling and aid steering.