BIOLOGY

BOOKS - MTG BIOLOGY (ENGLISH)

LOCOMOTION AND MOVEMENT

Mcqs

1. Read the following statements and select the correct option.

Statement 1: Locomotion is the movement of an indvidual from one place to another.

Statement 2: All movents are locomotions are but all locomotions are not movements .

A. Both statement 1 and 2 are correct.

B. Statement 1 is correct but statement 2 is incorrect

C. Statement 1 is incorrect but statement 2 is correct.

D. Both statement 1 and 2 are incorrect.

Answer: B

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2. Microfilaments are involed in

A. amoebiod movement

B. ciliary movement

C. muscular movement

D. both (a) and (b)

Answer: A

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3. The amoeboid movement results from

A. interaction among actin, myosin and ATP, etc.

B. coordinated beats of cilia

C. whip like action of flagella

D. action by the mitotic spindle, similar to what happens during mitosis and meiosis.

Answer: A

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4. Passage of ova through female reproductive tract is facilitated by

A. ciliary movement

B. amoeboid movement

C. flagellar movement

D. cyclosis.

Answer: A

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5. Match coloum I with coloum II select the correct option from the codes given below.

Column I		Column II	
A.	Amoeboid movement	(i)	Limbs
B.	Ciliary movement	(ii)	Leucocytes
C.	Flagellar movement	(iii)	Trachea
D	Muscular movement	(iv)	Spermatozoa

A. $\begin{matrix}(\mathrm{A}) & (B) & (C) & (D) \\ (\mathrm{iii}) & (ii) & (i) & (iv)\end{matrix}$

B. $\begin{matrix}(\mathrm{A}) & (B) & (C) & (D) \\ (\mathrm{ii}) & (iii) & (iv) & (i)\end{matrix}$

C. $\begin{matrix}(\mathrm{A}) & (B) & (C) & (D) \\ (\mathrm{i}) & (ii) & (iii) & (iv)\end{matrix}$

D. $\begin{matrix}(\mathrm{A}) & (B) & (C) & (D) \\ (\mathrm{iv}) & (ii) & (i) & (iii)\end{matrix}$

Answer: B

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6. The type of muscle present in our

A. heart is involuntary and unstirated smooth

B. intestine is striated and involuntary

C. thigh is striated and voluntary

D. upper arm is smooth muscle and fusiform in

Answer: C

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7. Which of the following is the most abundant mineral element in the skeletal muscle ?

A. Sodium

B. Calcium

C. Potassium

D. Phosphorous

Answer: C

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8. The type of muscle fibre present in the wall of alimentary canal is

A. Smooth muscle fibre

B. striped muscle fibre

C. cardiac muscle fibre

D. both (a) and (b)

Answer: A

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9. Read the following statements carefully and select the correct ones.

Cardiac fibre are branched with one or more nuclei.

(ii) Smooth muscles are unbranched and cylinedrical.

(iii) Skeletal muscle can be branched or unbranched.

(iv) Smooth muscle are non-striated.

A. Only (IV)

B. (ii) and (iii)

C. (iii) and (iv)

D. only (iii)

Answer: A

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10. Which of the following statements is incorrect ?

A. Smooth muscle are found in urinary bladdedr, alimentary canal and genital tract.

B. A striated muscle is a syncytium i.e., a multinucleate structure.

C. The cytoplasm of striated muscle is called endoplasm.

D. The plasma membrane and ER of striated muscles are called sarcoplasmic reticulum respectively.

Answer: C

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11. Dark bands are

A. A-band

B. B-band

C. I-band

D. Ziline.

Answer: A

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12. What is 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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13. The functional unit of contractile system in a striated muscle is

A. sarcomere

B. Z-band

C. cross bridges

D. nyofibril.

Answer: A

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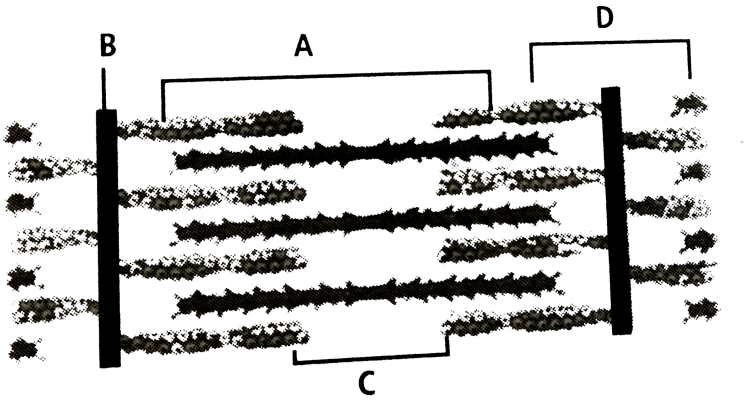
14. Given below is the figure of a sarcomere. Identify the parts labelled as A to D and select the correct option.



A. $\begin{matrix}(\mathrm{A}) & (B) & (C) & (D)\\ (\mathrm{A\text{-}band}) & (Z-\mathrm{line}) & (H-\mathrm{zone}) & (I-\mathrm{band})\end{matrix}$

B. $\begin{matrix}(\mathrm{A}) & (B) & (C) & (D)\\ (\mathrm{A\text{-}band}) & (H-\mathrm{line}) & (Z-\mathrm{zone}) & (I-\mathrm{band})\end{matrix}$

C. $\begin{matrix}(\mathrm{A}) & (B) & (C) & (D)\\ (\mathrm{I\text{-}band}) & (H-\mathrm{line}) & (Z-\mathrm{zone}) & (A-\mathrm{band})\end{matrix}$

D. $\begin{matrix}(\mathrm{A}) & (B) & (C) & (D)\\ (\mathrm{I\text{-}band}) & (Z-\mathrm{line}) & (H-\mathrm{zone}) & (A-\mathrm{band})\end{matrix}$

Answer: A

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15. Which of the following statements about the striated muscle is incorrect

A. In the centre of each I-band is an elastic (Z-line) which bisects it.

B. Thin filaments are firmly attached to the Z-line.

C. M-line is a fibrous membrane in the middle of A-bands.

D. none of these

Answer: D

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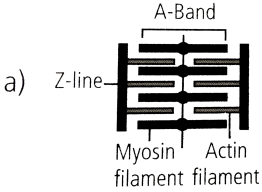
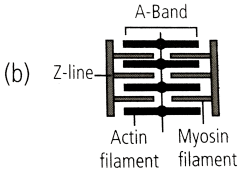
16. Which of the following sarcomeres is lablled correctly ?

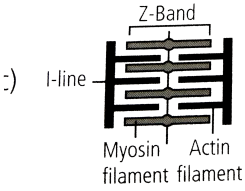
A.



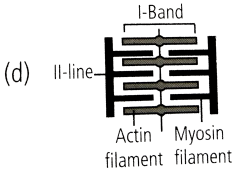
B.



C.



D.



Answer: A

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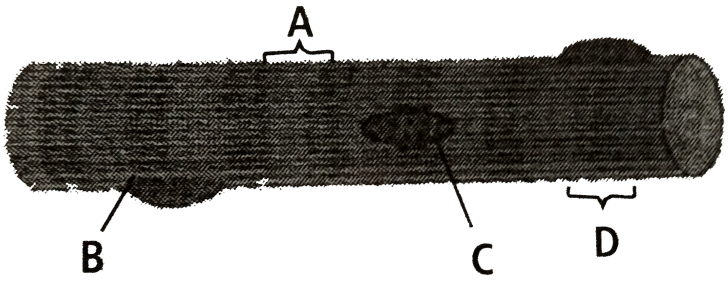
17. The given figure represents the histology of of a striated muscle. Identify the parts labelled as A, B, C and D, and select the correct option.



A. (A) (Sarcoplasm) (B) (Sarcolemma) (C) (Dark band) (D) (Light band)

B. (A) (Dark band) (B) (Myofibril) (C) (Nucleus) (D) (Light band)

C. (A) (Light band) (B) (Myofibril) (C) (Nucleus) (D) (Dark band)

D. (A) (Nucleus) (B) (Dark band) (C) (Light band) (D) (Myofibril)

Answer: C

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18. Match coloum I with coloum II and select the correct option from the codes given below.

	Column I		Column II
A.	Structural and functional unit of a myofibril	(i)	H-zone
B.	Protein of thin filament	(ii)	Myosin
C.	Protein of thick filament	(iii)	Sarcomere
D.	The central part of thick	(iv)	Actin

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

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

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

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

Answer: D

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19. Read the given statements and select the correct option.

Statement 1: A primary myofilament is composed of a bundle of rod-like molecules of a protein myosin.

Statement 2: Myosin and actin together a form a contractile apparatus.

A. Both statement 1 and 2 are correct.

B. Statement 1 is correct but statement 2 is incorrect

C. Statement 1 is incorrect but statement 2 is correct.

D. Both statement 1 and 2 are incorrect.

Answer: A

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20. Which of the following contractile proteins contributes 55% of muscle protein by weight?

A. Tropomyosin

B. Troponin

C. Myosin

D. Actin

Answer: C

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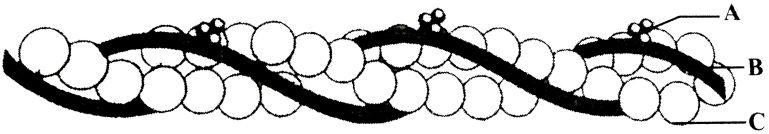
21. The given figure shows an actin (thin) filament. Identify the labelled parts A, B, and C and select the correct option.



A. $\underset{(\text{Tropomyosin})}{(\text{A})} \quad \underset{(\text{Troponin})}{(B)} \quad \underset{(\text{F-actin})}{(C)}$

B. $\underset{(\text{Troponin})}{(\text{A})} \quad \underset{(\text{Myosin})}{(B)} \quad \underset{(\text{Tropomyosin})}{(C)}$

C. $\underset{(\text{Troponin})}{(\text{A})} \quad \underset{(\text{Tropomyosin})}{(B)} \quad \underset{(\text{Myosin})}{(C)}$

D. $\underset{(\text{Troponin})}{(\text{A})} \quad \underset{(\text{Tropomyosin})}{(B)} \quad \underset{(\text{F-actin})}{(C)}$

Answer: D

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22. Fill up the blanks in the following sentence by selecting the correct option.

A. $\begin{matrix}(\mathrm{A}) & (B) & (C) \\ (1\mathrm{F}) & (\text{troponin}) & (\text{tropomyosin})\end{matrix}$

B. $\begin{matrix}(\mathrm{A}) & (B) & (C) \\ (1\mathrm{F}) & (\text{tropomyosin}) & (\text{troponin})\end{matrix}$

C. $\begin{matrix}(\mathrm{A}) & (B) & (C) \\ (2\mathrm{F}) & (\text{troponin}) & (\text{tropomyosin})\end{matrix}$

D. $\begin{matrix}(\mathrm{A}) & (B) & (C) \\ (2\mathrm{F}) & (\text{tropomyosin}) & (\text{troponin})\end{matrix}$

Answer: D

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23. Actin binding sites are located on

A. troponin

B. tropomyosin

C. meromyosin

D. bith (b) and (c).

Answer: C

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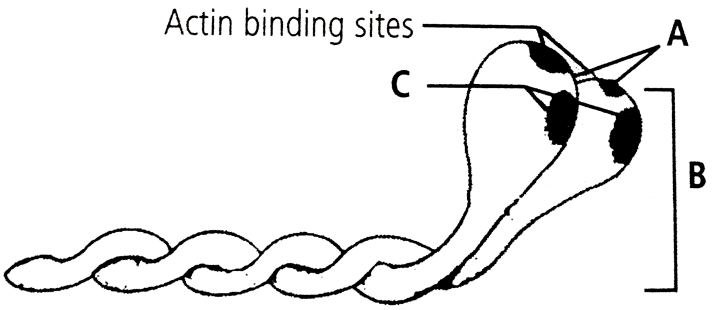
24. The given figure is related with myosin monomer (meromyosis). Identify the parts labelled from A to C and select the correct option .



A. (A) (B) (C)
(Head) $(\mathrm{Cross\ arm})$ $(\mathrm{GTP\ binding\ sites})$

B. (A) (B) (C)
$(\mathrm{Cross\ arm})$ (Head) $\left(Ca^{+2}\mathrm{binding\ sites}\right)$

C. (A) (B) (C)
(Head) $(\mathrm{Cross\ arm})$ $(\mathrm{ATP\ binding\ sites})$

D. (A) (B) (C)
(Cross) (Head) $(\mathrm{ATP\ binding\ sites})$

Answer: C

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25. Which of the following statements are correct regarding muscle proteins ?

(i) Actin is a thin filament and is mde up to two F-actin

(ii) The complex protein, tropomyosin is distributed at regular intervals on the troponin

(iii) Myosin is a thick filament which is also a polymerised protein.

(iv) The globular head of meromyosin consists of light meromyosin (LMM).

A. (i), (ii) and (iii)

B. (i), (ii) and (iv)

C. (i) and (iii)

D. (ii) and (iv)

Answer: C

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26. Which of the following statements about the molecular arrangement of actin and mysin In myofibre is/are incorrect ?

(i) Each actin (thin filament) is made of 2F (filamentous) actins.

(ii) F-actin is the polymer of G (globular) actin.

(iii) 2F0actins are twisted into a helix.

(iv) Two strands of tropomyosin (protein) lie in the grooves of F-actin.

(v) Troponin molecules (complex proteins) are distributed at regular intervals on the tropomyosin.

(vi) Troponin forms the head of the myosin molecule.

(vii) The myosin is a polymerised protein.

A. (i), (iii) and (vii)

B. (ii), (iv) and (v)

C. Only (vi)

D. Only (iii)

Answer: C

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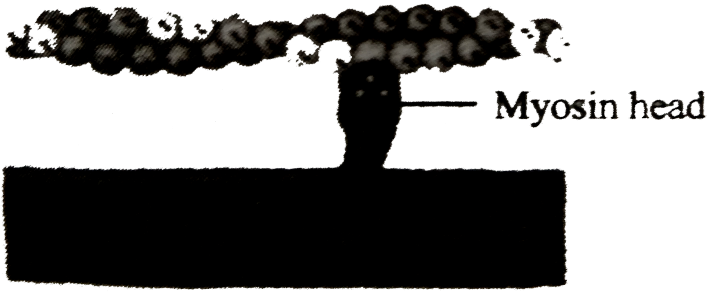
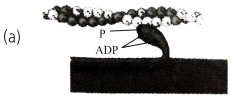
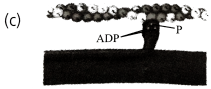
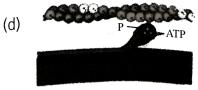
27. Which one of the following options shows the next stage of muscle contraction after the stage given in question ?



A. 

B. 

C. 

D. 

Answer: A

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28. During muscular contraction, which of the following events occur?

(i)H-zone disappears

(ii) A-band widens

(iii) I-band reduces in width

(iv) Width of A-is unaffected

(v) M-line and Z-line come closer

A. (i), (iii), (iv) and (v)

B. (i), (ii) and (v)

C. (ii), (iv) and (v)

D. (i), (ii) and (iii)

Answer: A

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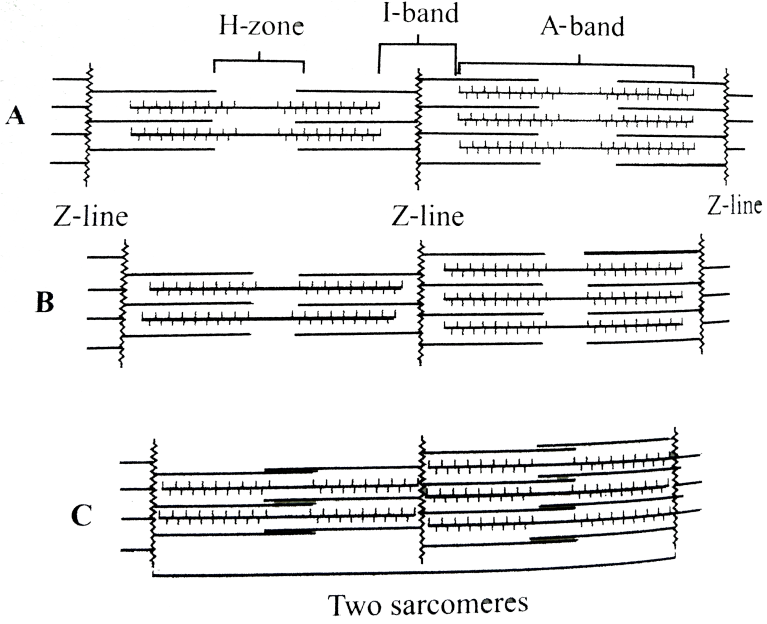
29. The figures given here repesent three diferent conditions of sarcomeres. Identify these conditions and select the correct option



A. (A) (Contractin) (B) (Relaxed) (C) (Maximally contracted)

B. (A) (Relaxed) (B) (Contracting) (C) (Maximally contracted)

C. (A) (Maximally contracted) (B) (Contracting) (C) (Relaxed)

D. (A) (Relaxed) (B) (Contracted) (C) (Contracting)

Answer: B

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30. Following is given a randomly arranged list of events that occur at neuromuscluar junction to trigger mucle contraction.

(i) Receptor sites on sarcolemma

Nerve impulse

(iii) Release of Ca^{+2} from sarcoplasmic reticulum

(iv) The neurotransmitter acetylcholine is released

(v) Sarcomere shorten (vi) Synaptic cleft

(vii) Spread of impulses over sarcolemmna on T-tubules Which of the following gives the correct sequence of these steps?

A. $(ii) \rightarrow (iv) \rightarrow (i) \rightarrow (vi) \rightarrow (vii) \rightarrow (iii) \rightarrow (v)$

B. $(ii) \rightarrow)(iv) \rightarrow (vi) \rightarrow (i) \rightarrow (vii) \rightarrow (iii) \rightarrow (v)$

C. $(i) \rightarrow (ii) \rightarrow (iii) \rightarrow (iv) \rightarrow (v) \rightarrow (vi) \rightarrow (vii)$

D. $(vii) \rightarrow (vi) \rightarrow (v) \rightarrow (iv) \rightarrow (iii) \rightarrow (ii) \rightarrow (i)$

Answer: B

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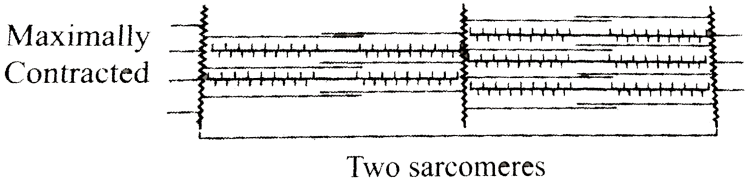
31. Which of the following is correct regarding changes in muscle fibre from relaxed to contracted state in the given figure ?



Two sarcomeres

A. The length of the thick and thin myofilaments has changed.

B. length of both anisotropic and isotropic band has changed.

C. The myosin cross-bridges move on the surface of actin and the thin and thick myofilaments slide past each other.

D. length of the sarcomere remain same.

Answer: C

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32. In a muscle undergoes rapid contraction and relaxation, the sarcoplasmic reticulum extension

A. requires constant plugging in and out of $Ca \wedge (2+)$

B. rapidly synthesise myosin

C. does not require energy

D. all of these

Answer: A

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33. Consider the following statements each with one or two blanks.

(i) Repeated activation of the muscle can lead to the accumulation of (A) due to anaerobic breakdown of glycogen in them, causing fatigue.

(ii) The globular head of meromyosin is an active ATPase enzyme and has binding sites for (B) active sites for (C) .

This centre part of thick filament, not overlapped by thin filaments is called the (D) .

Which one of the following options correctly fils the concerned blanks ?

A. (A)-glucose, (D)-A-band

B. (A)-pyruvic acid, (B)-troponin, (C)-myosin

C. (B)-ATP, (C)-actin, (D)-H-zone

D. (A)-lactic acid, (D)-I-band

Answer: C

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34. Which of the following statements about the mechanism of muscle contraction are correct ?

(i) Acetylcholine is released when the neural signal reaches the motor end plate.

(ii)Muscle contraction is initiated by a signal sent by CNS via sensory neuron.

(iii) During muscle contraction, isotropic band gets elongated

(iv) Repeated activation of the muscles can lead to lactic acid accumulation.

A. (i) and (iv)

B. (i) and (iii)

C. (ii) and (iii)

D. (i), (ii) and (iii)

Answer: A

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35. The slow twitch muscle fibre which are rich in myoglobin and have abundant mitochondria are

A. white skeletal muscles

B. cardiac muscles

C. red skeletal muscles

D. involuntary muscles.

Answer: C

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36. Identify from the following list, the characteristics of red muscles (A) and white muscles (B) and select the option that correctly segregates the characters.

(i) Less number of mitochondria

(ii) More number of mitochondria

(iii) Sarcoplasimic reticulum is abundant (iv) Myolobin content high

(v) Sarcoplamic reticulum moderate

(vi) Aerobic muscles

(vii) Depend on anaerobic respiration for energy

(viii) Less myoglobin content

A. $\underset{(\mathrm{i}).(\mathrm{iii}).(\mathrm{vii}).(\mathrm{viii})}{(A)}$ $\underset{(\mathrm{ii}).(\mathrm{iv}).(\mathrm{v}).(\mathrm{vi})}{(B)}$

B. $\underset{(\mathrm{ii}).(\mathrm{iv}).(\mathrm{v}).(\mathrm{vi})}{(A)}$ $\underset{(\mathrm{i}).(\mathrm{iii}).(\mathrm{vii}).(\mathrm{viii})}{(B)}$

C. $\underset{(\mathrm{i}).(\mathrm{iii}).(\mathrm{iv}).(\mathrm{vii})}{(A)}$ $\underset{(\mathrm{ii}).(\mathrm{v}).(\mathrm{vi}).(\mathrm{viii})}{(B)}$

D. $\underset{(\mathrm{ii}).(\mathrm{v}).(\mathrm{vi}).(\mathrm{viii})}{(A)}$ $\underset{(\mathrm{i}).(\mathrm{iii}).(\mathrm{iv}).(\mathrm{vii})}{(B)}$

Answer: B

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37. Myoglobin is present in

A. alll muscle fibres

B. white muscle fibre

C. red muscle fibre

D. none of these.

Answer: A

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38. Which of the following is a source of energy for muscle contraction ?

A. Actin

B. ATP

C. Myosin

D. Actomyosin

Answer: B

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39. The protien whose removal enables myosin to bind actin in smooth muscle is

A. tropomyosin

B. caldesmon

C. myosin light chain kinase

D. calmodulin.

Answer: A

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40. During muscle contraction, actin and myosin ffrom

A. actomyosin

B. actoplasm

C. plastosine

D. myoplasm.

Answer: A

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41. Which of the following ions help in muscle contraction ?

A. K^+ and Mg^{++}

B. Na^+ and K^+

C. Ca^{++} and Na^{++}

D. Ca^{++} and Mg^{++}

Answer: D

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42. If a stimulus, several times greater than the threshold stimulus, is provided to a musclw fibre, it will

A. contract with a larger force

B. contract wit a smaller force

C. contract with the same force

D. undergo tetany.

Answer: C

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43. Which of the following is incorrect regarding muscle contraction?

A. Actin and myosin make actomyosin.

B. Phosphate reserve comes from phosphocreatine.

C. Chemical energy is converted into mechanical energy.

D. Mechanical energy is converted into chemical energy

Answer: D

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44. Upon stimulation of skeletal muscles, calcium is immediately made available for binding to troponin from

A. blood

B. lymph

C. sarcoplasmic reticulum

D. bone.

Answer: C

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45. In the resting muscle fibre, tropomysin partially covers

A. calcium binding sites on troponin

B. actin binding sites on myosis

C. muyosin binding sites on actin

D. calcium binding sites on actin.

Answer: C

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46. Ends of long bones are covered with

A. blood cells

B. muscles

C. cartilages

D. ligaments.

Answer: C

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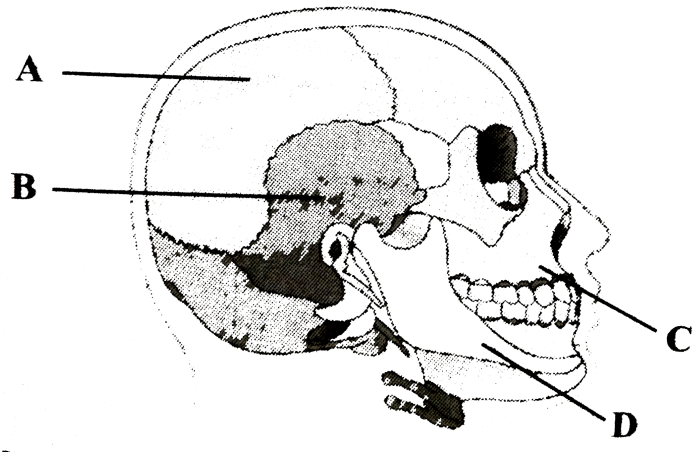
47. Examine the given diagrammatic view of human skull given below and identify the skull bones labelled from A-D.



A. $\begin{matrix} A & B & C & D \\ \text{Frontal} & \text{Temporal} & \text{Maxilla} & \text{Mandible} \end{matrix}$

B. $\begin{matrix} A & B & C & D \\ \text{Occipital} & \text{Frontal} & \text{Mandible} & \text{Maxilla} \end{matrix}$

C. $\begin{matrix} A & B & C & D \\ \text{Parietal} & \text{Temporal} & \text{Maxilla} & \text{Mandible} \end{matrix}$

D.

A	B	C	D
Temporal	Parietal	Mandible	Maxilla

Answer: C

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48. Which of the following is a bone of skull?

A. Atlas

B. Patella

C. Ethmoid

D. Phalanges

Answer: C

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49. Cranium of human contains

A. 8 bones

B. 14 bones

C. 12 bones

D. 20 bones.

Answer: A

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50. How many bones from the skeleton of the face ?

A. 22

B. 8

C. 10

D. 14

Answer: D

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51. In an adult human, how many bones are present as ear ossicles ?

A. 4

B. 6

C. 3

D. none of these

Answer: B

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52. Smallest bone in human system is

A. stapes

B. patella

C. malleus

D. incus.

Answer: A

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53. Skull of man is

A. monocondylic

B. dicondylic

C. tricondylic

D. tetracondylic.

Answer: B

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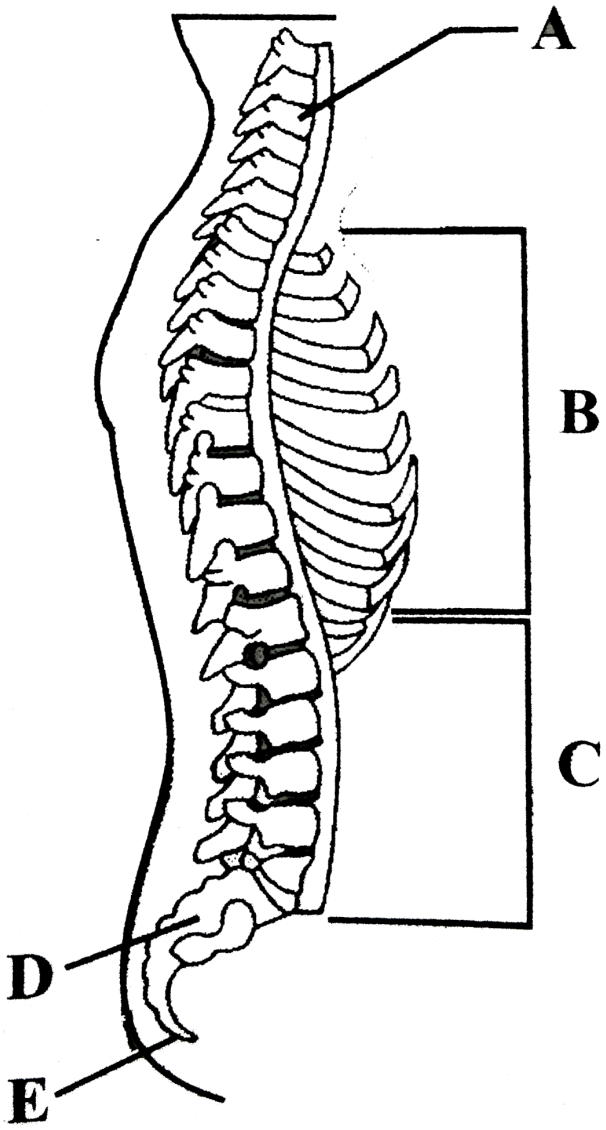
54. Identify the parts labelled as A to E in the given figure of a vertebral column and select the correct option.



A.

A	B	C	D
Thoracic vertebrae	Cervical vertebrae	Lumbar vertibrae	Sacrum

B.

A	B	C	D
Thoracic vertebrae	Cervical vertebrae	Lumbar vertibrae	Coccyx

C.

A	B	C	D
Lumbar vertebrae	Thoracic vertebrae	Cervical vertibrae	Coccyx

D.

A	B	C	D
Cervical vertebrae	Thoracic vertebrae	Lumbar vertibrae	Sacrum

Answer: D

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55. Number of cervical vertebrae in mammals are

A. 7

B. 6

C. 5

D. 11

Answer: A

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56. The cervical vertebra called axis provids head with sideways rotation. This can be because

A. It is articulated to skull through occipital condyles

B. it is fused with 1^{st} vertebra atlas

C. it is joined through elastic pads of fibrocartilage with other vertebrae, which provide mobility

D. it contains odontoid process that fits into the odontoid canal of atlas.

Answer: D

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57. Lumbar vertebrae are found in

A. neck region

B. abdominal region

C. hip region

D. thorax

Answer: B

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58. The vertebral column is connected to the pelvic girdle in the

A. coccygeal region

B. sacral region

C. lumbar region

D. cervical region.

Answer: B

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59. Human vertebral column consists of 33 vertebrae and _____bones.

A. 33

B. 26

C. 27

D. 29

Answer: B

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60. Which of the following vertebra is formed from four vertebrae ?

A. Sacrum

B. Coccyx

C. Atlas

D. Axis

Answer: B

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61. Which of the folowing is not a function of vertebral column ?

A. Protects spinal cord and supports the head

B. Severs as the point of attachment for ribs and musculature of the back

C. Supports tarsals and metacarpals

D. Both (b) and (c)

Answer: C

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62. Consider the following four statements (i)-(iv) and select the correct option.

(i) Actin is present in thin filament.

(ii) H-zone of striated muscle fibre represents both thick and thin filaments.

(iii) There are 11 pairs of ribs in man.

(iv) Sternum is present on ventral side of the body.

A. $\begin{matrix}(\mathrm{i}) & (\mathrm{ii}) & (\mathrm{iii}) & (\mathrm{iv}) \\ F & F & T & F\end{matrix}$

B. $\begin{matrix}(\mathrm{i}) & (\mathrm{ii}) & (\mathrm{iii}) & (\mathrm{iv}) \\ F & F & F & T\end{matrix}$

C. $\begin{matrix}(\mathrm{i}) & (\mathrm{ii}) & (\mathrm{iii}) & (\mathrm{iv}) \\ T & F & F & T\end{matrix}$

D. $\begin{matrix}(\mathrm{i}) & (\mathrm{ii}) & (\mathrm{iii}) & (\mathrm{iv}) \\ T & F & T & F\end{matrix}$

Answer: C

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63. 11^{th} and 12^{th} pair of ribs which are imperfectly formed and do not reach the sternum are called

A. Pseudo

B. fa,se ribs

C. floting ribs

D. visceral ribs.

Answer: C

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64. Match column I with column II and select the correct option from the codes given below.

Column I		Column II	
A.	True ribs	(i)	3 pairs
B.	False ribs	(ii)	2 pairs
C.	Floating ribs	(iii)	7 pairs
(a)	A-(i), B-(ii), C-(iii)	(b)	A-(iii), B-(i), C-(ii)
(c)	A-(iii), B-(ii), C-(i)	(d)	A- (ii), B- (i), C-(iii)

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

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

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

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

Answer: B

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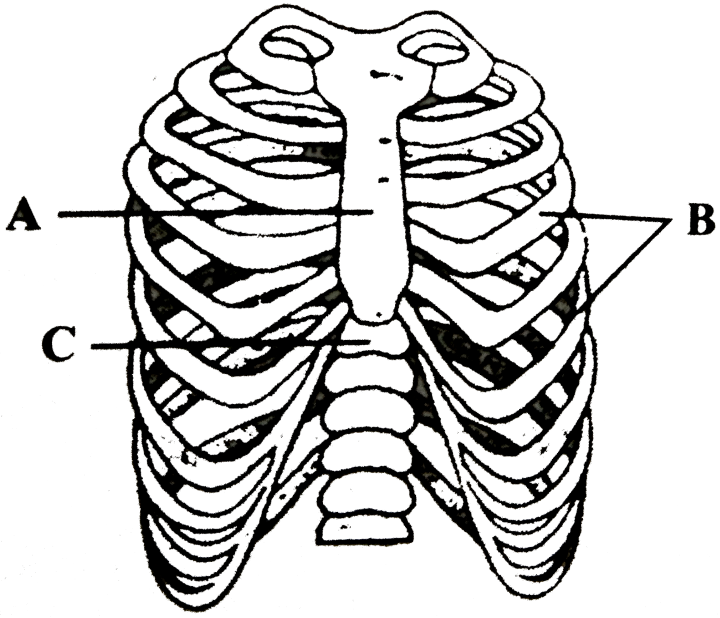
65. The figure given here is of rib cage. Identify the parts labelled as A, B and C and select the correct option .



A. (A) (B) (C)
Coccyx Ribs Vertebral column

B. (A) (B) (C)
Sternum Ribs Vertebral column

C. (A) (B) (C)
Scapula Ribs Vertebral column

D. (A) (B) (C)
Tarsal Ribs Vertebral column

Answer: B

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66. The scapula is a large triangular flat bone situated in the dorsal part of the thorax between

A. second and seventh rib

B. third and fourth rib

C. fifth and sixth rib

D. second and fifth rib.

Answer: A

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67. Appendicular skeleton includes

A. girdle and their limbs

B. vertebrae

C. skull and vertebral column

D. ribs and sternum.

Answer: A

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68. Total number of bones in the hindlimb of a man is

A. 24

B. 30

C. 14

D. 21

Answer: B

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69. Match column I with column II and select the correct option from the codes given below.

	Column I (Skeletal part)	Column II (Number of bones)
A.	Cranium	(i) 29
B.	Skull (Cranial and facial bones)	(ii) 8
C.	Face	(iii) 14
D.	Hind limb	(iv) 24
E.	Ribs	(v) 30

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

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

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

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

Answer: B

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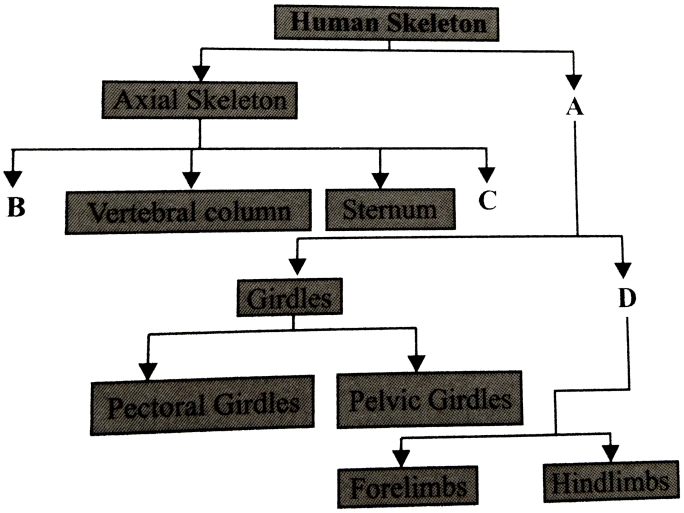
70. Study the following flowchart and fill up the blanks by selecting the correct option.



A. (A) (B) (C) (D)
Thoracic skeleton Limbs Skull Ribs

B. (A) (B) (C) (D)
Appendicular skeleton Skull Ribs Limbs

C. (A) (B) (C) (D)
Appendicular skeleton Limbs Ribs Skull

D. (A) (B) (C) (D)
Lumbar skeleton Limbs Skull Ribs

Answer: B

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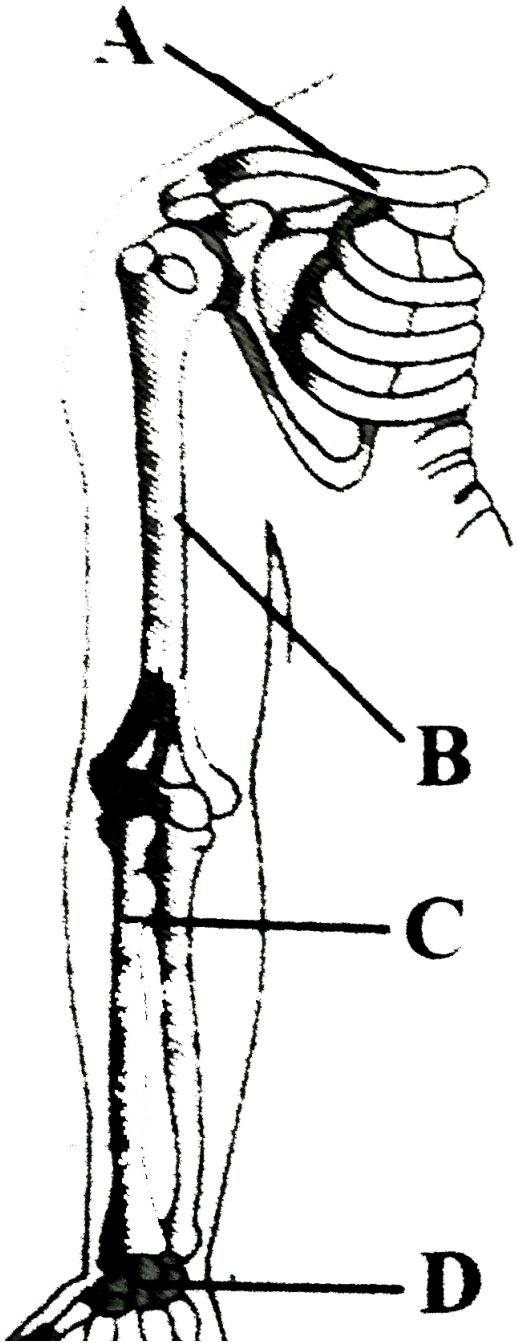
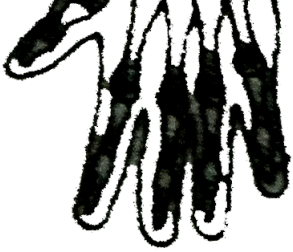
71. Examine the figure of pectoral girdle and forelimb and identify the parts labelled as A, B, C and D.





A. (A) Clavicle (B) Humerus (C) Radius (D) Carpals

B. (A) Scapula (B) Femur (C) Ulna (D) Tarsals

C. (A) Clavicle (B) Femur (C) Radius (D) Carpals

D. (A) Scapula (B) Humerus (C) Ulna (D) Tarsals

Answer: A

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72. Which of the following bones form a link between axial and appendicular skeleton ?

A. First rib

B. Clavicle

C. Scapula

D. both (a) and (b)

Answer: B

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73. Watch column I with column II and select the correct option from the codes given below.

Column I	Column II
A. Humerus	(i) Thigh
B. Pectoral girdle	(ii) Upper arm
C. Femur	(iii) Clavicle
	(iv) Acetabulum
	(v) Glenoid cavity
	(vi) Scapula

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

B. A-(ii), (iv), B-(iii), (vi), C-(iii), (v)

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

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

Answer: A

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74. Humerus with its rounded upper end (head) articulates into

A. acromion process

B. deltoid cavity

C. glenoid cavity

D. acetabulum.

Answer: C

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75. Acromion process is characteristacally found in the_____of mammals.

A. pectrol girdle

B. sperm

C. pelvic dirdle

D. skull

Answer: A

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76. Which of the following components is a part of the pectrol girdle ?

A. Sternum

B. Acetabulum

C. glenoid cavity

D. llium

Answer: C

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77. The shoulder blade is made of

A. clavicle

B. humerus

C. ilium

D. scapula.

Answer: D

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78. Identify the incorrectly matched pair.

A.

Pair of skeletal parts	Category
Sternum and ribs	Axial skeleton

B.

Pair of skeletal parts	Category
Clavicle and glenoid cavity	Pelvic girdlw

C.

Pair of skeletal parts	Category
Humerus and ulna	Appendicular skeleton

D.

Pair of skeletal parts	Category
Malleus and stapes	Ear ossicles

Answer: B

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79. Collar bone is known as

A. scapula

B. clavicle

C. pelvic girdle

D. chevron bone.

Answer: B

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80. Acetabulum is located in

A. collar bone

B. hip bone

C. shoulder bone

D. thigh bone.

Answer: B

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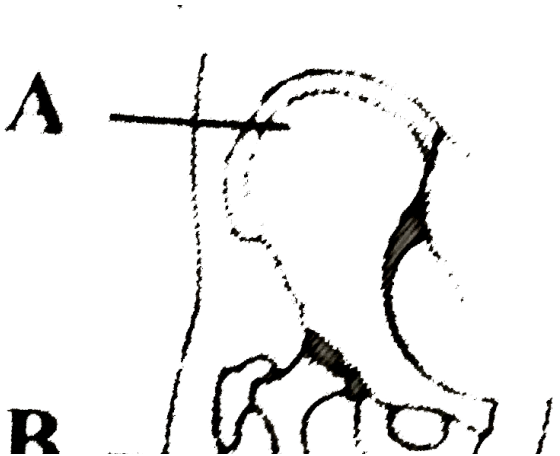
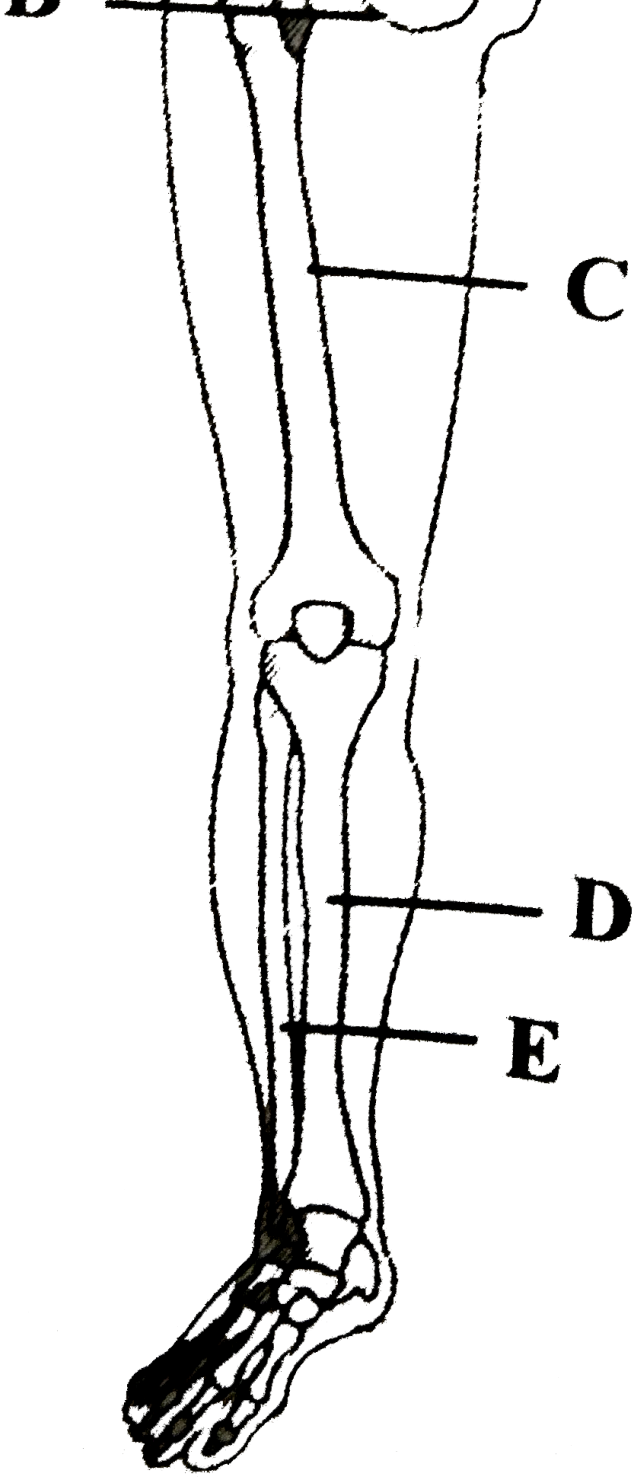
81. The figure Is showing part of right pelvic girdle and lower limb nones.

Identify the parts labelled as A to E and select the correct option.




C
D
E

A.

A	B	C	D	E
Sacrum	Pubis	Patella	Metatarsal	Fibula

B.

A	B	C	D	E
Ilium	Ischium	Femur	Tibia	Fibula

C.

A	B	C	D	E
Ilium	Ischium	Femur	Fibula	Tibia

D.

A	B	C	D	E
Ischium	Ilium	Patella	Tibia	Tarsal

Answer: B

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82. Which of the following statements are incorrect regarding a normal human ?

(i) The skull is dicondlic.

(ii) Metacarplas are are five in numbers.

(iii) Patella is a cup-shaped bone covering and protecting the posterior articular surface of the knee joint. (iv) Scapula is a large triangular flat bone, situated on the ventral side of the thorax.

(v) The pelvic girdle has two coxal bones.

A. (i) and (v)

B. (i) and (ii)

C. (ii) and (v)

D. (iii) and (iv)

Answer: D

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83. The coxal bone of the pelvic girdle is formed by the 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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84. A cricket player is fast chasing ball in the field.Which one of the following group of bones is directly contributing in this movement ?

A. Femur, malleus, tbia, metatarsals

B. Pelvis, incus, petella, tarsal

C. Sternum, femur, tibia,fibula

D. Tarsal, femur, metatarsals,tibia

Answer: D

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85. Complete the following paragraph by selecting the correct option Pelvic girdle consists of two coxal bones. Each coxal bone is formed by the fusion of three bones (i) ,(ii) and (ii) . At the point of fusion of the above bones is a cavity called (iv) to which the thigh bone articultes. The two halves of the pelvic girdle meet ventrally to form the pubic symphysis containing (v) cartilage.

A. calivicle scapula sternum glenoid hyaline

B. ulna radius tarsal acromion fibrous

C. scrum scapula clavicle glenoid yellow

D. ilium ischium pubis acetabulum fibrous

Answer: D

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86. Match column I with column II and select the correct option from the codes given below.

	Column I		Column II
A.	Smooth muscle	(i)	Myoglobin
B.	Tropomyosin	(ii)	Thin filament
C.	Red muscle	(iii)	Sutures
D.	Skull	(iv)	Involuntary

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

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

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

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

Answer: A

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87. 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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88. Which one of the following is 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 9^{th} and 10^{th} pairs of ribs are called the floating ribs.

D. Glenoid cavity is a depression to which the thigh bone articulates.

Answer: A

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89. 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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90. Synovial joint is exemplified by

A. pivot joint

B. hinge joint

C. ball and socket joint

D. all of these

Answer: D

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91. The joint of femur with pelvic girdle is

A. hinge joint

B. non-movable joint

C. pivot joint

D. ball and socket joint

Answer: D

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92. The joint of radio-ulna with the upper arm is

A. hinge joint

B. socket joint

C. pivot joint

D. none of these.

Answer: A

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93. Read the given statements and select the correct option.

Statement 1 : Articulation between the occipital condyles and the atlas vertebra forms a hinge joint.

Statement 2 : It permits the head to move in one plane only, i.e., nodding of head.

A. Both statement 1 and 2 are correct

B. Statement 1 is correct but statement 2 is incorrect

C. Statement 1 is incorrect but statement 2 is correct

D. Both statements 1 and 2 are incorrect

Answer: A

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94. Which one of the following pairs of structures is correctly matched with their description?

A. Tibia and fibula - Both form parts of knee joint

B. Joint between atlas and axis - Pivot joint

C. Shoulder joint - Ball and socket type of joint and elbow joint

D. None of these

Answer: B

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95. The joint in which one of the two bones is fixed in its place and bears a peg like process over which the other bone rotates is called

A. hinge joint

B. saddle joint

C. pivot joint

D. angular joint

Answer: C

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96. The joints between the carpal bones are

A. gliding joints

B. hinge joint

C. Saddle joint pivot joints

D. pivot joints

Answer: A

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97. Which of the following pairs is correctly matched ?

A. Hinge joint - Between vertebrae

B. Gliding joint - Between the carpals

C. Cartilaginous joint - Skull bones

D. Fibrous joint - Between phalanges

Answer: B

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98. Match the two columns and select the correct option from the codes given below.

	Types of synovial joint		Bones involved
A.	Ball and socket	(i)	Carpal and metacarpal of thumb
B.	Hinge	(ii)	Atlas and axis
C.	Pivot	(iii)	Frontal and parietal
D.	Saddle	(iv)	Knee
		(v)	Humerus and pectoral girdle

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

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

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

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

Answer: A

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99. Which of the following is/are not correctly matched pairs?

(i) Ball and socket joint -Between humerus and pectoral girdle

(ii) Pivot joint - Between carpal and metacarpal

(iii) Saddle joint - Between atlas and axis

(iv) Gliding joint - Between the carpals

(v) Fibrous joint - In flat skull bones

A. (ii) and (iii)

B. (i) and (iv)

C. (v) only

D. (ii) only

Answer: A

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100. Match column I with column II and select the correct option from the codes given below. 

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

Answer: B

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101. 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 fuild.

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 blannks in any two the statements ?

A. (C) - Muscular dystrophy, (D) - fascia, (E) - fascicle

B. (A) - Clavicle, (B) - scapla, (C) - Tetany

C. (A) - ilium,(B) ischium, (D) - fascicles, (E) - fascia

D. (C)-Myasthenia gravis, (D)-Fascicles, (E) - fascia

Answer: B

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102. Which of the following is the correct pairing regarding a specific disorder of muscular or skeletal system ?

A. Muscular dystrophy - Age related shortening of muscles

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

C. Myasthenia - Autoimmune disorder which inhibits slididng of myosin filaments

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

Answer: B

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103. Limbalances of certain hormones, deficiencies of calcium and vitamin D are the major causative factors of

A. rheumatoid arthritis

B. osteoporosis

C. osteoarthritis

D. gouty arthritis.

Answer: B

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104. Read the given statements and select the correct option.

Statement 1: Inflammation of a skeletal joint may immobilise the movements of the joint.

Statement 2: This may be caused due to uric acid crystals in the joint cavity and ossification of articular cartilage.

A. Both statement 1 and 2 correct.

B. Statement 1 is correct but statement 2 is incorrect

C. Statement 1 is incorrect but statement 2 is correct

D. Both statements 1 and 2 are incorrect

Answer: A

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105. The accumulation of uric acid crystals in the region of joints resulting in painful movements causes

A. Fluorodosis

B. gout

C. arthritis

D. rheumatoid arthritis

Answer: B

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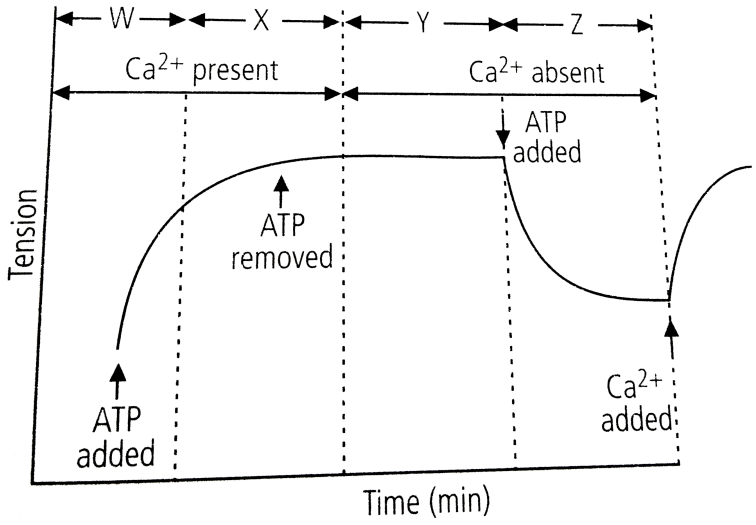
106. Refer to the given graph carefully and answer the following question.



Which of the labelled parts on the graph represents rigor mortis?

A. X

B. W

C. Z

D. Y

Answer: D

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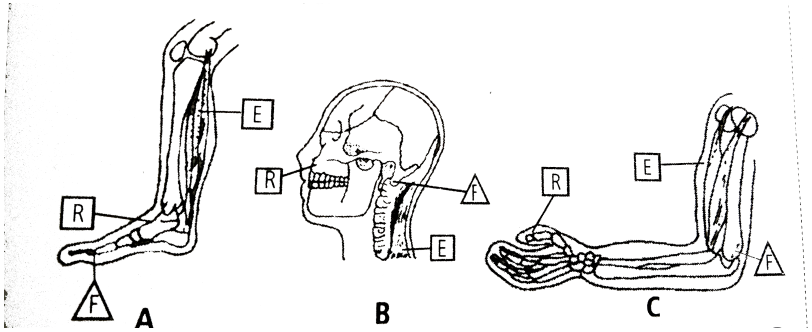
107. Refer to the figures, (A, B and C) and arrange them in an order of list class lever, second class lever and third class lever.



A. B,A,C

B. C,A,B

C. C,B,A

D. A,C,B

Answer: A

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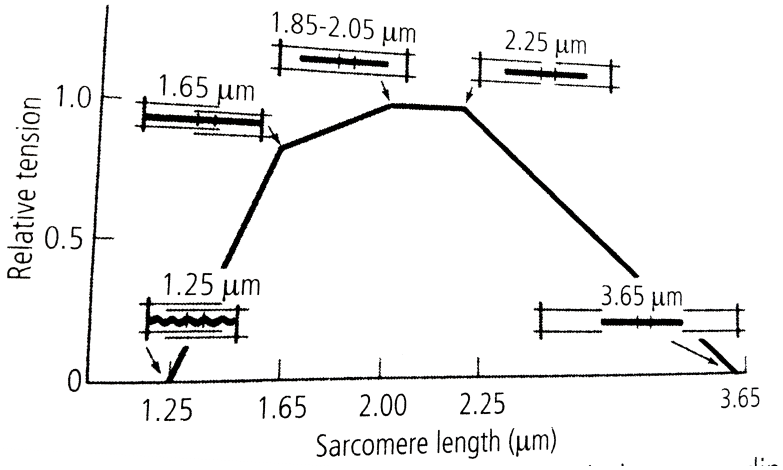
108. The given graph shows length-tension curve for a typical vertebrate sarcomere.



By analysing the graph, what can you deduce regarding the muscle contraction?

(i) Neither the myosin filaments nor the actin thin filaments change in

length when a sarcomere shortens or is stretched. Instead, it is the extent of ocerlap between actin and myosin filaments that changes.

(ii) The total tension produced by a sarcomere is proportional to the total number of cross-bridges that can interact with actin filaments, and this number in turn is proportional to the amount of of overlap between thick and thin filaments.

(iii) The tension produced by the muscle is maximal when the overlap between thick and thin filamentss allows the largest number of myosin cross-bridges to bind to actin.

(iv) Tension drops off with increased lenght, because the thick and thin filaments overlap less and fewer cross-bridges can bind.

Tension drops off with decreased length, because thin filaments at the two ends of the secromere begin to collide with each other, preventing further shortening.

A. (i) Only

B. (i),(iii) and (iv)

C. (i),(iii),(iv) and (v)

D. (i),(ii),(iii),(iv) and (v)

Answer: D

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109. Long distance, competitve runners are usually small and wiry and run more slowly than sprinters, who run much shorter distances and generally have a loarger bulk of nuscles. Which of the following best explains the differences between the two types of runners?

A. Long distance runners run more slowly because lactic acid quickly builds up in muscels and causes fatigue. Sprinters increase the oxygen supply to each muscle, enough for lactic acid to build up in their muscles.

B. The large muscels of sprinters increase the oxygen supply to each muscle, preventing lactic acid from forming.

C. Sprinters do not run for long enough for sufficient lactic acid to build up in their muscles therefore they can have large muscles for

more power. By being lighter and running more slowly long distance runners ensure that their muscles receive enough oxygen for aerobic respiration.

D. sprinters run faster because their large muscles have more blood running through them to stop anaerobic respiration from taking place. Long distance runners run more slowly because they are using the energy from anaerobic respiration, which does not produce as much ATP as aerobic respiration.

Answer: C

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110. Which of the following correctly characterises a "fast-oxidative " type of skeletal muscle fibre?

A. Few mitochondria and high glycogen content

B. Low myosin AT Pase rate and few surrounding capillaries

C. Low glycolytic enzyme activity and intermediate contraction velocity

D. High myoglobin content and intermediate glycolytic enzyme activity

Answer: D

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111. Match the following and mark the correct option

Column I		Column II	
A.	Fast muscle fibres	(i)	Myoglobin
B.	Slow muscle fibres	(ii)	Lactic acid
C.	Actin filament	(iii)	Contractile unit
D.	Sarcomere	(iv)	I-band

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

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

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

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

Answer: C

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112. Ribs are attached to

A. scapula

B. sternum

C. clavicle

D. ilium

Answer: B

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113. 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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114. ATPase of the type muscle is located in

A. actinin

B. troponin

C. myosin

D. actin

Answer: C

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115. Intervertbral disc is found in the vertebral column of

A. birds

B. reptiles

C. mammals

D. amphibians

Answer: C

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116. 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. Cervial-thoracic-lumbar-sacral-coccygeal

Answer: D

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117. Which one of the following options is incorrect ?

A. Hinge joint-between humerus and pectoral girdle

B. Pivot joint-between atlas, axis and occipital condyle

C. Gliding joint-between the carpals

D. Saddle joint-between carpal and metacarpals of thumb

Answer: A

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118. Knee joint and elbow joints are examles of

A. Saddle joint

B. ball and socket joint

C. pivot joint

D. hinge joint

Answer: D

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119. Macrophages and leucocytes exhibit

A. ciliary movement

B. flagellar movement

C. amoeboid movement

D. gliding movement

Answer: C

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

A. Arthritis

B. Osteoporosis

C. Rickets

D. Atherosclerosis

Answer: D

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121. Which one of the following statements is incorrect?

A. Heart muscls are striated and involuntary

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

C. The muscles 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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122. Which one of the following statements is true?

A. Head of humerus bone articulate 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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123. Muscles with characteristic striations and in- voluntary 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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124. Match the followings and mark the correct option.

	Column I		Column II
A.	Sternum	(i)	Synovial fluid
B.	Glenoid cavity	(ii)	Vertebrae
C.	Freely movable joint	(iii)	Pectoral girdle
D.	Cartilaginous joint	(iv)	Flat bones

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

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

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

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

Answer: B

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125. Assertion: Visceral muscles are smooth in appearance.

Reason: Many muscle cells assemble in a branching pattern to from a visceral muscle.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: c

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126. Assertion: Muscle fibre is a syncitium.

Reason: Muscle fibre has a large number of parallelly arraaged myofilaments in the sarcoplasm.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: b

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127. Assertion: Biceps and triceps are antagonistic muscles

Reason: The biceps flexes the arm and the tr4iceps straightens the arm.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: a

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128. Assertion: Mechanism of muscle contraction is expalained by sliding-filaments theory.

Reason: Contraction of muscle fibre takes place by the sliding of thick filaments over the thin filaments.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: c

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129. Assertion: on stimulation, a muscle cell releases calcium ions $\left(Ca^{2+}\right)$ from sarcoplasmic reticulum.

Reason: By reacting with a protien complex, Ca^{2+} uncover active sites on the actin filaments.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: b

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130. Assertion: The portion of the myofibril between two successive Z-lines is considered as the functional unit of contraction called sarcomere. Reason: During contraction, l-bands get reduced whereas A-bands retain the length , thereby causing shortening of the sarcomere.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: b

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131. Assertion: A person undergoes fatigue very soon during exercies.

Reason : Muscle fibres undergo oxygen debt during exercies.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: b

Watch Video Solution

132. Assertion: Red muscles depend on anaerobic process for energy.

Reason: Red muscles have few number of mitrochondira in them

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: d

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133. Assertion: Bone has very hard matrix whereas cartilage has pliable matrix.

Reason: Bone has calcium salts in its matrix whereas cartilage has chondroitin salts in its matrix.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: a

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134. Assertion: Human has dicondylic skull.

Reason: Skull articulates with superior region of the vertebral column with the help of two occipital condyles.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: a

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135. Assertion: First seven pairs of ribs are called true ribs.

Reason: These ribs are not connected ventrally to the sternum.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: c

Watch Video Solution

136. Assertion: Ulna is logner than radius.

Reason: It has large olecranon process.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: A

Watch Video Solution

137. Assertion: Fibrous joints play a significant role in locomotion.

Reason: Fibrous joints have fluid-filled cavity between the articulating surfaces of the two bones.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: d

Watch Video Solution

138. Assertion: The joint between the atlas and axis is an example of gliding joint.

Reason: Gliding joint allows movement primarily in one plane.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: d

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139. Assertion: Tetany is rapid spasm in muscle.

Reason: Tetany is usually caused by an increases in the blood calcium level.

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 reason is false

D. If both assertion and reason are false

Answer: c

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Locomotion And Movement

1. Read the following statements and select the correct option.

Statement 1: Locomotion is the movement of an indvidual from one place to another.

Statement 2: All movents are locomotions are but all locomotions are not movements .

A. Both statement 1 and 2 are correct.

B. Statement 1 is correct but statement 2 is incorrect

C. Statement 1 is incorrect but statement 2 is correct.

D. Both statement 1 and 2 are incorrect.

Answer: B

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2. Microfilaments are involed in

A. amoebiod movement

B. ciliary movement

C. muscular movement

D. both (a) and (b)

Answer: A

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3. The amoeboid movement results from

A. interaction among actin, myosin and ATP, etc.

B. coordinated beats of cilia

C. whip like action of flagella

D. action by the mitotic spindle, similar to what happens during mitosis and meiosis.

Answer: A

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4. Passage of ova through female reproductive tract is facilitated by

A. ciliary movement

B. amoeboid movement

C. flagellar movement

D. cyclosis.

Answer: A

Watch Video Solution

5. Match coloum I with coloum II select the correct option from the codes given below.

	Column I		Column II
A.	Amoeboid movement	(i)	Limbs
B.	Ciliary movement	(ii)	Leucocytes
C.	Flagellar movement	(iii)	Trachea
D	Muscular movement	(iv)	Spermatozoa

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

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

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

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

Answer: B

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6. The type of muscle present in our

A. heart is involuntary and unstirated smooth

B. intestine is striated and involuntary

C. thigh is striated and voluntary

D. upper arm is smooth muscle and fusiform in

Answer: C

Watch Video Solution

7. Which of the following is the most abundant mineral element in the skeletal muscle ?

A. Sodium

B. Calcium

C. Potassium

D. Phosphorous

Answer: C

Watch Video Solution

8. The type of muscle fibre present in the wall of alimentary canal is

A. Smooth muscle fibre

B. striped muscle fibre

C. cardiac muscle fibre

D. both (a) and (b)

Answer: A

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9. Read the following statements carefully and select the correct ones.

Cardiac fibre are branched with one or more nuclei.

(ii) Smooth muscles are unbranched and cylinedrical.

(iii) Skeletal muscle can be branched or unbranched.

(iv) Smooth muscle are non-striated.

A. Only (IV)

B. (ii) and (iii)

C. (iii) and (iv)

D. only (iii)

Answer: A

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10. Which of the following statements is incorrect ?

A. Smooth muscle are found in urinary bladdedr, alimentary canal and genital tract.

B. A striated muscle is a syncytium i.e., a multinucleate structure.

C. The cytoplasm of striated muscle is called endoplasm.

D. The plasma membrane and ER of striated muscles are called sarcoplasmic reticulum respectively.

Answer: C

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11. Dark bands are

A. A-band

B. B-band

C. I-band

D. Ziline.

Answer: A

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12. What is 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

Watch Video Solution

13. The functional unit of contractile system in a striated muscle is

A. sarcomere

B. Z-band

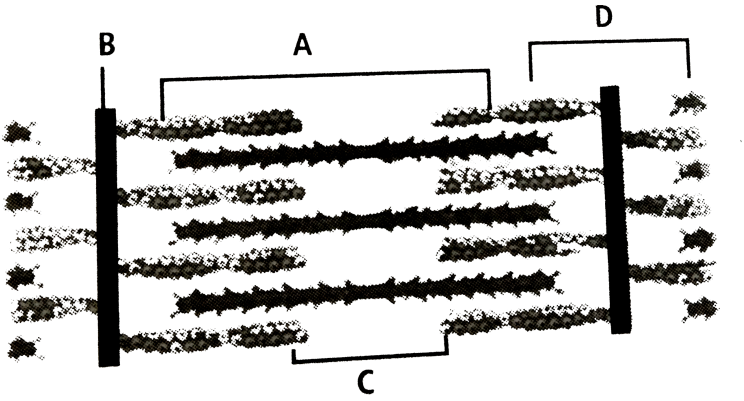
C. cross bridges

D. nyofibril.

Answer: A

Watch Video Solution

14. Given below is the figure of a sarcomere. Identify the parts labelled as A to D and select the correct option.



A. (A) (A-band) (B) ($Z-$ line) (C) ($H-$ zone) (D) ($I-$ band)

B. (A) (A-band) (B) ($H-$ line) (C) ($Z-$ zone) (D) ($I-$ band)

C. (A) (I-band) (B) ($H-$ line) (C) ($Z-$ zone) (D) ($A-$ band)

D. (A) (I-band) (B) ($Z-$ line) (C) ($H-$ zone) (D) ($A-$ band)

Answer: A

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15. Which of the following statements about the striated muscle is incorrect

A. In the centre of each I-band is an elastic (Z-line) which bisects it.

B. Thin filaments are firmly attached to the Z-line.

C. M-line is a fibrous membrane in the middle of A-bands.

D. none of these

Answer: D

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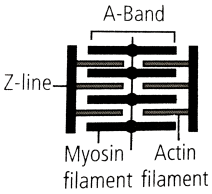
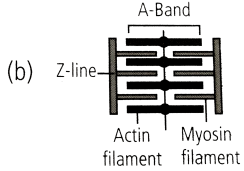
16. Which of the following sarcomeres is lablled correctly ?

A.

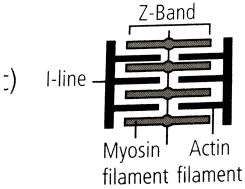
a)



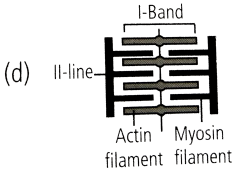
B.



C.



D.



Answer: A

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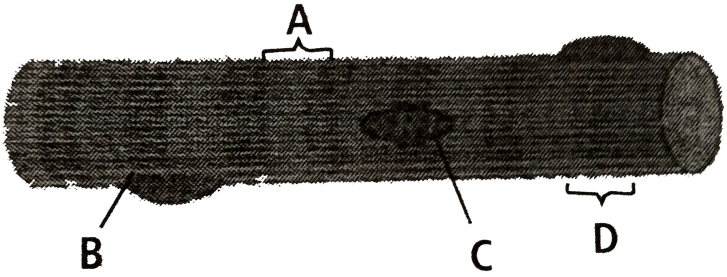
17. The given figure represents the histology of of a striated muscle. Identify the parts labelled as A, B, C and D, and select the correct option.



A. (A) (Sarcoplasm) (B) (Sarcolemma) (C) (Dark band) (D) (Light band)

B. (A) (Dark band) (B) (Myofibril) (C) (Nucleus) (D) (Light band)

C. (A) (Light band) (B) (Myofibril) (C) (Nucleus) (D) (Dark band)

D. (A) (Nucleus) (B) (Dark band) (C) (Light band) (D) (Myofibril)

Answer: C

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18. Match coloum I with coloum II and select the correct option from the codes given below.

	Column I	Column II
A.	Structural and functional unit of a myofibril	(i) H-zone
B.	Protein of thin filament	(ii) Myosin
C.	Protein of thick filament	(iii) Sarcomere
D.	The central part of thick	(iv) Actin

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

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

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

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

Answer: D

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19. Read the given statements and select the correct option.

Statement 1: A primary myofilament is composed of a bundle of rod-like molecules of a protein myosin.

Statement 2: Myosin and actin together a form a contractile apparatus.

A. Both statement 1 and 2 are correct.

B. Statement 1 is correct but statement 2 is incorrect

C. Statement 1 is incorrect but statement 2 is correct.

D. Both statement 1 and 2 are incorrect.

Answer: A

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20. Which of the following contractile proteins contributes 55% of muscle protein by weight?

A. Tropomyosin

B. Troponin

C. Myosin

D. Actin

Answer: C

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21. The given figure shows an actin (thin) filament. Identify the labelled parts A, B, and C and select the correct option.

A. (A) (Tropomyosin) (B) (Troponin) (C) (F-actin)

B. (A) (Troponin) (B) (Myosin) (C) (Tropomyosin)

C. (A) (Troponin) (B) (Tropomyosin) (C) (Myosin)

D. (A) (Troponin) (B) (Tropomyosin) (C) (F-actin)

Answer: D

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22. Fill up the blanks in the following sentence by selecting the correct option.

A. (A) (1F) (B) (troponin) (C) (tropomyosin)

B. (A) (1F) (B) (tropomyosin) (C) (troponin)

C. (A) (2F) (B) (troponin) (C) (tropomyosin)

D. (A) (2F) (B) (tropomyosin) (C) (troponin)

Answer: D

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23. Actin binding sites are located on

A. troponin

B. tropomyosin

C. meromyosin

D. bith (b) and (c).

Answer: C

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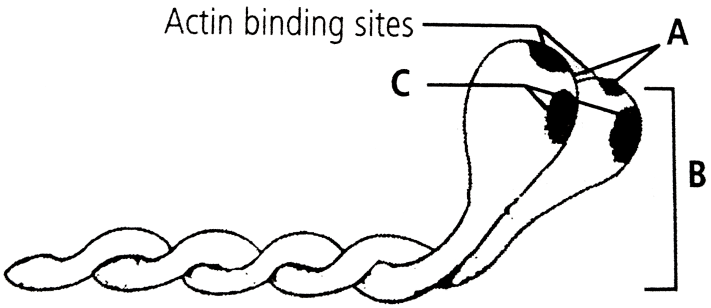
24. The given figure is related with myosin monomer (meromyosis). Identify the parts labelled from A to C and select the correct option .



A. (A) (B) (C)
(Head) (Cross arm) (GTP binding sites)

B. (A) (B) (C)
(Cross arm) (Head) $(Ca^{+2}$binding sites$)$

C. (A) (B) (C)
(Head) (Cross arm) (ATP binding sites)

D. (A) (B) (C)
(Cross) (Head) (ATP binding sites)

Answer: C

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25. Which of the following statements are correct regarding muscle proteins ?

(i) Actin is a thin filament and is mde up to two F-actin

(ii) The complex protein, tropomyosin is distributed at regular intervals

on the troponin

(iii) Myosin is a thick filament which is also a polymerised protein.

(iv) The globular head of meromyosin consists of light meromyosin (LMM).

A. (i), (ii) and (iii)

B. (i), (ii) and (iv)

C. (i) and (iii)

D. (ii) and (iv)

Answer: C

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26. Which of the following statements about the molecular arrangement of actin and mysin In myofibre is/are incorrect ?

(i) Each actin (thin filament) is made of 2F (filamentous) actins.

(ii) F-actin is the polymer of G (globular) actin.

(iii) 2F0actins are twisted into a helix.

(iv) Two strands of tropomyosin (protein) lie in the grooves of F-actin.

(v) Troponin molecules (complex proteins) are distributed at regular intervals on the tropomyosin.

(vi) Troponin forms the head of the myosin molecule.

(vii) The myosin is a polymerised protein.

A. (i), (iii) and (vii)

B. (ii), (iv) and (v)

C. Only (vi)

D. Only (iii)

Answer: C

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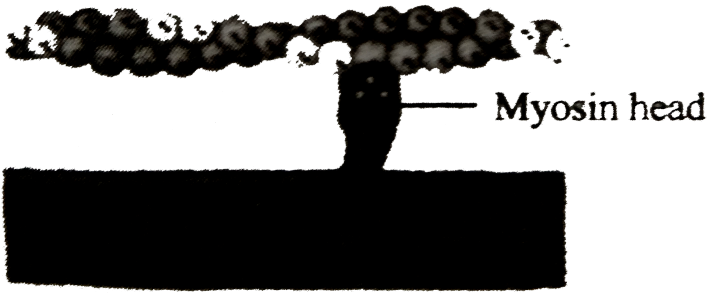
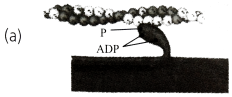
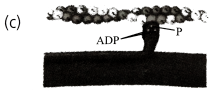
27. Which one of the following options shows the next stage of muscle contraction after the stage given in question ?



A. 

B. 

C. 

D. 

Answer: A

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28. During muscular contraction, which of the following events occur?

(i)H-zone disappears

(ii) A-band widens

(iii) I-band reduces in width

(iv) Width of A-is unaffected

(v) M-line and Z-line come closer

A. (i), (iii), (iv) and (v)

B. (i), (ii) and (v)

C. (ii), (iv) and (v)

D. (i), (ii) and (iii)

Answer: A

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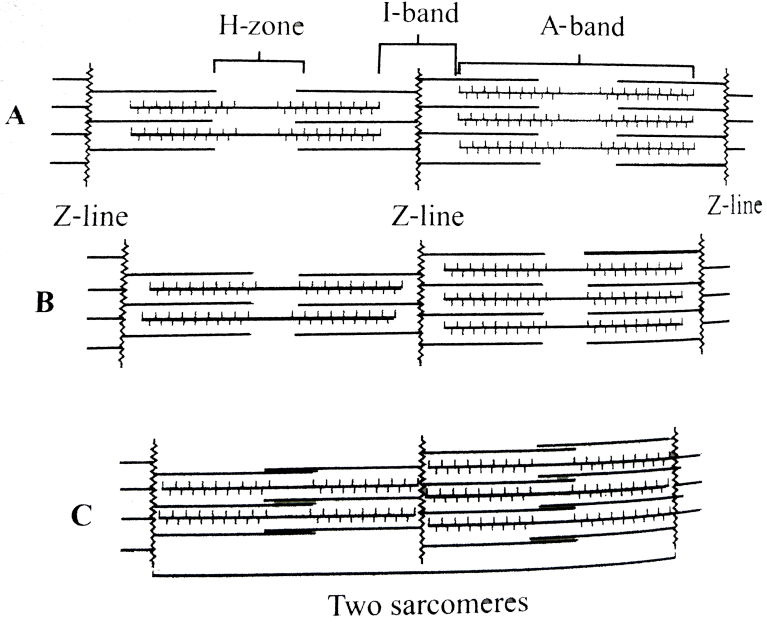
29. The figures given here repesent three diferent conditions of sarcomeres. Identify these conditions and select the correct option



Two sarcomeres

A. (A) (Contractin) (B) (Relaxed) (C) (Maximally contracted)

B. (A) (Relaxed) (B) (Contracting) (C) (Maximally contracted)

C. (A) (Maximally contracted) (B) (Contracting) (C) (Relaxed)

D. (A) (Relaxed) (B) (Contracted) (C) (Contracting)

Answer: B

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30. Following is given a randomly arranged list of events that occur at neuromuscluar junction to trigger mucle contraction.

(i) Receptor sites on sarcolemma

Nerve impulse

(iii) Release of Ca^{+2} from sarcoplasmic reticulum

(iv) The neurotransmitter acetylcholine is released

(v) Sarcomere shorten (vi) Synaptic cleft

(vii) Spread of impulses over sarcolemmna on T-tubules Which of the following gives the correct sequence of these steps?

A. $(ii) \rightarrow (iv) \rightarrow (i) \rightarrow (vi) \rightarrow (vii) \rightarrow (iii) \rightarrow (v)$

B. $(ii) \rightarrow)(iv) \rightarrow (vi) \rightarrow (i) \rightarrow (vii) \rightarrow (iii) \rightarrow (v)$

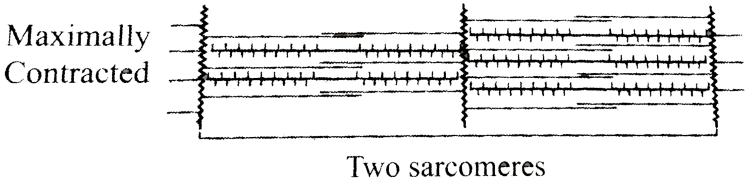
C. $(i) \rightarrow (ii) \rightarrow (iii) \rightarrow (iv) \rightarrow (v) \rightarrow (vi) \rightarrow (vii)$

D. $(vii) \rightarrow (vi) \rightarrow (v) \rightarrow (iv) \rightarrow (iii) \rightarrow (ii) \rightarrow (i)$

Answer: B

View Text Solution

31. Which of the following is correct regarding changes in muscle fibre from relaxed to contracted state in the given figure ?



Two sarcomeres

A. The length of the thick and thin myofilaments has changed.

B. length of both anisotropic and isotropic band has changed.

C. The myosin cross-bridges move on the surface of actin and the thin and thick myofilaments slide past each other.

D. length of the sarcomere remain same.

Answer: C

View Text Solution

32. In a muscle undergoes rapid contraction and relaxation, the sarcoplasmic reticulum extension

A. requires constant plugging in and out of $Ca \wedge (2+)$

B. rapidly synthesise myosin

C. does not require energy

D. all of these

Answer: A

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33. Consider the following statements each with one or two blanks.

(i) Repeated activation of the muscle can lead to the accumulation of (A) due to anaerobic breakdown of glycogen in them, causing fatigue.

(ii) The globular head of meromyosin is an active ATPase enzyme and has binding sites for (B) active sites for (C) .

This centre part of thick filament, not overlapped by thin filaments is called the (D) .

Which one of the following options correctly fils the concerned blanks ?

A. (A)-glucose, (D)-A-band

B. (A)-pyruvic acid, (B)-troponin, (C)-myosin

C. (B)-ATP, (C)-actin, (D)-H-zone

D. (A)-lactic acid, (D)-I-band

Answer: C

View Text Solution

34. Which of the following statements about the mechanism of muscle contraction are correct ?

(i) Acetylcholine is released when the neural signal reaches the motor end plate.

(ii)Muscle contraction is initiated by a signal sent by CNS via sensory neuron.

(iii) During muscle contraction, isotropic band gets elongated

(iv) Repeated activation of the muscles can lead to lactic acid accumulation.

A. (i) and (iv)

B. (i) and (iii)

C. (ii) and (iii)

D. (i), (ii) and (iii)

Answer: A

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35. The slow twitch muscle fibre which are rich in myoglobin and have abundant mitochondria are

A. white skeletal muscles

B. cardiac muscles

C. red skeletal muscles

D. involuntary muscles.

Answer: C

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36. Identify from the following list, the characteristics of red muscles (A) and white muscles (B) and select the option that correctly segregates the characters.

(i) Less number of mitochondria

(ii) More number of mitochondria

(iii) Sarcoplasimic reticulum is abundant (iv) Myolobin content high

(v) Sarcoplamic reticulum moderate

(vi) Aerobic muscles

(vii) Depend on anaerobic respiration for energy

(viii) Less myoglobin content

A. $\underset{(\mathrm{i}).(\mathrm{iii}).(\mathrm{vii}).(\mathrm{viii})}{(A)}$ $\underset{(\mathrm{ii}).(\mathrm{iv}).(\mathrm{v}).(\mathrm{vi})}{(B)}$

B. $\underset{(\mathrm{ii}).(\mathrm{iv}).(\mathrm{v}).(\mathrm{vi})}{(A)}$ $\underset{(\mathrm{i}).(\mathrm{iii}).(\mathrm{vii}).(\mathrm{viii})}{(B)}$

C. $\underset{(\mathrm{i}).(\mathrm{iii}).(\mathrm{iv}).(\mathrm{vii})}{(A)}$ $\underset{(\mathrm{ii}).(\mathrm{v}).(\mathrm{vi}).(\mathrm{viii})}{(B)}$

D. $\underset{(\mathrm{ii}).(\mathrm{v}).(\mathrm{vi}).(\mathrm{viii})}{(A)}$ $\underset{(\mathrm{i}).(\mathrm{iii}).(\mathrm{iv}).(\mathrm{vii})}{(B)}$

Answer: B

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37. Myoglobin is present in

A. alll muscle fibres

B. white muscle fibre

C. red muscle fibre

D. none of these.

Answer: A

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38. Which of the following is a source of energy for muscle contraction ?

A. Actin

B. ATP

C. Myosin

D. Actomyosin

Answer: B

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39. The protien whose removal enables myosin to bind actin in smooth muscle is

A. tropomyosin

B. caldesmon

C. myosin light chain kinase

D. calmodulin.

Answer: A

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40. During muscle contraction, actin and myosin ffrom

A. actomyosin

B. actoplasm

C. plastosine

D. myoplasm.

Answer: A

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41. Which of the following ions help in muscle contraction ?

A. K^+ and Mg^{++}

B. Na^+ and K^+

C. Ca^{++} and Na^{++}

D. Ca^{++} and Mg^{++}

Answer: D

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42. If a stimulus, several times greater than the threshold stimulus, is provided to a musclw fibre, it will

A. contract with a larger force

B. contract wit a smaller force

C. contract with the same force

D. undergo tetany.

Answer: C

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43. Which of the following is incorrect regarding muscle contraction?

A. Actin and myosin make actomyosin.

B. Phosphate reserve comes from phosphocreatine.

C. Chemical energy is converted into mechanical energy.

D. Mechanical energy is converted into chemical energy

Answer: D

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44. Upon stimulation of skeletal muscles, calcium is immediately made available for binding to troponin from

A. blood

B. lymph

C. sarcoplasmic reticulum

D. bone.

Answer: C

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45. In the resting muscle fibre, tropomysin partially covers

A. calcium binding sites on troponin

B. actin binding sites on myosis

C. muyosin binding sites on actin

D. calcium binding sites on actin.

Answer: C

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46. Ends of long bones are covered with

A. blood cells

B. muscles

C. cartilages

D. ligaments.

Answer: C

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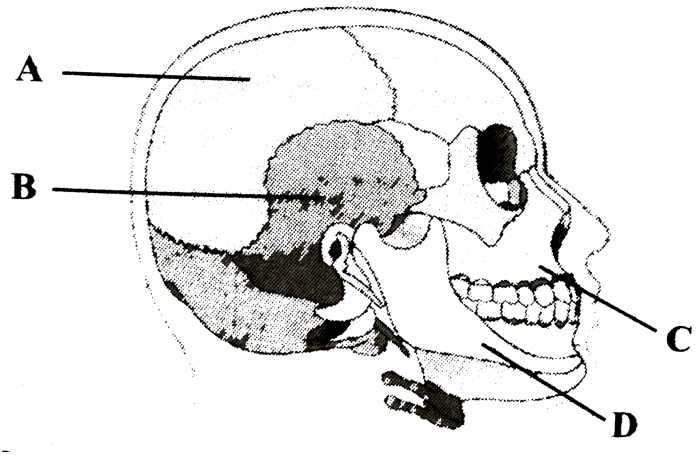
47. Examine the given diagrammatic view of human skull given below and identify the skull bones labelled from A-D.



A. $\begin{matrix} A & B & C & D \\ \text{Frontal} & \text{Temporal} & \text{Maxilla} & \text{Mandible} \end{matrix}$

B. $\begin{matrix} A & B & C & D \\ \text{Occipital} & \text{Frontal} & \text{Mandible} & \text{Maxilla} \end{matrix}$

C. $\begin{matrix} A & B & C & D \\ \text{Parietal} & \text{Temporal} & \text{Maxilla} & \text{Mandible} \end{matrix}$

D.

A	B	C	D
Temporal	Parietal	Mandible	Maxilla

Answer: C

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48. Which of the following is a bone of skull?

A. Atlas

B. Patella

C. Ethmoid

D. Phalanges

Answer: C

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49. Cranium of human contains

A. 8 bones

B. 14 bones

C. 12 bones

D. 20 bones.

Answer: A

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50. How many bones from the skeleton of the face ?

A. 22

B. 8

C. 10

D. 14

Answer: D

View Text Solution

51. In an adult human, how many bones are present as ear ossicles ?

A. 4

B. 6

C. 3

D. none of these

Answer: B

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52. Smallest bone in human system is

A. stapes

B. patella

C. malleus

D. incus.

Answer: A

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53. Skull of man is

A. monocondylic

B. dicondylic

C. tricondylic

D. tetracondylic.

Answer: B

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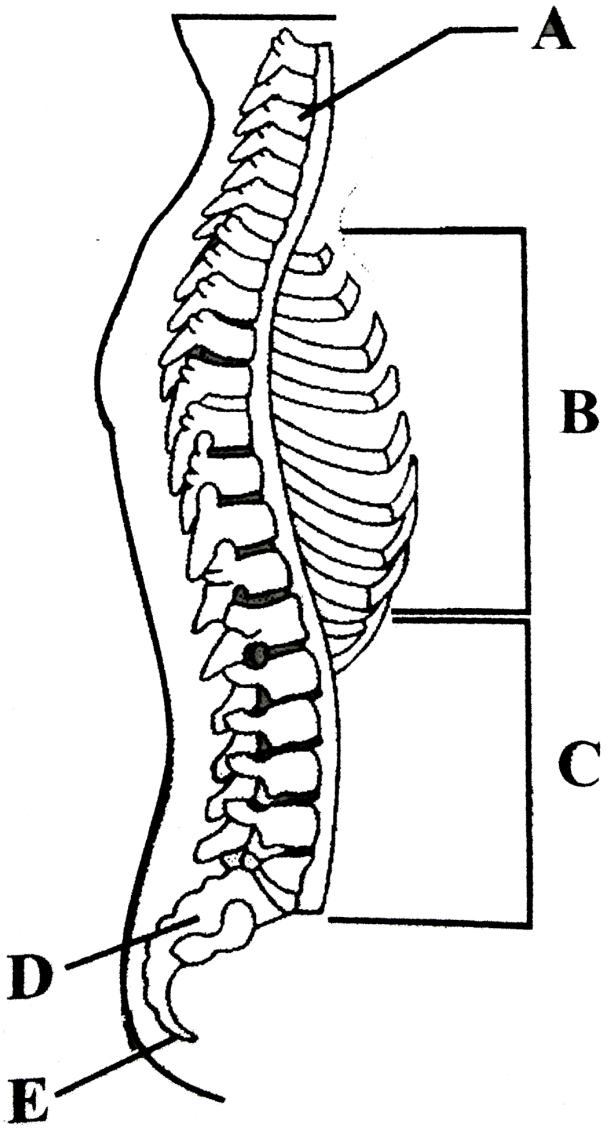
54. Identify the parts labelled as A to E in the given figure of a vertebral column and select the correct option.



A.

A	B	C	D
Thoracic vertebrae	Cervical vertebrae	Lumbar vertibrae	Sacrum

B.

A	B	C	D
Thoracic vertebrae	Cervical vertebrae	Lumbar vertibrae	Coccyx

C.

A	B	C	D
Lumbar vertebrae	Thoracic vertebrae	Cervical vertibrae	Coccyx

D.

A	B	C	D
Cervical vertebrae	Thoracic vertebrae	Lumbar vertibrae	Sacrum

Answer: D

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55. Number of cervical vertebrae in mammals are

A. 7

B. 6

C. 5

D. 11

Answer: A

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56. The cervical vertebra called axis provids head with sideways rotation. This can be because

A. It is articulated to skull through occipital condyles

B. it is fused with 1^{st} vertebra atlas

C. it is joined through elastic pads of fibrocartilage with other vertebrae, which provide mobility

D. it contains odontoid process that fits into the odontoid canal of atlas.

Answer: D

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57. Lumbar vertebrae are found in

A. neck region

B. abdominal region

C. hip region

D. thorax

Answer: B

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58. The vertebral column is connected to the pelvic girdle in the

A. coccygeal region

B. sacral region

C. lumbar region

D. cervical region.

Answer: B

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59. Human vertebral column consists of 33 vertebrae and _____bones.

A. 33

B. 26

C. 27

D. 29

Answer: B

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60. Which of the following vertebra is formed from four vertebrae ?

A. Sacrum

B. Coccyx

C. Atlas

D. Axis

Answer: B

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61. Which of the folowing is not a function of vertebral column ?

A. Protects spinal cord and supports the head

B. Severs as the point of attachment for ribs and musculature of the back

C. Supports tarsals and metacarpals

D. Both (b) and (c)

Answer: C

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62. Consider the following four statements (i)-(iv) and select the correct option.

(i) Actin is present in thin filament.

(ii) H-zone of striated muscle fibre represents both thick and thin filaments.

(iii) There are 11 pairs of ribs in man.

(iv) Sternum is present on ventral side of the body.

A. $\begin{matrix}(\mathrm{i}) & (\mathrm{ii}) & (\mathrm{iii}) & (\mathrm{iv}) \\ F & F & T & F\end{matrix}$

B. $\begin{matrix}(\mathrm{i}) & (\mathrm{ii}) & (\mathrm{iii}) & (\mathrm{iv}) \\ F & F & F & T\end{matrix}$

C. $\begin{matrix}(\mathrm{i}) & (\mathrm{ii}) & (\mathrm{iii}) & (\mathrm{iv}) \\ T & F & F & T\end{matrix}$

D. $\begin{matrix}(\mathrm{i}) & (\mathrm{ii}) & (\mathrm{iii}) & (\mathrm{iv}) \\ T & F & T & F\end{matrix}$

Answer: C

View Text Solution

63. 11^{th} and 12^{th} pair of ribs which are imperfectly formed and do not reach the sternum are called

A. Pseudo

B. fa,se ribs

C. floting ribs

D. visceral ribs.

Answer: C

Watch Video Solution

64. Match column I with column II and select the correct option from the codes given below.

Column I		Column II	
A.	True ribs	(i)	3 pairs
B.	False ribs	(ii)	2 pairs
C.	Floating ribs	(iii)	7 pairs
(a)	A-(i), B-(ii), C-(iii)	(b)	A-(iii), B-(i), C-(ii)
(c)	A-(iii), B-(ii), C-(i)	(d)	A- (ii), B- (i), C-(iii)

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

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

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

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

Answer: B

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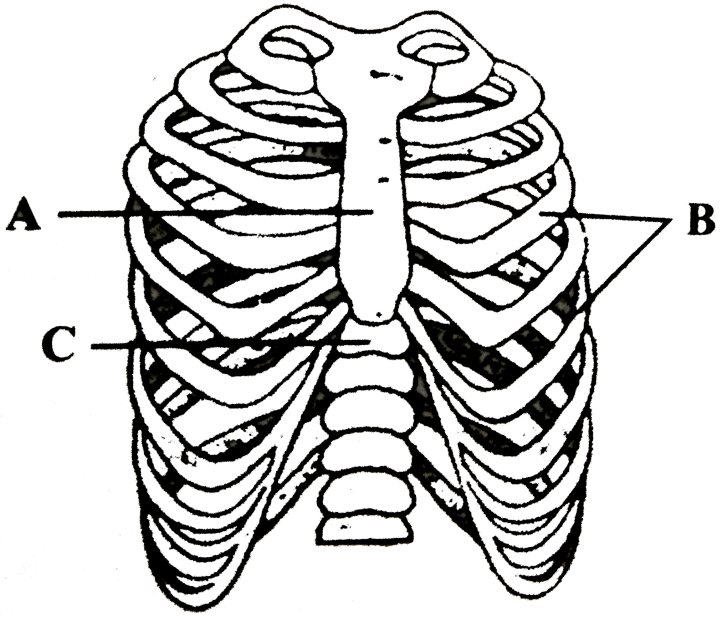
65. The figure given here is of rib cage. Identify the parts labelled as A, B and C and select the correct option .



A. (A) (B) (C)
Coccyx Ribs Vertebral column

B. (A) (B) (C)
Sternum Ribs Vertebral column

C. (A) (B) (C)
Scapula Ribs Vertebral column

D. (A) (B) (C)
Tarsal Ribs Vertebral column

Answer: B

View Text Solution

66. The scapula is a large triangular flat bone situated in the dorsal part of the thorax between

A. second and seventh rib

B. third and fourth rib

C. fifth and sixth rib

D. second and fifth rib.

Answer: A

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67. Appendicular skeleton includes

A. girdle and their limbs

B. vertebrae

C. skull and vertebral column

D. ribs and sternum.

Answer: A

View Text Solution

68. Total number of bones in the hindlimb of a man is

A. 24

B. 30

C. 14

D. 21

Answer: B

View Text Solution

69. Match column I with column II and select the correct option from the codes given below.

	Column I (Skeletal part)	Column II (Number of bones)
A.	Cranium	(i) 29
B.	Skull (Cranial and facial bones)	(ii) 8
C.	Face	(iii) 14
D.	Hind limb	(iv) 24
E.	Ribs	(v) 30

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

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

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

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

Answer: B

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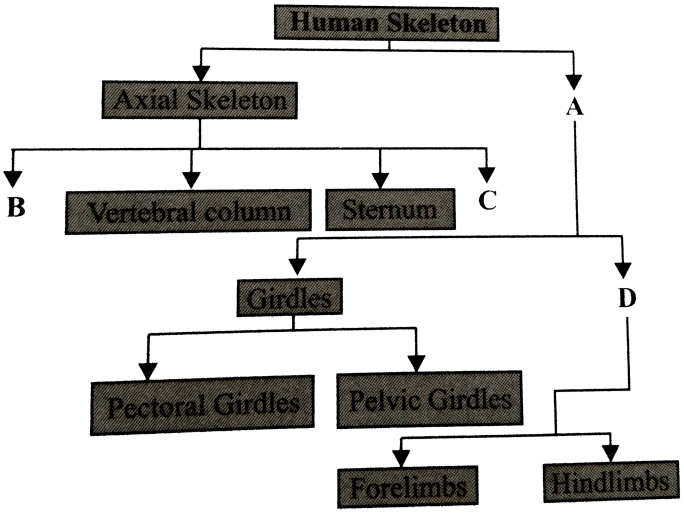
70. Study the following flowchart and fill up the blanks by selecting the correct option.



A. (A) (B) (C) (D)
Thoracic skeleton Limbs Skull Ribs

B. (A) (B) (C) (D)
Appendicular skeleton Skull Ribs Limbs

C. (A) (B) (C) (D)
Appendicular skeleton Limbs Ribs Skull

D. (A) (B) (C) (D)
Lumbar skeleton Limbs Skull Ribs

Answer: B

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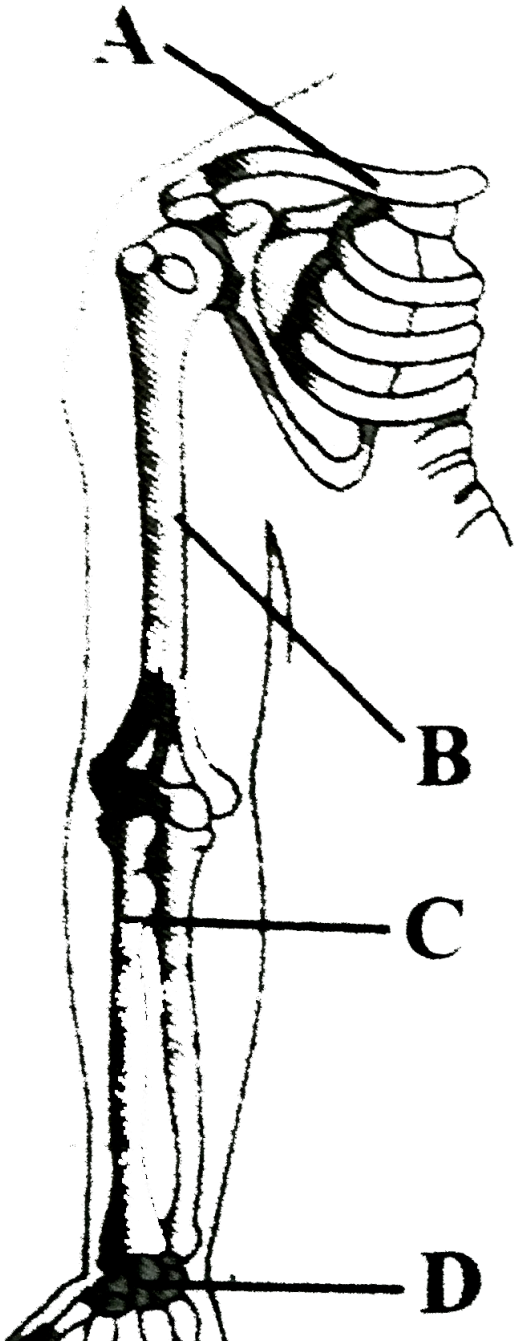
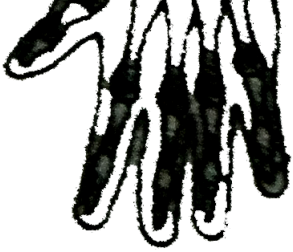
71. Examine the figure of pectoral girdle and forelimb and identify the parts labelled as A, B, C and D.





A. (A) Clavicle (B) Humerus (C) Radius (D) Carpals

B. (A) Scapula (B) Femur (C) Ulna (D) Tarsals

C. (A) Clavicle (B) Femur (C) Radius (D) Carpals

D. (A) Scapula (B) Humerus (C) Ulna (D) Tarsals

Answer: A

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72. Which of the following bones form a link between axial and appendicular skeleton ?

A. First rib

B. Clavicle

C. Scapula

D. both (a) and (b)

Answer: B

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73. Watch column I with column II and select the correct option from the codes given below.

Column I	Column II
A. Humerus	(i) Thigh
B. Pectoral girdle	(ii) Upper arm
C. Femur	(iii) Clavicle
	(iv) Acetabulum
	(v) Glenoid cavity
	(vi) Scapula

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

B. A-(ii), (iv), B-(iii), (vi), C-(iii), (v)

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

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

Answer: A

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74. Humerus with its rounded upper end (head) articulates into

A. acromion process

B. deltoid cavity

C. glenoid cavity

D. acetabulum.

Answer: C

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75. Acromion process is characteristacally found in the_____of mammals.

A. pectrol girdle

B. sperm

C. pelvic dirdle

D. skull

Answer: A

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76. Which of the following components is a part of the pectrol girdle ?

A. Sternum

B. Acetabulum

C. glenoid cavity

D. llium

Answer: C

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77. The shoulder blade is made of

A. clavicle

B. humerus

C. ilium

D. scapula.

Answer: D

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78. Identify the incorrectly matched pair.

A.

Pair of skeletal parts	Category
Sternum and ribs	Axial skeleton

B.

Pair of skeletal parts	Category
Clavicle and glenoid cavity	Pelvic girdlw

C.

Pair of skeletal parts	Category
Humerus and ulna	Appendicular skeleton

D.

Pair of skeletal parts	Category
Malleus and stapes	Ear ossicles

Answer: B

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79. Collar bone is known as

A. scapula

B. clavicle

C. pelvic girdle

D. chevron bone.

Answer: B

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80. Acetabulum is located in

A. collar bone

B. hip bone

C. shoulder bone

D. thigh bone.

Answer: B

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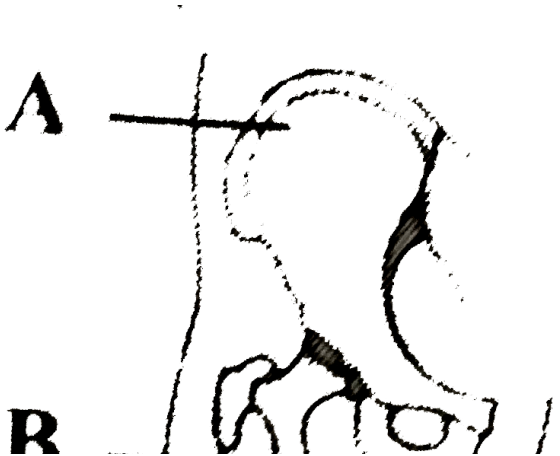
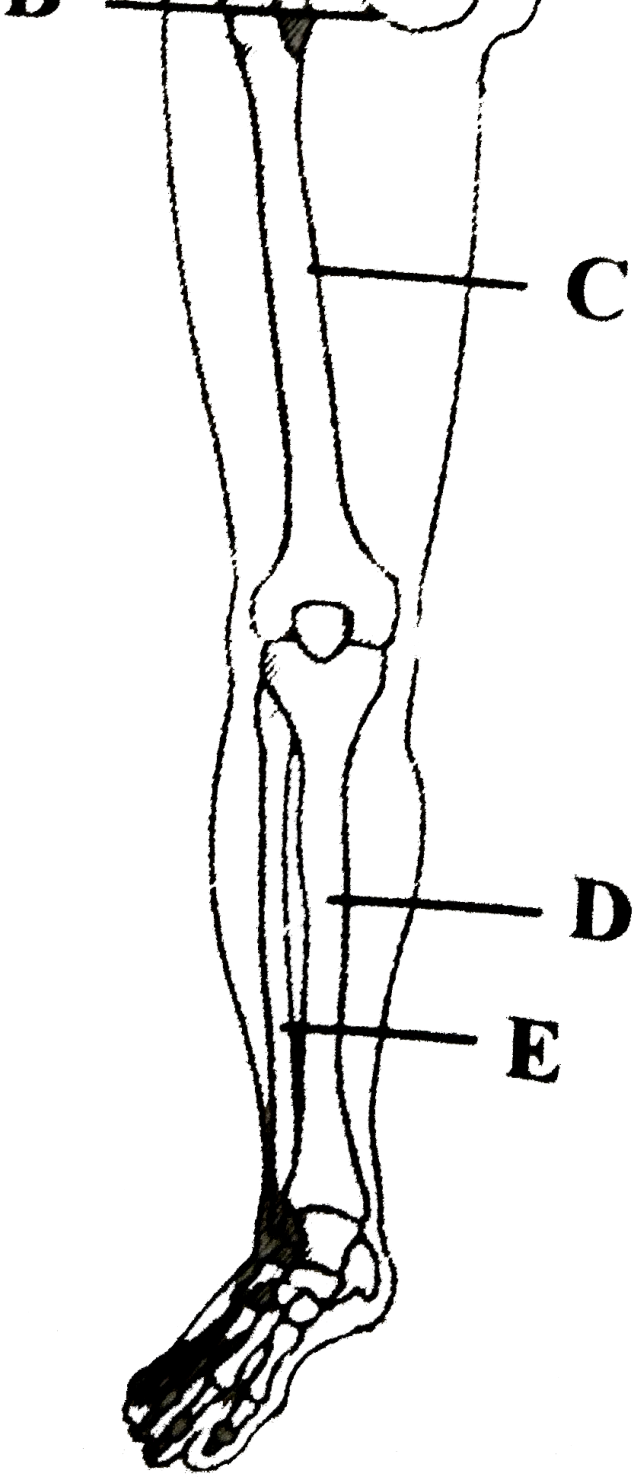
81. The figure Is showing part of right pelvic girdle and lower limb nones.

Identify the parts labelled as A to E and select the correct option.




C
D
E

A.

A	B	C	D	E
Sacrum	Pubis	Patella	Metatarsal	Fibula

B.

A	B	C	D	E
Ilium	Ischium	Femur	Tibia	Fibula

C.

A	B	C	D	E
Ilium	Ischium	Femur	Fibula	Tibia

D.

A	B	C	D	E
Ischium	Ilium	Patella	Tibia	Tarsal

Answer: B

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82. Which of the following statements are incorrect regarding a normal human ?

(i) The skull is dicondlic.

(ii) Metacarplas are are five in numbers.

(iii) Patella is a cup-shaped bone covering and protecting the posterior articular surface of the knee joint. (iv) Scapula is a large triangular flat bone, situated on the ventral side of the thorax.

(v) The pelvic girdle has two coxal bones.

A. (i) and (v)

B. (i) and (ii)

C. (ii) and (v)

D. (iii) and (iv)

Answer: D

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83. The coxal bone of the pelvic girdle is formed by the 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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84. A cricket player is fast chasing ball in the field.Which one of the following group of bones is directly contributing in this movement ?

A. Femur, malleus, tbia, metatarsals

B. Pelvis, incus, petella, tarsal

C. Sternum, femur, tibia,fibula

D. Tarsal, femur, metatarsals,tibia

Answer: D

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85. Complete the following paragraph by selecting the correct option Pelvic girdle consists of two coxal bones. Each coxal bone is formed by the fusion of three bones (i) ,(ii) and (ii) . At the point of fusion of the above bones is a cavity called (iv) to which the thigh bone articultes. The two halves of the pelvic girdle meet ventrally to form the pubic symphysis containing (v) cartilage.

A. calivicle scapula sternum glenoid hyaline

B. ulna radius tarsal acromion fibrous

C. scrum scapula clavicle glenoid yellow

D. ilium ischium pubis acetabulum fibrous

Answer: D

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86. Match column I with column II and select the correct option from the codes given below.

	Column I		Column II
A.	Smooth muscle	(i)	Myoglobin
B.	Tropomyosin	(ii)	Thin filament
C.	Red muscle	(iii)	Sutures
D.	Skull	(iv)	Involuntary

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

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

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

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

Answer: A

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87. 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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88. Which one of the following is 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 9^{th} and 10^{th} pairs of ribs are called the floating ribs.

D. Glenoid cavity is a depression to which the thigh bone articulates.

Answer: A

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89. 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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90. Synovial joint is exemplified by

A. pivot joint

B. hinge joint

C. ball and socket joint

D. all of these

Answer: D

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91. The joint of femur with pelvic girdle is

A. hinge joint

B. non-movable joint

C. pivot joint

D. ball and socket joint

Answer: D

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92. The joint of radio-ulna with the upper arm is

A. hinge joint

B. socket joint

C. pivot joint

D. none of these.

Answer: A

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93. Read the given statements and select the correct option.

Statement 1 : Articulation between the occipital condyles and the atlas vertebra forms a hinge joint.

Statement 2 : It permits the head to move in one plane only, i.e., nodding of head.

A. Both statement 1 and 2 are correct

B. Statement 1 is correct but statement 2 is incorrect

C. Statement 1 is incorrect but statement 2 is correct

D. Both statements 1 and 2 are incorrect

Answer: A

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94. Which one of the following pairs of structures is correctly matched with their description?

A. Tibia and fibula - Both form parts of knee joint

B. Joint between atlas and axis - Pivot joint

C. Shoulder joint - Ball and socket type of joint and elbow joint

D. None of these

Answer: B

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95. The joint in which one of the two bones is fixed in its place and bears a peg like process over which the other bone rotates is called

A. hinge joint

B. saddle joint

C. pivot joint

D. angular joint

Answer: C

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96. The joints between the carpal bones are

A. gliding joints

B. hinge joint

C. Saddle joint pivot joints

D. pivot joints

Answer: A

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97. Which of the following pairs is correctly matched ?

A. Hinge joint - Between vertebrae

B. Gliding joint - Between the carpals

C. Cartilaginous joint - Skull bones

D. Fibrous joint - Between phalanges

Answer: B

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98. Match the two columns and select the correct option from the codes given below.

	Types of synovial joint		Bones involved
A.	Ball and socket	(i)	Carpal and metacarpal of thumb
B.	Hinge	(ii)	Atlas and axis
C.	Pivot	(iii)	Frontal and parietal
D.	Saddle	(iv)	Knee
		(v)	Humerus and pectoral girdle

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

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

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

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

Answer: A

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99. Which of the following is/are not correctly matched pairs?

(i) Ball and socket joint -Between humerus and pectoral girdle

(ii) Pivot joint - Between carpal and metacarpal

(iii) Saddle joint - Between atlas and axis

(iv) Gliding joint - Between the carpals

(v) Fibrous joint - In flat skull bones

A. (ii) and (iii)

B. (i) and (iv)

C. (v) only

D. (ii) only

Answer: A

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100. Match column I with column II and select the correct option from the codes given below. 

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

Answer: B

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101. 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 fuild.

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 blannks in any two the statements ?

A. (C) - Muscular dystrophy, (D) - fascia, (E) - fascicle

B. (A) - Clavicle, (B) - scapla, (C) - Tetany

C. (A) - ilium,(B) ischium, (D) - fascicles, (E) - fascia

D. (C)-Myasthenia gravis, (D)-Fascicles, (E) - fascia

Answer: B

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102. Which of the following is the correct pairing regarding a specific disorder of muscular or skeletal system ?

A. Muscular dystrophy - Age related shortening of muscles

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

C. Myasthenia - Autoimmune disorder which inhibits slididng of myosin filaments

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

Answer: B

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103. Limbalances of certain hormones, deficiencies of calcium and vitamin D are the major causative factors of

A. rheumatoid arthritis

B. osteoporosis

C. osteoarthritis

D. gouty arthritis.

Answer: B

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104. Read the given statements and select the correct option.

Statement 1: Inflammation of a skeletal joint may immobilise the movements of the joint.

Statement 2: This may be caused due to uric acid crystals in the joint cavity and ossification of articular cartilage.

A. Both statement 1 and 2 correct.

B. Statement 1 is correct but statement 2 is incorrect

C. Statement 1 is incorrect but statement 2 is correct

D. Both statements 1 and 2 are incorrect

Answer: A

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105. The accumulation of uric acid crystals in the region of joints resulting in painful movements causes

A. Fluorodosis

B. gout

C. arthritis

D. rheumatoid arthritis

Answer: B

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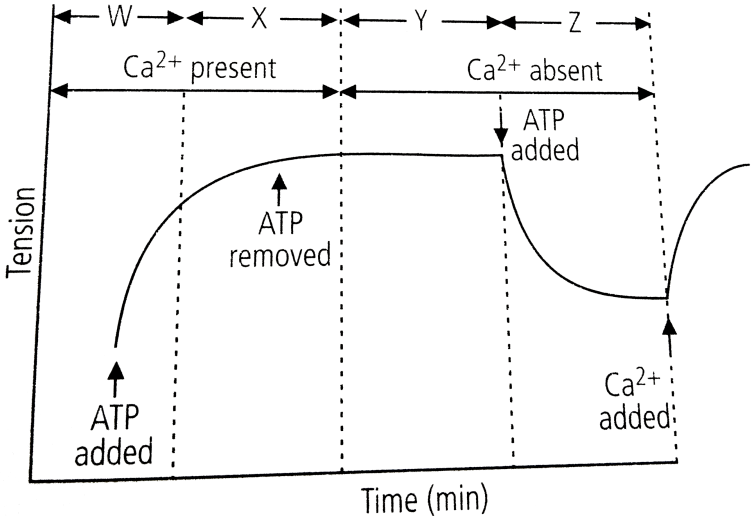
106. Refer to the given graph carefully and answer the following question.



Which of the labelled parts on the graph represents rigor mortis?

A. X

B. W

C. Z

D. Y

Answer: D

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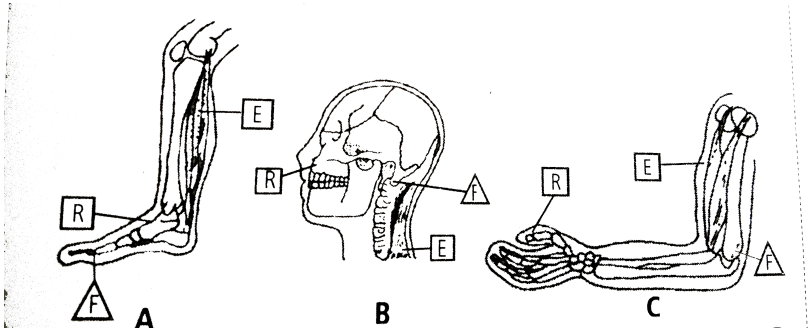
107. Refer to the figures, (A, B and C) and arrange them in an order of list class lever, second class lever and third class lever.



A. B,A,C

B. C,A,B

C. C,B,A

D. A,C,B

Answer: A

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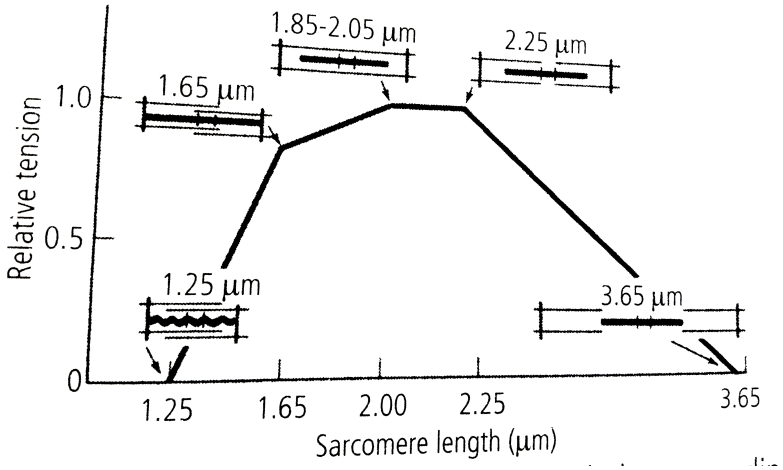
108. The given graph shows length-tension curve for a typical vertebrate sarcomere.



By analysing the graph, what can you deduce regarding the muscle contraction?

(i) Neither the myosin filaments nor the actin thin filaments change in

length when a sarcomere shortens or is stretched. Instead, it is the extent of ocerlap between actin and myosin filaments that changes.

(ii) The total tension produced by a sarcomere is proportional to the total number of cross-bridges that can interact with actin filaments, and this number in turn is proportional to the amount of of overlap between thick and thin filaments.

(iii) The tension produced by the muscle is maximal when the overlap between thick and thin filamentss allows the largest number of myosin cross-bridges to bind to actin.

(iv) Tension drops off with increased lenght, because the thick and thin filaments overlap less and fewer cross-bridges can bind.

Tension drops off with decreased length, because thin filaments at the two ends of the secromere begin to collide with each other, preventing further shortening.

A. (i) Only

B. (i),(iii) and (iv)

C. (i),(iii),(iv) and (v)

D. (i),(ii),(iii),(iv) and (v)

Answer: D

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109. Long distance, competitve runners are usually small and wiry and run more slowly than sprinters, who run much shorter distances and generally have a loarger bulk of nuscles. Which of the following best explains the differences between the two types of runners?

A. Long distance runners run more slowly because lactic acid quickly builds up in muscels and causes fatigue. Sprinters increase the oxygen supply to each muscle, enough for lactic acid to build up in their muscles.

B. The large muscels of sprinters increase the oxygen supply to each muscle, preventing lactic acid from forming.

C. Sprinters do not run for long enough for sufficient lactic acid to build up in their muscles therefore they can have large muscles for

more power. By being lighter and running more slowly long distance runners ensure that their muscles receive enough oxygen for aerobic respiration.

D. sprinters run faster because their large muscles have more blood running through them to stop anaerobic respiration from taking place. Long distance runners run more slowly because they are using the energy from anaerobic respiration, which does not produce as much ATP as aerobic respiration.

Answer: C

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110. Which of the following correctly characterises a "fast-oxidative " type of skeletal muscle fibre?

A. Few mitochondria and high glycogen content

B. Low myosin AT Pase rate and few surrounding capillaries

C. Low glycolytic enzyme activity and intermediate contraction velocity

D. High myoglobin content and intermediate glycolytic enzyme activity

Answer: D

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111. Match the following and mark the correct option

Column I		Column II	
A.	Fast muscle fibres	(i)	Myoglobin
B.	Slow muscle fibres	(ii)	Lactic acid
C.	Actin filament	(iii)	Contractile unit
D.	Sarcomere	(iv)	I-band

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

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

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

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

Answer: C

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112. Ribs are attached to

A. scapula

B. sternum

C. clavicle

D. ilium

Answer: B

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113. 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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114. ATPase of the type muscle is located in

A. actinin

B. troponin

C. myosin

D. actin

Answer: C

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115. Intervertbral disc is found in the vertebral column of

A. birds

B. reptiles

C. mammals

D. amphibians

Answer: C

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116. 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. Cervial-thoracic-lumbar-sacral-coccygeal

Answer: D

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117. Which one of the following options is incorrect ?

A. Hinge joint-between humerus and pectoral girdle

B. Pivot joint-between atlas, axis and occipital condyle

C. Gliding joint-between the carpals

D. Saddle joint-between carpal and metacarpals of thumb

Answer: A

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118. Knee joint and elbow joints are examles of

A. Saddle joint

B. ball and socket joint

C. pivot joint

D. hinge joint

Answer: D

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119. Macrophages and leucocytes exhibit

A. ciliary movement

B. flagellar movement

C. amoeboid movement

D. gliding movement

Answer: C

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

A. Arthritis

B. Osteoporosis

C. Rickets

D. Atherosclerosis

Answer: D

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121. Which one of the following statements is incorrect?

A. Heart muscls are striated and involuntary

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

C. The muscles 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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122. Which one of the following statements is true?

A. Head of humerus bone articulate 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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123. Muscles with characteristic striations and in- voluntary 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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124. Match the followings and mark the correct option.

Column I		Column II
A. Sternum	(i)	Synovial fluid
B. Glenoid cavity	(ii)	Vertebrae
C. Freely movable joint	(iii)	Pectoral girdle
D. Cartilaginous joint	(iv)	Flat bones

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

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

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

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

Answer: B

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125. Assertion: Visceral muscles are smooth in appearance.

Reason: Many muscle cells assemble in a branching pattern to from a visceral muscle.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: c

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126. Assertion: Muscle fibre is a syncitium.

Reason: Muscle fibre has a large number of parallelly arraaged myofilaments in the sarcoplasm.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: b

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127. Assertion: Biceps and triceps are antagonistic muscles

Reason: The biceps flexes the arm and the tr4iceps straightens the arm.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: a

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128. Assertion: Mechanism of muscle contraction is expalained by sliding-filaments theory.

Reason: Contraction of muscle fibre takes place by the sliding of thick filaments over the thin filaments.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: c

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129. Assertion: on stimulation, a muscle cell releases calcium ions $\left(Ca^{2+}\right)$ from sarcoplasmic reticulum.

Reason: By reacting with a protien complex, Ca^{2+} uncover active sites on the actin filaments.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: b

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130. Assertion: The portion of the myofibril between two successive Z-lines is considered as the functional unit of contraction called sarcomere. Reason: During contraction, l-bands get reduced whereas A-bands retain the length , thereby causing shortening of the sarcomere.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: b

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131. Assertion: A person undergoes fatigue very soon during exercies.

Reason : Muscle fibres undergo oxygen debt during exercies.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: b

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132. Assertion: Red muscles depend on anaerobic process for energy.

Reason: Red muscles have few number of mitrochondira in them

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: d

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133. Assertion: Bone has very hard matrix whereas cartilage has pliable matrix.

Reason: Bone has calcium salts in its matrix whereas cartilage has chondroitin salts in its matrix.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: a

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134. Assertion: Human has dicondylic skull.

Reason: Skull articulates with superior region of the vertebral column with the help of two occipital condyles.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: a

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135. Assertion: First seven pairs of ribs are called true ribs.

Reason: These ribs are not connected ventrally to the sternum.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: c

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136. Assertion: Ulna is logner than radius.

Reason: It has large olecranon process.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: A

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137. Assertion: Fibrous joints play a significant role in locomotion.

Reason: Fibrous joints have fluid-filled cavity between the articulating surfaces of the two bones.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: d

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138. Assertion: The joint between the atlas and axis is an example of gliding joint.

Reason: Gliding joint allows movement primarily in one plane.

A. If both assertion and reason are ture and reason is the corect explanation of assertion

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

C. If assertion is true reason is false

D. If both assertion and reason are false

Answer: d

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139. Assertion: Tetany is rapid spasm in muscle.

Reason: Tetany is usually caused by an increases in the blood calcium level.

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 reason is false

D. If both assertion and reason are false

Answer: c

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