



BIOLOGY

BOTANY AND ZOOLOGY FOR NEET AND AIIMS

LOCOMOTION AND MOVEMENT

Exercise I Type Of Movement

1. Macrophages and leucocytes exhibit

- A. ciliary movement
- B. flagellar movement
- C. amoeboid movement
- D. gliding movement.

Answer: C



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Exercise I Muscle

1. The following diagram shows a thin myofilament of striated muscle fibre. Choose the option that correctly identifies a part of it along with its feature.



A. A - Tropomyosin, it is distributed at regular intervals and has three subunits

B. A - Troponin, a subunit of it masks the active binding sites for myosin on the actin filaments

C. B - Troponin, two filaments of it run close to the 'F' actins throughout its length

D. C- 'G' actin, it is a polymer of 'F' actins

Answer: B



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2. Identify the Incorrect match about muscle fibres

Red muscle	White muscle
1) More myoglobin	Less myoglobin
2) More sarcoplasmic reticulum	Less sarcoplasmic reticulum
3) More mitochondria	Fewer mitochondria
4) More vascular	Less vascular



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3. When a neural signal reaching the neuromuscular junction releases acetylcholine, an action potential is generated first in

A. Sarcolemma

B. Sarcoplasmic reticulum

C. Sarcosomes

D. Sarcomeres

Answer: A



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4. Muscle fatigue is due to accumulation of

A. Myoglobin

B. Glucose

C. Lactic acid

D. Phosphocreatine

Answer: C



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5. In a myofibril, the thick filaments are held together in the middle of A-band by a thin fibrous membrane called

A. Z-line

B. K-line

C. M-line

D. H-line

Answer: C



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6. In a myofibril, each I band is bisected by

A. Z-line

B. K-line

C. M-line

D. H-line

Answer: A



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7. Which of the following has ATP binding site?

A. Light meromyosin

B. Troponin

C. Heavy meromyosin

D. Tropomyosin

Answer: C



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8. Thin myofilaments are made up of

A. Actin, tropomyosin and meromyosin

B. Tubulin and dynein

C. Heavy meromyosin and light meromyosin

D. Actin, troponin and tropomyosin

Answer: D



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9. The contractile element present in the myofibril of a striated muscle between two successive Z-lines is called

- A. 1. Sarcosome
- B. 2, Sarcoplasm
- C. 3. Sarcomere
- D. 4. Sarcoplasmic reticulum

Answer: C



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10. A skeletal muscle fibre is

A. 1. Binucleate

B. 2. Uninucleate

C. 3. Multinucleate

D. 4. Enucleate

Answer: C



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11. The tails of myosin are made up of

- A. Light meromyosin
- B. Globular actin
- C. Heavy meromyosin
- D. Filamentous actin

Answer: A



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12. White muscle fibres contain more

A. Sarcoplasmic reticulum

B. Myoglobin

C. Mitochondria

D. Blood supply

Answer: A



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13. Ions that play a role in muscle contraction are

- A. Sodium ions
- B. Chloride ions
- C. Potassium ions
- D. Calcium ions

Answer: D



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14. Thin myofilaments are made up of

A. Actin, tropomyosin and meromyosin

B. Tubulin and dynein

C. Heavy meromyosin and light
meromyosin

D. Actin, troponin and tropomyosin

Answer: C



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15. During muscle contraction

- A. Thin myofilaments shorten
- B. Thick myofilaments shorten
- C. A band reduces in width
- D. H zone reduces in width

Answer: D



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16. Identify the correct statement

- A. 'F' actin a polymer of 'G' actin molecules
- B. Heavy meromyosin forms tail
- C. Light meromyosin forms head
- D. Each light meromyosin has two bindings sites

Answer: A



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17. Which of the following is true with regard to red muscle fibres?

A. 1. Short term contractions

B. 2. High intensity contractions

C. 3. More amount of sarcoplasmic
reticulum

D. 4. More amount of oxygen storage

Answer: D



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18. Which of the following is a motor protein?

A. 1. 'F' actin

B. 2. 'G' actin

C. 3. Myosin

D. 4. Tropomyosin

Answer: C



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19. During muscle contraction

A. Mechanical energy is changed into chemical energy

B. Chemical energy is changed into mechanical energy

C. Chemical energy is changed into electrica energy

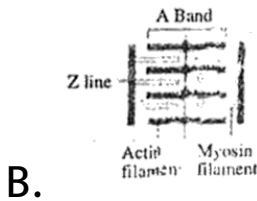
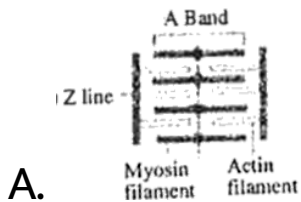
D. Physical energy is changed into chemical energy

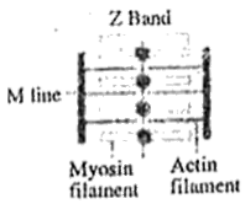
Answer: B



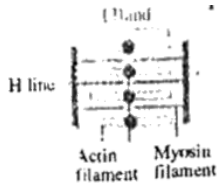
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20. Which of the following sarcomeres is labeled correctly?





C.



D.

Answer: A



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21. Identify the correct combination from the following

A. Amoeboid movement - streaming of
protoplasm - Euglena

B. Flagellar movement - undulations -
Spermatozoa

C. Ciliary movement - Metachronous
rhythm Acineta

D. Muscular movement - Contraction of
myonemes - peritremis

Answer: B



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22. Identify the correct combination

- A. HMM - Actini - Head and tail
- B. LMM - Myosin - neck and tail
- C. Cross arm - Myosin - head and neck
- D. Short arm - Actin - neck

Answer: C



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23. Which of the following is an ATPase enzyme?

- A. 1. Troponin
- B. 2. Light meromyosin
- C. 3. Tropomyosin
- D. 4. Heavy meromyosin'

Answer: D



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24. What is a sarcomere?

- A. Part between two H-lines
- B. Part between two A-lines
- C. Part between two I-bands
- D. Part between two Z-lines

Answer: D



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25. ATPase of the muscle is located in

A. actinin

B. troponin

C. myosin

D. actin

Answer: C



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26. Which one of the following statement is incorrect?

A. Heart muscles are striated and involuntary.

B. The muscles of hands and legs are striated and voluntary.

C. The muscles located in the inner walls of alimentary canal are striated and involuntary

D. Muscles located in the reproductive tracts are unstriated and involuntary.

Answer: C



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27. Muscles with characteristic striations and involuntary are

A. muscles in the wall of alimentary canal

B. muscles of the heart

C. muscles assisting locomotion

D. muscles of the eyelids.

Answer: B



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Exercise I Skeletal System

1. The number of bones that make up the human skull is

A. 22

B. 28

C. 14

D. 29

Answer: D



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2. The number of true ribs in man is

A. 9 pairs

B. 7 pairs

C. 12 pairs

D. 2 pairs

Answer: B



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3. The bone that bears the acromion process is

A. Clavicle

B. Scapula

C. Humerus

D. Radius

Answer: B



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4. The number of facial bones in the human skull is

A. 14

B. 22

C. 8

D. 29

Answer: A



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5. Largest triangular bone of the pectoral girdle

A. Clavicle

B. Coxal

C. Scapula

D. Ischium

Answer: C



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6. Number of occipital condyles in human is

A. 2

B. 1

C. 3

D. 4

Answer: A



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7. The bone with the glenoid cavity is

A. Clavicle

B. Ilium

C. Scapula

D. Pubis

Answer: C



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8. The number of carpals and tarsals in the human skeleton are respectively

A. 14 and 16

B. 16 and 14

C. 14 and 14

D. 16 and 16

Answer: B



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9. The total number of bones that form the thoracic (rib) cage is

A. 36

B. 37

C. 25

D. 24

Answer: B



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10. The collar bone is

A. Clavicle

B. Humerus

C. Scapula

D. Coracoid

Answer: A



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11. Which of the following represents the fusion of ilium, ischium and pubis?

A. Sacrum

B. Coxal bone

C. Coccyx

D. Collar bone

Answer: B



12. The correct representation of cervical, thoracic, lumbar, sacral and coccygeal vertebrae respectively is

A. 7,12,6,1,1

B. 8,12,5,1,1

C. 7,12,5,1,1

D. 7,14,5,1,1

Answer: C





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13. Find the wrong match.

A. Humerus - upper arm

B. Metacarpals - palm

C. Radius and ulna - fore arm

D. Tarsals - wrist

Answer: D



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14. Vertebrochondral ribs in man are

- A. 11th and 12th pairs
- B. 8th, 9th and 10th pairs
- C. Last five pairs
- D. Last three pairs

Answer: B



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15. Choose the wrong match.

A. Cervical - 7 vertebrae

B. Lumbar - 5 vertebrae

C. Thoracic - 12 vertebrae

D. Sacrum - 4 fused vertebrae

Answer: D



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16. The number of bones in the axial skeleton of an adult human is

A. 55

B. 29

C. 80

D. 126

Answer: C



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17. Which of the following is a part of the pectoral girdle?

A. sternum

B. acetabulum

C. glenoid cavity

D. ilium

Answer: C



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18. The number of floating ribs in the human body is

A. 3 pairs

B. 2 pairs

C. 6 pairs

D. 5 pairs

Answer: B



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19. Total number of bones in the lower limb of man is

A. 24

B. 30

C. 14

D. 21

Answer: B



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20. Coxal bone is the component of

- A. pelvic girdle
- B. elbow joint
- C. pectoral girdle
- D. knee joint

Answer: A



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21. The bone not associated with the rib case/cage is

A. Thoracic vertebrae

B. Sternum

C. Lumbar vertebrae

D. Ribs

Answer: C



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22. Which one is a part of appendicular skeleton?

A. Odontoid process

B. palatine process

C. Occipital condyle

D. Patella

Answer: D



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23. Number of bones in cranium, face, hyoid and middle ear are respectively

A. 14, 8, 1 and 3

B. 8, 14, 1 and 3

C. 3, 8, 14 and 1.

D. 14, 8, 3 and 1

Answer: B



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24. Coxal bone of pelvic girdle is formed by fusion of

A. Ilium, ischium and pubis

B. Scapula and clavicle

C. Ilium and scapula

D. Ilium, scapula and ischium

Answer: A



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25. Identify the incorrect match

A. Facial bones - 14

B. Cranial bones - 8

C. Ear ossicle- 6 .

D. Occipital condyles - 4

Answer: D



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26. Identify the correct match about adult vertebral column

A. Thoracic vertebrae - 7

B. Lumbar vertebrae - 12

C. Sacral vertebrae - 1

D. Coccygeal vertebrae - 4

Answer: C



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27. Identify the bones which are related to axial skeleton

A. Vomer, Scapula, Hyoid, Tarsal

B. Patella, Hip bone, Scapula, Tibia

C. Malleus, Coccyx, Sternum, Lacrimal

D. Fibula, Sacrum, Clavicle, Zygomatic bone

Answer: C



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28. Connection of bone to bone is by

A. Cartilage

B. tendon

C. muscle

D. ligament

Answer: D



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29. Sternum is connected to ribs by

- A. bony matter
- B. white fibrous cartilage
- C. hyaline cartilage
- D. areolar tissue

Answer: C



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30. Ribs are attached to

A. scapula

B. sternum

C. clavicle

D. ilium

Answer: B



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31. Intervertebral disc is found in the vertebral column

A. birds

B. reptiles

C. mammals

D. amphibians

Answer: C



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32. Which one of the following is showing the correct sequential order of vertebrae in the vertebral column of human beings?

A. Cervical - lumbar - thoracic - sacral - coccygeal

B. Cervical - thoracic - sacral - lumbar - coccygeal

C. Cervical - sacral - thoracic - lumbar - coccygeal

D. Cervical - thoracic - lumbar - sacral - coccygeal

Answer: D



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33. Which one of the following statements is true?

A. Head of humerus bone articulates with acetabulum of pectoral girdle.

B. Head of humerus bone articulates with
glenoid cavity of pectoral girdle.

C. Head of humerus bone articulates with a
cavity called acetabulum of pelvic girdle.

D. Head of humerus bone articulates with a
glenoid cavity of pelvic girdle.

Answer: B



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34. An acromion process is characteristically found in the

- A. Pelvic girdle of mammals
- B. Pectoral girdle of mammals
- C. Skull of frog
- D. Scapula of mammals

Answer: B



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Exercise I Joints

1. Joint between carpal and metacarpal of thumb is

A. Condylloid joint

B. Saddle joint

C. Gliding joint

D. Pivot joint

Answer: B



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2. The type of joint between the human skull bones is called

A. cartilaginous joint

B. hinge joint

C. fibrous joint

D. synovial joint

Answer: C



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3. The joint between atlas and axis is

A. gliding joint

B. hinge joint

C. pivot joint

D. saddle joint

Answer: C



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4. What is the name of joint between ribs and Sternum?

A. Cartilaginous joint

B. Angular joint

C. Gliding joint

D. Fibrous joint

Answer: A



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5. Which of the following pairs is correctly matched?

A. Hinge joint - between vertebrae

B. Gliding joint - between zygapophyses of the successive vertebrae

C. Cartilaginous joint - skull bones

D. Fibrous joint - between phalanges

Answer: B



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6. What will happen if ligaments are torn?

- A. Bones will move freely at joint & no pain
- B. Bone will be less movable at joint & painful
- C. Bone will become unfixed
- D. Bone will become fixed

Answer: B



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7. What is the type of movable joint present between the atlas and axis?

A. Pivot

B. Saddle

C. Hinge

D. Gliding

Answer: A



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8. Which one of the following options is incorrect?

A. Hinge joint - between humerus and pectoral girdle

B. Pivot joint- between atlas and axis

C. Gliding joint - between the carpals

D. Saddle joint - between carpal and metacarpals of thumb

Answer: A





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9. Knee joint and elbow joints are examples of

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

Answer: D



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Exercise I Disorders Of Muscular And Skeletal Systems

1. Which of the following is an autoimmune disorder leading to paralysis of skeletal muscle?

- A. Myasthenia gravis
- B. Myotonic dystrophy
- C. Tetany
- D. Muscular dystrophy

Answer: A



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2. Which of the following is a progressive degeneration of skeletal muscle that occurs mostly due to genetic disorder?

A. Muscular dystrophy

B. Tetany

C. Myasthenia gravis

D. Gout

Answer: A



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3. Gout disease is due to the accumulation of

A. Cholesterol

B. Uric acid

C. Lactic acid

D. Urea

Answer: B



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4. Which one of the following is not a disorder of bone?

A. Arthritis

B. Osteoporosis

C. Rickets

D. Atherosclerosis

Answer: D



Exercise II Muscle

1. In the region of A-band of a myofibril of a skeletal muscle where thick and thin filaments overlap. each thick filament is surrounded by

- A. Three thin filaments
- B. Five thin filaments
- C. Two thin filaments
- D. Six thin filaments

Answer: D



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2. Correct order of stages of muscle contraction is

A. Stimuli → Neurotransmitter secretion
→ Release of calcium → Cross-bridges formation - Excitation of T-system → Sliding of actin filaments

B. Stimuli → Neurotransmitter secretion

→ Excitation of T-system Release of

Ca^{2+} → - Cross-bridges formation

→ Sliding of actin filaments → H^+

band diminishes

C. Stimuli → Excitation of T-system →

Neurotransmitter secretion → Cross

bridges formation → Sliding of actin

filaments → ' H^+ band diminishes

D. Stimuli → Neurotransmitter secretion

→ Cross-bridges formation →

Excitation of T-system → Sliding of
actin filaments.

Answer: B



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3. The first source of energy that is used to reconstitute the ATP in a contracting skeletal muscle is

A. Glycogen

B. Phosphocreatine

C. Lactic acid

D. Acetyl CoA

Answer: B



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4. Find the correct statement with regard to the arrangement of myosin molecules in a sarcomere

- A. All the tails face towards 'M' line
- B. All the heads face towards 'M' line
- C. Half of the heads towards one 'M' line
- D. Half of the heads towards one 'Z' line
and other half towards 'M' line

Answer: A



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5. Cori's cycle involves

A. Gluconeogenesis in the muscle

B. Deamination in the liver

C. Gluconeogenesis in the liver

D. Urea synthesis in the liver

Answer: C



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6. In marathon race, what is inajor source of energy to leg muscle?

A. Lactate

B. Oxidative metabolism

C. Pyruvate

D. Anaerobic respiration

Answer: B



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7. Identify the incorrect combination.

Protein sub unit	Function
1) T_nI	initiate factor
2) T_nC	calcium ions bind to it
3) T_nT	tropomyosin binds to it
4) T_nI	Inhibitory factor



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8. Identify the incorrect combination from the following

A. Sarcomere . Part of myofibril between
two Dobie's lines

B. Motor unit . Set of skeletal muscle fibres
and innervated by the afferent neuron

C. Triad system. T tubule and two on
cisternae either side

D. Motor endplate - The depression of
sarcolemma opposite the synaptic end
bulbs

Answer: B



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9. Identify the correct match

A. Motor protein -mask and unmask the active site

B. Regulatory protein- Convert chemical energy into mechanical energy

C. Power stroke - Myosin head pulls the actin filaments towards H-zone

D. Recovery stroke - Movement of actomyosin towards M-line

Answer: C



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10. Identify the incorrect match about Cori cycle.

In Liver

- 1) initiated by lactic acid
- 2) lactate is converted into pyruvate
- 3) 2 ATP released
- 4) releases glucose into the blood

In Muscle

- initiated by glucose
- pyruvate is converted into lactate
- 6 ATP consumed
- releases lactate into the blood



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11. If the stimulus applied to a skeletal muscle fibre is just less than threshold stimulus, it will

- A. Not contract at all
- B. Contract with lesser force
- C. Contract with greater force
- D. Contract with the same force

Answer: A



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12. The longest muscle in the human body is

- A. gluteus maximus
- B. stapedial muscle
- C. sartorius muscle
- D. gastrocnemius muscle

Answer: C



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13. Which of the following is true about muscle physiology?

A. A muscle fibres obey all-or-none law but not a muscle

B. A muscle obeys all-or-none law but not a muscle fibre

C. A muscle as well as muscle fibres obey all or-none law

D. Neither muscles nor muscle fibres obey
all or-none law

Answer: A



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14. The resting tension in a muscle is termed

- A. muscle twitch
- B. muscle tremor
- C. muscle tone

D. muscle fatigue

Answer: C



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15. Holding a book steady using an outstretched arm is an example for

A. concentric isotonic muscle contraction

B. isometric muscle contraction

C. eccentric isotonic muscle contraction

D. failure of muscle contraction

Answer: B



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16. The brief contraction of all the muscle fibres in a motor unit in response to a single action potential in its motor neuron is called

A. muscle tone

B. treppe

C. rigor mortis

D. muscle twitch

Answer: D



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17. We move our hands while walking for

A. Faster movement

B. Balancing

C. Increasing blood circulation

D. Relieving tension

Answer: B



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18. The muscle which moves a limb away from the median axis is called

A. Supinator

B. Pronator

C. Abductor

D. Adductor

Answer: C



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19. Latissimus dorsi muscle is a

A. trunk muscle

B. neck muscle

C. a leg muscle

D. eye muscle

Answer: A



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20. Achilles tendon is associated with

- A. gluteus muscle
- B. hamstring muscle
- C. quadriceps muscle
- D. gastrocnemius muscle

Answer: D



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21. When a muscle bends one part upon the other, it is called

A. abductor

B. regulator

C. extensor

D. flexor

Answer: D



22. Accumulation of lactic acid in muscles

- A. Lowers P^H
- B. Increase pH
- C. Is good for health
- D. Removes fatigue

Answer: A



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23. In the region of A-band of a myofibril of a skeletal muscle where thick and thin filaments overlap. each thick filament is surrounded by

- A. Six thick filaments
- B. Two thick filaments
- C. Three thick filaments
- D. Four thick filaments

Answer: C



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24. Fast twitch muscle fibres have abundant

A. ER

B. mitochondria

C. myoglobin

D. haemoglobin

Answer: A



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25. Muscle that is attached to the malleus is

A. Orbicularis oris

B. Masseter

C. Stapedius

D. Tensor tympani

Answer: D



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26. The longest muscle in the human body is

A. Gluteus maximus

B. Stapedial muscle

C. Gastrocnemius

D. Sartorius muscle

Answer: D



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27. Stiffening of the body after death is termed

- A. 1, Latent period
- B. 2. Refractory period
- C. 3. Rigor mortis
- D. 4. Tetanus

Answer: C



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1. Choose the wrong match

- A. Sutures - fibrous joints
- B. Saddle joints - synovial joints
- C. Condylloid joints - fibrous joints
- D. Symphyses - cartilaginous joints

Answer: C



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2. The pelvic girdle articulates to

A. Sacrum

B. Atlas

C. Coccyx

D. Axis

Answer: A



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3. The medial, weight-bearing bone of the leg is

A. Radius

B. Fibula

C. Ulna

D. Tibia

Answer: D



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4. The only bone of the skull that does not articulate with any other bone is

A. Mandible

B. Malleus

C. Hyoid

D. Zygomatic

Answer: C



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5. The total number of vertebrae during early development is

A. 33

B. 29

C. 26

D. 30

Answer: A



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6. Largest and strongest vertebra(e) is/are

A. Atlas

B. Axis

C. Thoracic

D. Lumbar

Answer: D



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7. The number of paired bones in the axial skeleton of an adult human is

A. 23

B. 34

C. 40

D. 48

Answer: A



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8. All of the following structures in the human skeleton are made up of a single bone except

A. Lower jaw

B. Hyoid

C. Upper jaw

D. Zygomatic arch

Answer: C



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9. The number of unpaired bones in the axial skeleton of an adult human is

A. 40

B. 34

C. 58

D. 2

Answer: B



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10. The smallest bone of the face is

A. Lacrimal Bone

B. Palatines

C. Vomer

D. Mandible

Answer: A



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11. The bone that bears coracoid process is

A. Clavicle

B. Humerus

C. Scapula

D. Pubis

Answer: C



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12. Coronal suture is formed in between

A. Parietal and occipital

B. Parietal and parietal

C. Parietal and frontal

D. Parietal and temporal

Answer: C



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13. The bone with foramen of magnum is

A. Frontal

B. Temporal

C. Occipital

D. Sphenoid

Answer: C



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14. The longest and strongest bone of skull is

A. Hyoid

B. Maxilla

C. Zygomatic

D. Mandible

Answer: D



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15. Scroll like bones that form lateral wall of nasal cavity are called

A. Nasals

B. Nasal conchae

C. Palatines

D. Lacrimals

Answer: B



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16. Except ear ossicles the only movable skull bone is

A. Vomer

B. Maxilla

C. Mandible

D. Zygomatic

Answer: C



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17. Arrange the bones in ascending order w.r.t. length

A. Stapes lacrimal Mandible Tibia

B. Stapes Mandible Lacrimal Femur

C. Femur Mandible lacrimal Stapes

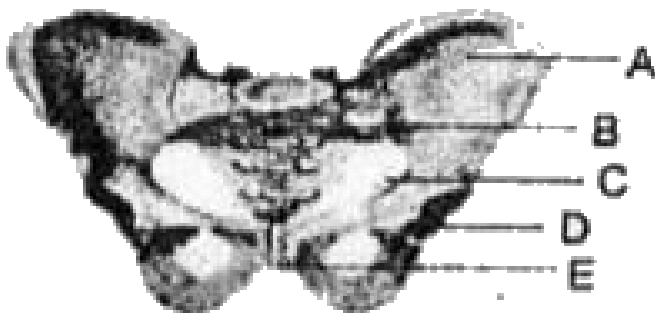
D. Femur stapes ulna radius

Answer: A



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18. In the pelvic girdle of man, A, B, C, D and E respectively represent:



A. A-Pubis, B-Sacrum, C-Coccyx, D-

Acetabulum, E-Pubic symphysis

B. A-Ilium, B-Sacrum, C-Coccyx, D-

Acetabulum, E-Pubic symphysis

C. A-Ilium, B-Coccyx, C-Sacrum, D-

Acetabulum, E-Pubic symphysis

D. A-Ilium, B-Sacrum, C-Coccyx, D-Pubic

symphysis, E-Acetabulum

Answer: B



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19. Identify the correct match.

A. Parietal bone - Lateral wall and floor of
the cranial cavity

B. Sphenoid bone - Keystone bone

C. Occipital bone - Anterior base of the
skull

D. Temporal · Lateral wall and roof of the
cranial cavity

Answer: B



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20. Identify the correct statement

- A. Femur is the strongest axial skeletal bone
- B. Stapes is smallest bone of the face
- C. Lacrimal is smallest bone of the body
- D. Mandible is the longest bone of the face

Answer: D



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21. Identify the correct match from the following

A. Acetabulum - Pectoral girdle

B. Glenoid cavity - Pelvic girdle

C. Centrum - Vertebrae

D. Manubrium - Ribs

Answer: C



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22. Sprain is due to excessive pulling of

A. Tendon

B. Neuron

C. Muscle

D. Ligament

Answer: D



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23. Epiphyseal plate helps in the

- A. thickness of bone
- B. elongation of bone
- C. formation of bone
- D. all of these

Answer: B



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24. The lower jaw of mammals is made up of

A. dentary

B. maxilla

C. angular

D. articular

Answer: A



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25. Greater trochanter and lesser trochanter occur in

A. Humerus

B. Femur

C. Radio-ulna

D. Tibio-fibula

Answer: B



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26. Standing on tip toe is example of

A. Elevation

B. Flexion

C. Depression

D. Retraction

Answer: A



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27. The thumb is also known as

A. Hallux

B. Prehallux

C. Calcar

D. Pollex

Answer: D



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28. What will happen if ligaments are torn?

A. bones will be move freely at joints. & no pain

B. bone will be less movable at joint & painful

C. bone will become unfixed

D. bone will become fixed

Answer: B



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29. Identify the incorrect combination

- A. Incus-modified quadrate
- B. Stapes-modified hyoid
- C. Malleus-modified articular
- D. Patella-ossified tendon

Answer: B



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30. The major constituent of vertebrate bone is

A. Calcium phosphate

B. Sodium chloride

C. Calcium carbonate

D. Collagen

Answer: A



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31. The bones involved in the formation of hard palate are

- A. Mandible and nasal conchae
- B. Maxillae and palatines
- C. Lacrimals and zygomatics
- D. Vomer and nasals

Answer: B



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32. Which of the following is a sesamoid bone?

A. Clavicle

B. Pisiform

C. Femur

D. Pterygoid

Answer: B



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33. Bone formed by ossification of tendon is

A. Zygomatic

B. Vomer

C. Patella

D. Coccyx

Answer: C



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34. The smallest bone in the body helps in

A. Haemopoiesis

B. Protection to delicate parts

C. Transmission of sound waves

D. Providing surface for attachment of muscles

Answer: C



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35. The sesamoid bone in the wrist is

A. Scaphoid

B. Pisiform

C. Lunate

D. Trapezium

Answer: B



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36. The number of phalanges in the index finger is

A. 2

B. 1

C. 4

D. 3

Answer: D



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37. Number of phalanges in the thumb is

A. Three

B. One

C. Fow

D. Two

Answer: D



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38. The unpaired process of a typical vertebra of man is

- A. Spinous process
- B. Superior articular process
- C. Transverse process
- D. Inferior articular process

Answer: A



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39. The bone of the upper limb with a deltoid tuberosity is

- A. Radius
- B. Pisiform
- C. Ulna
- D. Humerus

Answer: D



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40. A bone that is formed within the mesenchyme is called

A. Endochondral bone

B. Replacing bone

C. Sesamoid bone

D. Dermal bone

Answer: D



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41. The vertebra that bears the dens is

A. Atlas

B. Axis

C. C3

D. C7

Answer: B



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42. Yellow bone marrow is found especially in the medullary cavity of

- A. Short bones
- B. Spongy bones
- C. Long bones
- D. All of these

Answer: C



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43. Talus is a/an

A. Ankle bone

B. Collar bone

C. Wrist bone

D. Palm bone

Answer: A



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44. The membrane bone in the appendicular skeleton is

A. Clavicle

B. Parietal

C. Scapula

D. Humerus

Answer: A



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45. If a bone splinters at the site of impact and smaller bone fragments lie between the two main fragments, it is called

- A. compound fracture
- B. impacted fracture
- C. stress fracture
- D. comminuted fracture

Answer: D



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46. Sharpey's fibres, are composed of

A. Collagen

B. Elastin

C. Gelatin

D. Chitin

Answer: A



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47. A lateral deviation of the alignment of the vertebral column is called

A. Kyphosis

B. Scoliosis

C. Lordosis

D. Cyanosis

Answer: B



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48. 'Soft spots' in the skull of a new-born infant are

A. Sutures

B. Fontanelles

C. Foramina

D. Facets

Answer: B



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Exercise II Joints

1. Which of the following is a cartilaginous joint?

A. Gomphosis

B. Suture

C. Syndesmosis

D. Symphysis

Answer: D



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2. Which of the following joints enable the palm to turn anteriorly and posteriorly is

A. Ball and socket joint between scapula and humerus

B. Saddle joint between the carpal and metacarpal of the thumb

C. Hinge joint between the capitulum of the humerus and the head of the radius

D. Pivot joint between the head of the radius and the radial notch of the ulna

Answer: D



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3. Which of the following is a ball and socket joint?

A. hip joint

B. elbow joint

C. atlanto-axial joint

D. knee joint

Answer: A



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4. The joint not associated with the upper limb bones of humans is

A. Condylloid joint

B. Synarthrosis

C. Saddle joint

D. Hinge joint

Answer: B



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5. Identify the set of fibrous joints from the following.

A. Condylloid, Pivot, gomphosis

B. Synchondrosis, syndesmosis, ball and socket

C. Gomphoses, sutures, syndesmoses

D. Hinge joint, saddle joint, gliding joint

Answer: C



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6. Consider the following four statements (P-Q) related to synovial joints and select the correct option stating which ones are true (T)

and which ones are false.(F). P) Hip joint is a ball and socket joint Q)Joint between radius and ulna in the forearm is a hinge joint R)Joint between occipital and first vertebrae is a pivot joint S) Joint between carpal and metacarpal of a thumb is a saddle joint

A.

<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>
<i>T</i>	<i>T</i>	<i>T</i>	<i>T</i>

B.

<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>
<i>F</i>	<i>F</i>	<i>F</i>	<i>F</i>

C.

<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>
<i>T</i>	<i>F</i>	<i>T</i>	<i>F</i>

D.

<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>
<i>T</i>	<i>F</i>	<i>F</i>	<i>T</i>

Answer: D



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7. Identify the correct the statement

- A. All amphiarthroses are fibrous joints
- B. All synovial joints are amphiarthroses
- C. All cartilaginous joints are synarthroses
- D. All sutures are synarthroses

Answer: D



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8. Which of the following are amphiarthroses?

A. Sutures, gomphoses, synchondroses

B. Pivot, hinge, saddle

C. Syndesinoses, symphyses

D. Gliding joints, condyloid joints

Answer: C



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9. Which of the following lubricates ligament and tendon and is the important constituent of synovial fluid?

A. Chitin

B. Lipids

C. Hyaluronidase

D. Hyaluronic acid

Answer: D



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10. Joint that produces an angular motion and permits only flexion and extension is

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

Answer: B



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11. joint where synovial capsule and synovial fluid are lacking is

- A. Intercarpal joint
- B. Pubic symphysis
- C. Interphalangeal joint
- D. Hip joint

Answer: B



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12. Which of the following has more number of joints?

A. Pectoral girdle

B. Pelvic girdle

C. Mandible

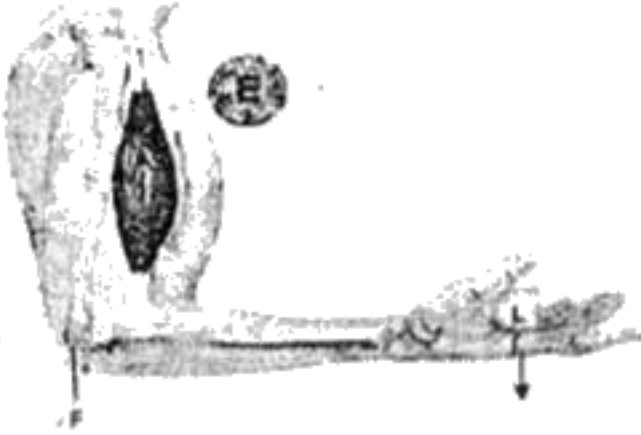
D. Cranium

Answer: D



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13. The following figure illustrates



- A. Second class lever, F = hinge joint
- B. Third class lever, F = hinge joint
- C. Third class lever, E = hinge joint
- D. First class lever, L = gliding joint

Answer: B



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14. How many saddle joints can be traced in human limbs?

A. 2

B. 4

C. 8

D. 10

Answer: A



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Exercise II Disorders Of Muscular And Skeletal Systems

1. Bone matrix is affected in

- A. Osteoporosis
- B. Hyperparathyroidism
- C. Osteomalacia
- D. All the above.

Answer: D



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2. Gout disease in humans is due to

- A. Excessive production of uricase
- B. Impaired catabolism of pyrimidines
- C. Excessive excretion of uric acid
- D. Excessive catabolism of purines

Answer: D



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Exercise Iii Previous Aipmt Neet Questions

1. Out of 'X' pairs of ribs in humans only 'Y' Pairs are true ribs. Select the option that correctly represents values of X and Y and provides their explanation.

A. $X = 12$, $Y = 7$ True ribs are attached dorsally to vertebral column and ventrally to the sternum.

B. $X = 12$, $Y = 5$ True ribs are attached dorsally to vertebral column and sternum on the two ends

C. $X = 24$, $Y=7$ True ribs are dorsally attached to vertebral column but are free on ventral side.

D. $X = 24$, $Y = 12$ True ribs are dorsally attached to vertebral column but are free on ventral side.

Answer: A



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2. Lack of relaxation between successive stimuli in sustained muscle contraction is known as

A. spasm

B. fatigue

C. tetanus

D. tonus

Answer: C



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3. It is much easier for a small animal to run uphill than for a large animal, because

A. It is easier to carry a small body weight

B. Smaller animals have a higher metabolic rate

C. Small animals have a lower O₂ requirement

D. The efficiency of muscles in large animals
is less than in the small animals

Answer: B



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4. Name the ion responsible for unmasking of
active sites for myosin for cross-bridge activity
during muscle contraction

A. Calcium

B. Magnesium

C. Sodium

D. Potassium

Answer: A



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5. Osteoporosis, an age-related disease of skeletal system, may occur due to

A. immune disorder affecting

neuromuscular junction leading to

fatigue

B. high concentration of Ca^{++} and

Na^{++}

C. decreased level of estrogen

D. accumulation of uric acid leading to

inflammation of joints

Answer: C



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6. Which of the following is not a function of the skeletal system?

A. Production of body heat

B. Locomiction

C. Production of erythrocytes

D. Storage of minerals

Answer: A



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7. Which of the following joints would allow no movement?

- A. Synovial joint
- B. Ball and socket joint
- C. Fibrous joint
- D. Cartilaginous joint

Answer: C



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8. Sliding filament theory can be best explained as

A. actin and myosin filaments do not shorten but rather slide past each other

B. when myofilaments slide past each other myosin filaments shorten while actin filaments do not shorten

C. when myofilaments slide past each other actin filaments shorten while myosin filaments do not shorten

D. actin and myosin filaments shorten and slide past each other

Answer: A



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9. Glenoid cavity articulates

- A. clavicle with scapula
- B. humerus with scapula
- C. clavicle with acromion

D. scapula with acromion

Answer: B



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10. Select the correct matching of the type of the joint with the example in human skeletal

system.

	Type of joint	Example
1)	Cartilaginous joint	between frontal and parietal
2)	Pivot joint	between third and fourth cervical vertebrae
3)	Hinge joint	between humerus and pectoral girdle
4)	Gliding joint	between carpals



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11. Stimulation of a muscle fiber by a motor neuron occurs at

A. the neuromuscular junction

B. the transverse tubules

C. the myofibril

D. the sarcoplasmic reticulum

Answer: A



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12. Select the correct statement with respect to locomotion in humans

A. The vertebral column has 10 thoracic vertebrae

B. The joint between adjacent vertebrae is a fibrous joint

C. A decreased level of progesterone causes osteoporosis in old people

D. Accumulation of uric acid crystals in joints causes their inflammation

Answer: D



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13. The H-zone in the skeletal muscle fiber is due

A. The central gap between actin filaments extending through myosin filaments in the A-b and

B. Extension of myosin filaments in the central portion of the A-band

C. The absence of myofibrils in the central portion of A-band

D. The central gap between myosin filaments in the A-band

Answer: A



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14. The characteristic and an example of a synovial joint in humans is

	Characteristics	Examples
1)	Fluid filled synovial cavity between two bones	Joint between atlas and axis
2)	Lymph filled between two bones, limited movement	Gliding joint between carpals
3)	Fluid cartilage between two bones, limited movements	Knee joint
4)	Fluid filled between two joints, provides cushion	Skull bones



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15. During muscle contraction in humans, the

A. Sarcomere does not shorten

B. A band remains same

C. A, H and I bands shorten

D. actin filaments shorten

Answer: B



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16. Select the correct statement with respect to disorders of muscles in humans.

- A. Failure of neuromuscular transmission in myasthenia gravis can prevent normal swallowing
- B. Accumulation of urea and creatine in the joints causes their inflammation.
- C. An overdose of vitamin D causes osteoporosis.
- D. Rapid contractions of skeletal muscles cause muscle dystrophy.

Answer: A



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17. Select the correct statement regarding the specific disorder of muscular or skeletal system.

A. Muscular dystrophy - Age related shortening of muscles

B. Osteoporosis - Decrease in bone mass and higher chances of fractures with advancing age.

C. Myasthenia gravis - Autoimmune

disorder which inhibits sliding of myosin filaments.

D. Gout - Inflammation of joints due to extra deposition of calcium.

Answer: B



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18. Which one of the following pairs of chemical substances is correctly categorized?

A. Calcitonin and thymosin - thyroid hormones.

B. Pepsin and prolactin - two digestive enzymes secreted in stomach.

C. Troponin and myosin - complex proteins in striated muscles.

D. Secretin and rhodopsin - polypeptide hormones

Answer: C



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19. The type of muscle present in our

A. Heart is involuntary and unstriated smooth muscle

B. Intestine is striated and involuntary

C. Thigh is striated and voluntary

D. Upper arm is smooth muscle and fusiform

Answer: C



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20. Three of the following pairs of the human skeletal parts are correctly matched with their respective inclusive skeletal category and one pair is not matched. Identify the non-matching

pair.

Pair of skeletal part	Category
1) Sternum and ribs	Axial skeleton
2) Clavicle and glenoid cavity	Pelvic girdle
3) Humerus and ulna	Appendicular skeleton
4) Malleus and stapes	Ear ossicles



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21. Which one of the following pairs of structures is correctly matched with their

corrected description?

	Structures	Description
1)	Tibia and fibula	Both form parts of knee joint
2)	Cartilage and cornea	No blood supply but do require oxygen for respiratory need
3)	Shoulder joint and elbow joint	Ball and socket type of joint
4)	Premolars and molars	20 in all and 3 rooted



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22. Which one of the following is the correct description of a certain part of a normal human skeleton?

- A. Parietal bone and the temporal bone of the skull are joined by fibrous joint
- B. First vertebra is axis which articulates with the occipital condyles
- C. The 9th and 10th pairs of ribs are called floating ribs
- D. Glenoid cavity is a depression to which the thigh bone articulates

Answer: A



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23. Which one of the following is the correct matching of three items and their grouping category?

	Items	Group
1)	Ilium, ischium, pubis	coxal bone of pelvic girdle
2)	Actin, myosin, rhodopsin	muscle proteins
3)	Cytosine, uracil, thiamine	pyrimidines
4)	Malleus, incus, cochlea	ear ossicles



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24. Elbow joint is an example for

A. hinge joint

B. gliding joint

C. ball and socket joint

D. pivot joint

Answer: A



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25. Which one of the following items gives its correct total number?

A. Types of diabetes - 3

B. Cervical vertebrae in humans - 8

C. Floating ribs in humans - 4

D. Amino acids found in proteins - 16

Answer: C



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26. In human body, which one of the following is anatomically correct?

- A. Collar bones - 3 pairs
- B. Salivary glands - 1 pair
- C. Cranial nerves - 10 pairs
- D. Floating ribs - 2 pairs

Answer: D



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