

# **BIOLOGY**

# **BOOKS - SANTRA BIOLOGY (BENGALI ENGLISH)**

# **MOVEMENT AND LOCOMOTION**

# **Multiple Choice Questions**

- 1. The biceps and triceps muscles are found in
  - A. thigh
  - B. floating ribs
  - C. lower jaw
  - D. forearm

# Answer: D



was all wilders of least and

| watch video Solution                                           |
|----------------------------------------------------------------|
|                                                                |
| 2. Which of the following muscles bend the forearm upwards?    |
| A. triceps                                                     |
| B. biceps                                                      |
| C. gluteus maximus                                             |
| D. gastrocnemius                                               |
| Answer: B  Watch Video Solution                                |
|                                                                |
| 3. Which of the following bones are the longest in the body ?. |
| A. two femurs                                                  |
| B. two unlas                                                   |
| C. two tibias                                                  |
|                                                                |

| D. two fibulas                              |
|---------------------------------------------|
| Answer: A                                   |
| Watch Video Solution                        |
|                                             |
| 4. The ends of two bones are connected by   |
| A. tendons                                  |
| B. ligaments                                |
| C. muscles                                  |
| D. cartilages                               |
|                                             |
| Answer: B                                   |
| Watch Video Solution                        |
|                                             |
| 5. An individual muscle fibre is wrapped by |

A. endomysium B. epimysium C. sarcomeres D. perimysium Answer: A **Watch Video Solution** 6. A pivot joint can be found between A. radius and ulna B. tibia and fibula C. clavicle and sternum D. scapula and humerus Answer: A **Watch Video Solution** 

| 7. The ribs articulate with the                             |
|-------------------------------------------------------------|
| A. sacrum                                                   |
| B. lumbar vertebrae                                         |
| C. thoracic vertebrae                                       |
| D. cervical vertebrae                                       |
| Answer: C  Watch Video Solution                             |
|                                                             |
| 8. What is the term used for the opening or hole in a bone? |
| A. fossa                                                    |
| B. tubercle                                                 |
|                                                             |
| C. process                                                  |

| Answer: D                                                                               |
|-----------------------------------------------------------------------------------------|
| Watch Video Solution                                                                    |
|                                                                                         |
| 9. Which of the following diarthrotic joints allow for the greatest degree of movement? |
| A. pivot                                                                                |
| B. gliding                                                                              |
| C. ball and socket                                                                      |
| D. hinge                                                                                |
|                                                                                         |

D. forearm

**Answer: C** 

Watch Video Solution

| ·                                                                |
|------------------------------------------------------------------|
| A. action potential                                              |
| B. ATP                                                           |
| C. $Ca^{2+}$                                                     |
| D. all of the above                                              |
|                                                                  |
| Answer: D                                                        |
| Watch Video Solution                                             |
|                                                                  |
|                                                                  |
| 11. Synovial joints may be classified into subtypes according to |
| A. shape                                                         |
| B. number of bones                                               |
| C. amount of synovial fluid                                      |
| D. amount of cartilage                                           |

10. Muscle contraction requires

# Answer: A



Watch Video Solution

- 12. Which of the following is involved in muscle contraction?
  - A. troponin
  - B.  $Ca^{2+}$
  - C. creatine phosphokinase
  - D. all of the above

# **Answer: D**



Watch Video Solution

**13.** Which of the following changes occur when a skeletal muscle contracts?

- A. 1 bands shorten B. actin filaments contract C. A abnds shorten D. Z lines slide farther apart Answer: A **Watch Video Solution** 
  - 14. Which one of the following is mismatched?
    - A. hinge joint-hip
    - B. immovable joint--sutures in cranium
    - C. synovial joint-elbow
    - D. slightly movable joint vertebrae.



Answer: A

**Watch Video Solution** 

| <b>15.</b> When muscles conti | act |
|-------------------------------|-----|
|-------------------------------|-----|

- A. myosin slides past actin
- B. calcium is taken up by calcium storage sacs
- C. sarcomeres increase in size
- D. H zone disappears

# **Answer: D**

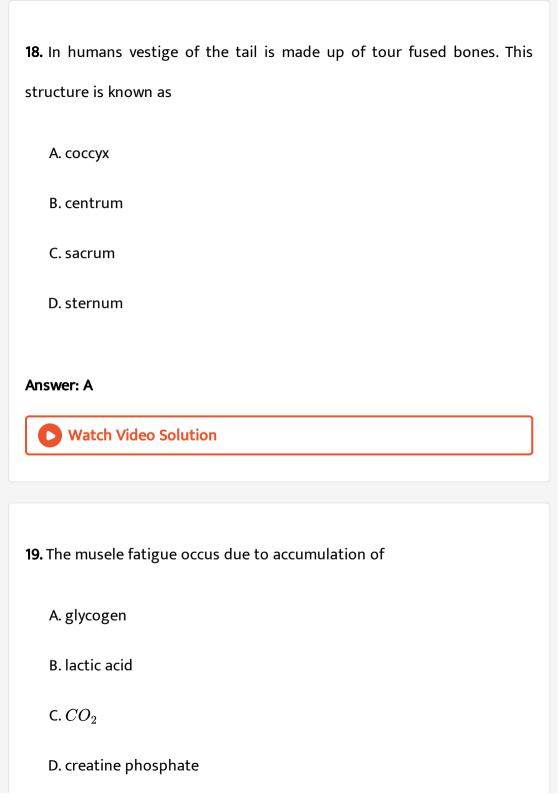


**Watch Video Solution** 

# 16. Humerus bone is present in the

- A. lower arm
- B. thigh
- C. upper arm

| D. lower jaw                                |
|---------------------------------------------|
| Answer: C                                   |
| Watch Video Solution                        |
|                                             |
| 17. The vertebrae atlas and axis belongs to |
| A. cervial                                  |
| B. coccygeal                                |
| C. thoratic                                 |
| D. lumbar                                   |
| Answer: A                                   |
| Watch Video Solution                        |



# Answer: B Watch Video Solution 20. The proteins found in filaments of muscle fibres are A. action only B. actin and myosin C. myelin and tubulin

D. myosin and elastin

**Watch Video Solution** 

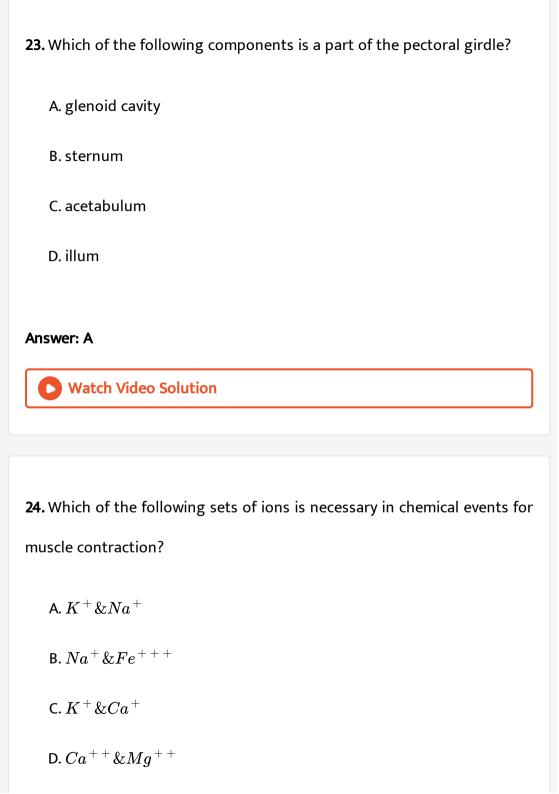
A. hinge joint

21. The joint between human skill bones is

**Answer: B** 

C. immovable joint D. synovial joint Answer: C **Watch Video Solution** 22. Innomiate is A. an artery B. a nerve C. a part of skeleton and an artery D. a vein **Answer: C Watch Video Solution** 

B. cartilaginous joint



# Answer: D **Watch Video Solution** 25. The strongest muscle of the bod is found in A. thigh B. fingers C. wrist D. jaws **Answer: D Watch Video Solution**

**26.** Which of the following bones is the only bone in the body that is not in contact with another bone?

A. atlas B. floating ribs C. hyoid bone D. ethmoid bone **Answer: C Watch Video Solution** 27. Which of the following structures provides flexibility to a joint while at the same time resisting dislocation? A. muscles B. ligaments C. articular cartilage D. synovial fluid **Answer: B** 



**28.** In a skeletal muscle cell, which of the following is the basic unit of contraction

A. myofibril

B. mvosin filament

C. muscle fibre

D. sarcomere

# **Answer: D**



**Watch Video Solution** 

**29.** The parietal bone is the example of which of the following types of bones

A. long

| B. irregular                                                                |
|-----------------------------------------------------------------------------|
| C. short                                                                    |
| D. flat                                                                     |
| Answer: D                                                                   |
| Watch Video Solution                                                        |
|                                                                             |
| <b>30.</b> Which of the following is not a result of muscular contraction ? |
| A. motion                                                                   |
| B. maintenance of posture                                                   |
| C.                                                                          |
| D. production of heat                                                       |
| Answer: C                                                                   |
|                                                                             |
| Watch Video Solution                                                        |
|                                                                             |

| <b>31.</b> ATP for muscle contraction can be formed by       |
|--------------------------------------------------------------|
| A. glycolysis                                                |
| B. aerobic respiration                                       |
| C. creatine phosphate breakdown                              |
| D. all of the above                                          |
|                                                              |
| Answer: D                                                    |
| Watch Video Solution                                         |
|                                                              |
|                                                              |
| 32. Which of the following has a sigmoid notch?              |
| 32. Which of the following has a sigmoid notch?  A. humerus. |
|                                                              |
| A. humerus.                                                  |
| A. humerus. B. femur                                         |

# Answer: C



**33.** Repetitive muscular activity at moderate levels, such as weight training can result in

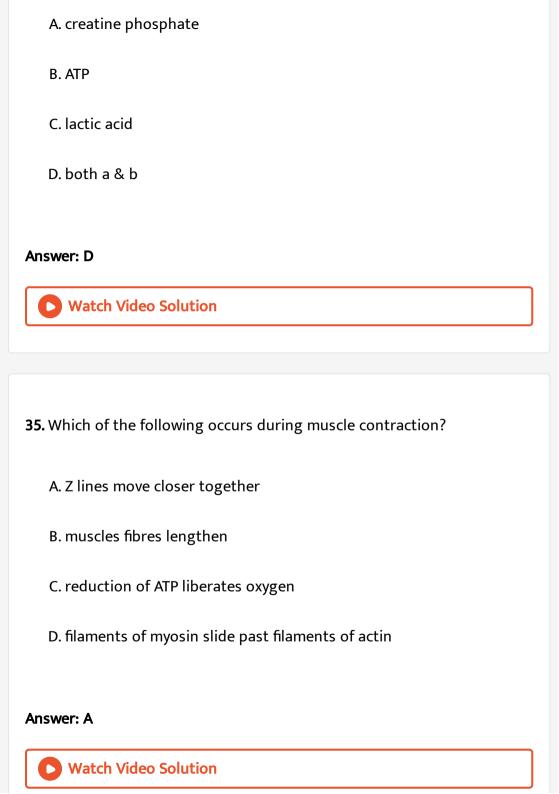
- A. Mood swings
- B. a decline in health
- C. denervation atrophy
- D. muscular hypertrophy

# Answer: D



Watch Video Solution

**34.** Which oi the following is the direct source of energy for muscle contraction?



**36.** Following muscle contraction in response to a stimulus, the muscle temporarily cannot respond. This known as

A. motor end plate

B. summation period

C. refractory period

D.  $O_2$ debt

# **Answer: C**



**Watch Video Solution** 

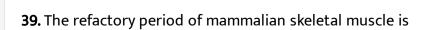
**37.** Voluntary and non-voluntary muscle are classified

A. according to the structure

B. according to the function

C. both a and b

D. according to the distribution **Answer: B Watch Video Solution** 38. Skeletal muscle constitute about A. 20%-30% body weight B. 30%-40% body weight C. 40%-45% body weight D. 45%-50% body weight **Answer: C Watch Video Solution** 



A. 0.005 sec B. 0.002 sec C. 0.003 sec D. 0.02 sec **Answer: B** Watch Video Solution 40. The minimum strength of galvanic current required to flow indefinitely to excite a muscle is called A. latent period B. chronaxie C. clonus D. rheobase **Answer: B** 

- 41. Inter-articular disc occurs in
  - A. wall of liver
  - B. in between two vertebrae
  - C. wall of heart
  - D. pubic symphysis

### **Answer: B**



**Watch Video Solution** 

- 42. Which is true of muscle contraction?
  - A. sarcolemma becomes permeable to  ${\it Na}^+$  ions
  - B. concentration of  $Ca^{2\,+}$  ions is reduced in myoplasm
  - C. sarcolemma becomes nonpermeable to  $Na^{\,+}$  ions

| D. sarcolemma becomes permeable to ${\it Ca}^+$ ions |
|------------------------------------------------------|
| Answer: A                                            |
| Watch Video Solution                                 |
|                                                      |
| <b>43.</b> Astragalus and calcaneum are part of      |
| A. clavicle                                          |
| B. scapula                                           |
| C. hind limb                                         |
| D. fore limb                                         |
| Answer: C                                            |
| Watch Video Solution                                 |
|                                                      |
| 44. Which opening occurs in a pair?                  |

C. obturator foramen D. foramen ovalis **Answer: C** Watch Video Solution 45. Muscular and nervous excitability is redued by A.  $K^+$ B.  $Ca^{2+}$ C.  $Mg^{2\,+}$ D.  $Na^+$ **Answer: A** Watch Video Solution

A. foramen magnum

B. fenstra rotundus

| <b>46.</b> Joint between atlas and odontoid process of           |
|------------------------------------------------------------------|
| A. hinge joint                                                   |
| B. angular joint                                                 |
| C. pivot joint                                                   |
| D. saddle joint                                                  |
| Answer: C  Watch Video Solution                                  |
|                                                                  |
| 47. In hurdle race, what is major source of energy to leg muscle |
| A. oxidation metabolism                                          |
| B. glycolysis                                                    |
| C. pyruvate and lactate                                          |

| D. preformed ATP                                                           |
|----------------------------------------------------------------------------|
|                                                                            |
| Answer: D                                                                  |
| Watch Video Solution                                                       |
|                                                                            |
|                                                                            |
| <b>18.</b> On stimulation of skeletal muscle, calcium is immedialtely made |
| available for binding to troponin from                                     |
| A. lymph                                                                   |
| B. bone                                                                    |

C. sarcoplasmic reticulum

Watch Video Solution

D. blood

**Answer: C** 

- **49.** Which is wrongly matched

  A. tendon-connective tissue
  - B. smooth muscle -involuntary muscle
  - C. myosin- contractile protein
  - D. troponin-fibrous protein

# **Answer: D**



**Watch Video Solution** 

- **50.** Centrum of 8th vertebrae of frog is
  - A. acoelous
  - B. amphicoelous
  - C. procoelous
  - D. amphiplatyan

# Answer: B



**51.** The unpaired facial bone is

A. nasal

B. palatine

C. vomer

D. lacrimal

# **Answer: C**



Watch Video Solution

**52.** Wall of internal organs (stomach, intestine, blood vessel) contain muscles

A. smooth B. striped C. cardiac D. none of the above Answer: A **Watch Video Solution** 53. The paget's disease is cause by A. excessive alkaline phosphate B. prolonged deficiency of Vitamin D in adults C. excess production and abnormal organisation of collagen D. abnormal bone resorption by abnormal osteoclasts Answer: D **Watch Video Solution** 

**54.** The function of  $Na^+$  and  $K^+$  pump is to

A.  $Cl^-$  out and  $Na^+$  in

B.  $Na^+$  out and  $K^+$  in

 $C. Na^+$ out and  $Cl^-$ in

D.  $K^+$  out and  $Na^+$  in

# **Answer: C**



**55.** Liver necrosis and muscular dystrophy are caused by the lack of this trace element

A. arsenic

B. selenium

C. zinc

| D. molybdenum                                                       |
|---------------------------------------------------------------------|
| Answer: B  Watch Video Solution                                     |
|                                                                     |
| <b>56.</b> Energy is stored in the liver and muscles in the form of |
| A. glycogen                                                         |
| B. protein                                                          |
| C. fat                                                              |
| D. carbohydrates                                                    |
|                                                                     |
| Answer: A                                                           |
| Watch Video Solution                                                |
|                                                                     |
|                                                                     |
| 57. In human beings the cranium is formed by                        |

A. ten bones of which two are paired B. eight bones of which are paired C. tweleve bones of which four are paired D. fouteen bones of which six are paired **Answer: B Watch Video Solution** 58. Which ribs show "bucket-handle" type of movement?

B. rib no. 1-2

D. rib no. 6-10

C. rib no. 11-12

A. rib no. 3-5

Answer: D



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

A. cardiac musle fibre

B. smooth muscle fibre

C. both a and b

D. striped muscle fibre

#### **Answer: B**



**60.** Which of the following is the correct description of a certain part of a normal human skeleton?

A. glenoid cavity is depression to which the thigh bone articulates

B. the 9th and 10th pairs of ribs are called the floating ribs

C. first vertebrae is axis which articulates with the occipital condyles

D. parietal bone and the temporal bone of the skull are joined by fibrous joint

Answer: D

Watch Video Solution

**61.** The number of occipital condyles is man is/are.

A. two

B. four

C. five

D. three

Answer: A



62. The matrix of bone and cartilage can be distinguished by the presence of A. lacuna

B. chromatophores

D. haversian canal

C. adipose cells

#### **Answer: D**



**63.** Low  $Ca^{+\,+}$  in the body fluid may be the cause of

A. gout

B. tetany

C. angina pectoris

D. anaemia

## Answer: A



Watch Video Solution

**64.** Progressive degeneration of skeletal muscle, mostly due to genetic disorder occurs in

- A. arthritis
- B. myasthenia gravis
- C. osteoporosis
- D. muscular dystrophy

#### **Answer: D**



Watch Video Solution

**65.** Which of the 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 a sensory

neurone

III. during muscle contraction, isotropic band gets elongated.

IV. repeated activation of the muscles can lead to lactic acid accumulation.

A. I & II are correct

B. II & III are correct

C. I, II & III are correct

D. I & IV are correct

#### Answer: D



**Watch Video Solution** 

66. Scapula is a arge triangular flat bone situated in the dorsal part of the thorax between

- A. the second and seventh ribs B. the fourth and seventh ribs C. the second and fifth ribs D. the third and sixth ribs Answer: A **Watch Video Solution**
- **67.** The type of muscles present in our

  - B. thigh are straiated and voluntar
  - C. upper arm are smooth muscle fibres fusiform in shape

A. heart are involuntary and unstriated smooth muscles

D. intestine are striated and voluntary

# Answer: B



- 68. Actin bindings sites are located on
  - A. booth troponin and tropomysin
  - B. troponin
  - C. both tropomyosin and meromyosin
  - D. Meromyosin

#### **Answer: D**



- **69.** The coxal of the pelvic girdle is formed by the fusion of
  - A. scapula and clavicle
  - B. ilium & scapula
  - C. ilium, ischium and pubis

D. clavicle and pubis

#### **Answer: C**



**Watch Video Solution** 

**70.** Selected the correct statement regarding the specific disorder of muscular or skeletal system.

A. myasthenia gravis-auto immune disorder which inhibits sliding of myosin filaments

B. gout-inflammation of joints due to extra deposition of calcium

C. muscular dystrphy-age related shortening of muscles

D.

#### **Answer: D**



- 71. The H-zone in the skeletal muscle fibre is due to
  - A. the central gap between mysoin filaments in the A-band
  - B. extension of myosin filaments in the central portion of the A-band
  - C. the central gap between actin filaments extendin through myosin filaments in the A-band
  - D. the absence of myofibrils in the central portion of A-band

#### Answer: A



- **72.** Select the correct statement with respect to locomotion in humans
  - A. a decreased level of progesterone causes osteoporosis in old people
    - B. the vertebral column has 10 thoracic vertebrae
    - C. the joints between adjacent vertebrae is a fibrous joint

D. accumulartion of uric acid crystals in joints causes their inflamtion

#### Answer: D



**Watch Video Solution** 

Characteristics

Characteristics

73. The characteristics and an example of synovial joint in humans is

A.

Characteristics Examples (a) fluid filled between two joints, provides cushion skull bones

B.

Examples

joint between a

Exan

(b)

C.

fluid filled synovial cavity between two bones

Characteristics Example lymph filled between two bones, limited movement gliding jo (c)

D.

(*d*) fluid cartilatge between two bones, limited movements knee

Answer: B



**74.** Which of the following is not involved in muscular contraction?

A. Calcium ion

B. Troponin

C. Actin

D. Magnesium ion

## Answer: D



**75.** Knee joint is an example of

A. ball and socket joint

B. hinge joint

C. pivot joint

| D. gliding joint                                |
|-------------------------------------------------|
| Answer: B                                       |
| Watch Video Solution                            |
|                                                 |
| <b>76.</b> The globular head of myosin contains |
| A. calcium ions in large quantities             |
| B. troponin                                     |
| C. ATPase enzyme                                |
| D. ATP                                          |
| Answer: C                                       |
| Watch Video Solution                            |

77. For the given statements 'X' and 'Y', which option is the correct option

Statement 'X' Red muscle are also called aerobic muscle

Statement 'Y' Red muscle posses large amount of mitochondria which can utilise large amount of oxygen stored in them for ATP production.

A. Statement 'X' is correct and 'Y' is incorrect

B. Statement 'X' and 'Y' are correct and Statement 'Y' is incorrect explanation of 'X'.

C. Statement 'X' is incorrect and 'Y' is correct

D. Statement 'X' and 'Y' are correct and statement 'Y' is correct explanation for 'X'

#### **Answer: D**



**Watch Video Solution** 

78. The structural unit of bone is

C. osteon D. ossein **Answer: C Watch Video Solution** 79. Identify vertebrochondral ribs from the following A. All 12 pairs of ribs B. 1st to 7th pairs of ribs C. 8th, 9th and 10th paris of ribs D. 11th and 12th pairs of ribs Answer: C Watch Video Solution

A. chondrin

B. cyton

## **80.** Glenoid cavity articulates

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

#### **Answer: A**



**Watch Video Solution** 

#### 81. The H-zone of muscle fibre

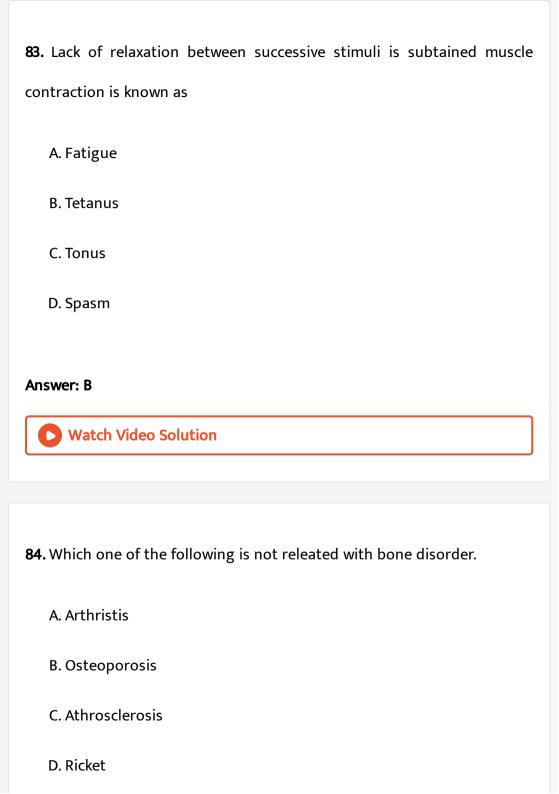
- A. Only actin present
- B. Only myosin present
- C. Both actin and myosin present

| D. Only tropamyosin present.                |
|---------------------------------------------|
| Answer: B                                   |
| Watch Video Solution                        |
|                                             |
| 82. Smooth muscles are                      |
| A. Voluntary, spindle shaped, uninucleated. |
| B. Involuntary, fusitorm, Kon striated      |
| C. Voluntary, multinucleated, cylindrical.  |

D. Involuntary, cylindrical, striated

Watch Video Solution

**Answer: B** 



# **Answer: C Watch Video Solution** 85. Intercalated disc is found in A. Skeletal muscle B. Smooth muscle C. Cardiac muscle D. None of these





**86.** Which one of the following is not a property of white muscle

A. Z line is narrow

C. Twitch time is much less D. Can function for a long time, do not get fatigued easily **Answer: D Watch Video Solution** 87. The pivot joint between the atlas and axis is a type fo A. Cartilaginous joint B. Synovial joint C. Saddle joint D. Fibrous joint **Answer: B Watch Video Solution** 

B. Presence of reduced amount of myoglobin

**88.** Out of 'X' pairs of ribs in human only 'Y' pairs are true ribs. Select the option that correctly represents values of X and Y and provides their explanation

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

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

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

D. X=12, Y=7, True ribs are attached dorsally to ventral column and ventrally to the sternum

#### **Answer: D**



- 1. Which are correct?
  - A.  $Na^+$  ions helps retain water
  - B.  $Na^+$  ions transport substances across membrane
  - C.  $Na^+$  ions takes part in thermo regulation
  - D.  $Na^+$  ions helps in conduction of nerve impulse

#### Answer: A::B::D



**Watch Video Solution** 

- 2. Select the incorrect statements regarding the specific disorder
  - A. Osteoporosis: decrease in bone mass and higher chances of

factures with advancing age

B. Myasthenia gravis: autoimmune disorder which inhibits sliding of

myosin filaments

- C. Gout: inflamation of calcium due to extra deposition of calcium.
- D. Muscular dystrophy: age related shortening of muscle

Answer: B::C::D



- 3. Select correct statements with respect to locomotion in humans.
  - A. accumulation of uric acid in joints kinuses their inflamation.
  - B. the vertebral column has 12 thoracic vertehrae
  - C. the joint between adjicent vertebrac is a fibrous Joint
  - D. the decreased level of progesterone causes osteoporsis in old people

Answer: A::B



**4.** In case of slow twitch muscle, which of the following statements are correct?

A. it has less ATPase activity

B. it has more mitochondria.

C. it has less myoglobin

D. it obtains energy by aerobic respiration

#### Answer: A::B::D



- 5. Which of thie Following statements ar correct?
  - A. heart muscles are voluntary
  - B. the muscles of hands and legs are striated and voluntary
  - C. the muscles located in the inner walls of alimentary canal are

unstraiated and involunary

D. muscles located in the respiratory tracts are unstraiated and involuntary

#### Answer: B::C::D



6. Which of the following are correct about smooth muscle?

A. rhythmicity

B. tetanus

C. all or none law

D. refractory period

## Answer: A::C



- **7.** Which of the following are true?
  - A. acting present in thin filament
  - B. H zone of striated muscle fibre represents both thick and thin filaments
  - C. human skeleton has 206 bones
  - D. stermum is present on the ventral side of the body.

#### Answer: A::C::D



- **8.** Which of the following pairs are correct?
  - A. Flexor muscle-biceps
  - B. Extensor muscle-tricepes
  - C. Adductor muscle

| D. Abductor muscle- deltoid                 |  |
|---------------------------------------------|--|
| Answer: A::B::D                             |  |
| Watch Video Solution                        |  |
|                                             |  |
|                                             |  |
| 9. Which of the following pairs are correct |  |
| A. troponin-I-affinity to actin protein     |  |

B. troponin-T- affinity to tropomyosin

C. troponin-C- affinity to calcium ions

D. I zone- actin filament

## Answer: A::B::C::D



**Watch Video Solution** 

10. Which of the following pairs are correct?

- A. axis and atlas-pivot joint
- B. carpal and metacarpal-saddle joint
- C. between phalangescartilaginous joint
- D. between cranial bones-fibrous joint

#### Answer: A::B::D



**Watch Video Solution** 

- - A. actin filament-I band
  - B. sarcomere-Z band
  - C. smooth muscle involuntary and striaied

11. Which of the following pairs are correct?

D. cardiac muscle- striated and intercalated disc

## Answer: A::B::D



| <b>2.</b> Which of the following are true about human skeleton? |
|-----------------------------------------------------------------|
|-----------------------------------------------------------------|

- A. skull is dicondylic
- B. metacarpals are five in numbers
- C. petella is a cup-shaped bone covering the knee dorsally
- D. scapula is a large angular flat bone situated the ventral side of thorax

#### Answer: A::B::D



- 13. Which of the following event occuring in muscular contain?
  - A. H-zone disappears
  - B. A-band widness

- C. I-band reduces in width

  D. M-line and Z-line come closer
- Answer: A::C::D

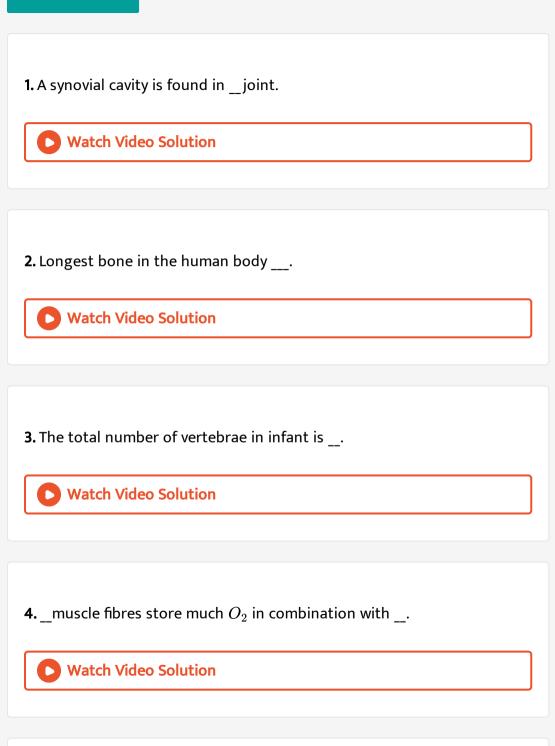


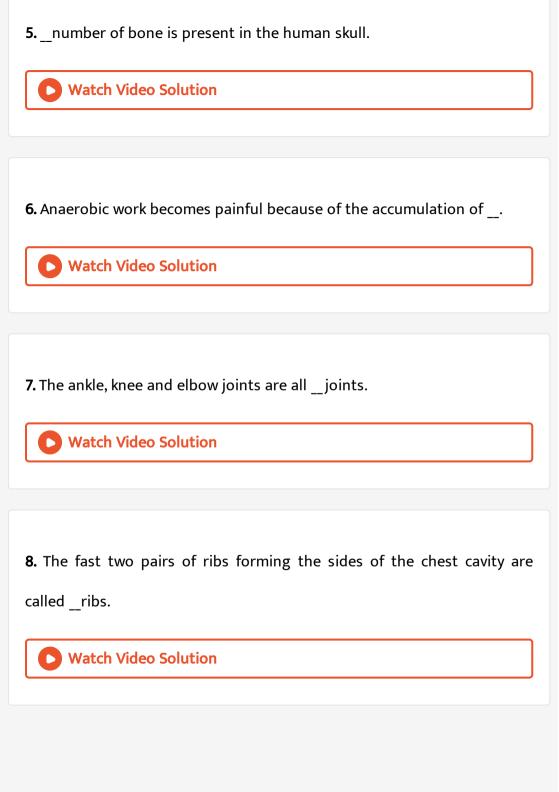
- 14. Which of the following statements are incorrect?
  - A. 1st vertebra is axis which with occipital condyles
  - B. partietal bone and temporal bone of skull are jointed by fibrous joint
  - C. 9th and 10th pairs of ribs are called floating ribs
  - D. glenoid cavity is depression to which thigh bone articulates

#### Answer: A::C

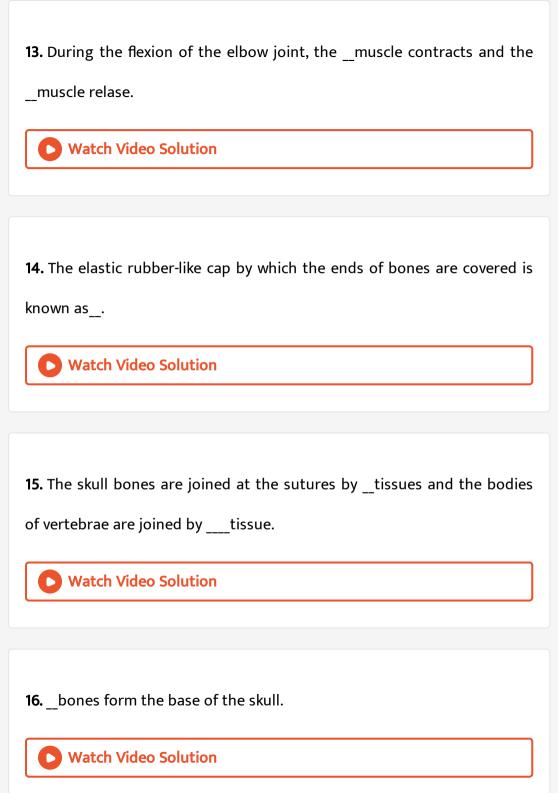


# Fill In The Blanks





| <b>9.</b> The total number of muscles in the body of man is                                                 |
|-------------------------------------------------------------------------------------------------------------|
| Watch Video Solution                                                                                        |
|                                                                                                             |
| <b>10.</b> The all-or-none law of muscle contraction refers to a maximum contraction or no contraction of a |
| Watch Video Solution                                                                                        |
|                                                                                                             |
| 11is an example of the articulation of femur and pelvic girdle.                                             |
| Watch Video Solution                                                                                        |
|                                                                                                             |
| <b>12.</b> In the human body the number of bones is                                                         |
| Watch Video Solution                                                                                        |
|                                                                                                             |



17. Latent period is required for the \_\_ to the impulse from the \_\_to muscle.

Watch Video Solution

**18.** Muscle protein \_binds  $Ca^{2+}$  that is released from the sarcoptasmic reticulum.



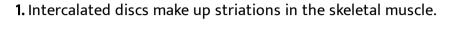
19. \_proposed the sliding filament theory of muscle contraction.



**20.** The transparent cell wall of the muscle fibre is named as .



## True Or False Statement Questions





**2.** The strongest muscle in the body is present in the jaw.

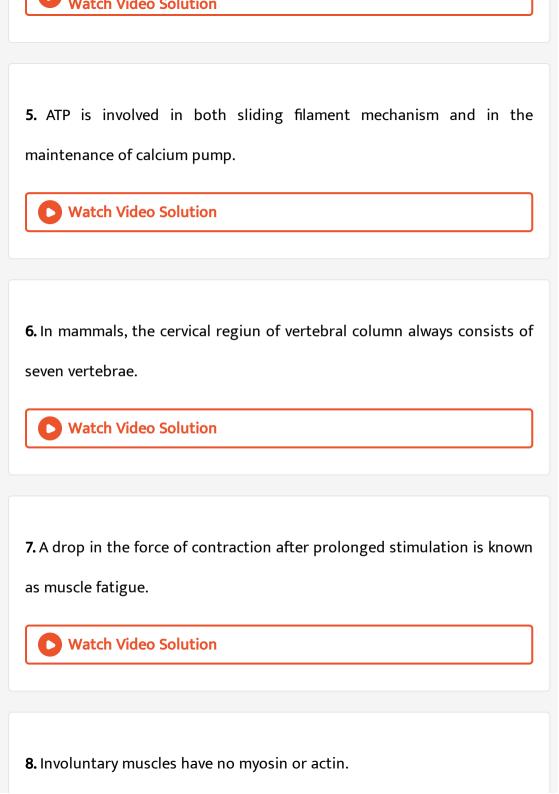


**3.** Actin is a globular protein which assembles as a long beady structure consisting of two helical chains.



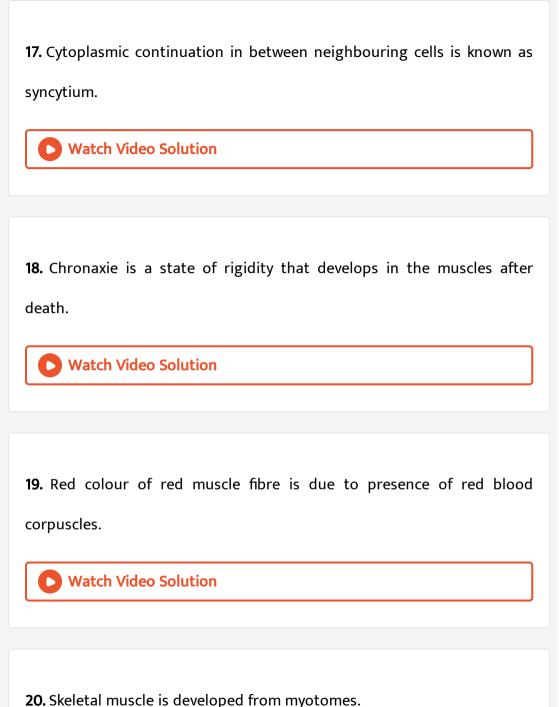
**4.** The only movable bone in the skuil is the mandible.





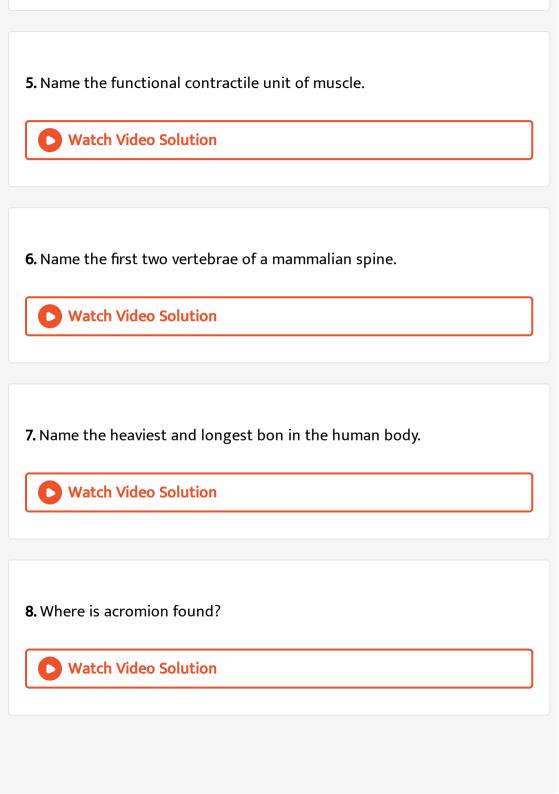
| Watch Video Solution                                     |
|----------------------------------------------------------|
|                                                          |
| 9. Slow muscle fibres posses myoglobin.                  |
| Watch Video Solution                                     |
|                                                          |
| 10. Humerus have a sigmoid notch.                        |
| Watch Video Solution                                     |
|                                                          |
| 11. Appendicular skeleton form the axis of the skeleton. |
| Watch Video Solution                                     |
|                                                          |
| <b>12.</b> Oesteoporosis is a common disease of bone.    |
| Watch Video Solution                                     |
|                                                          |

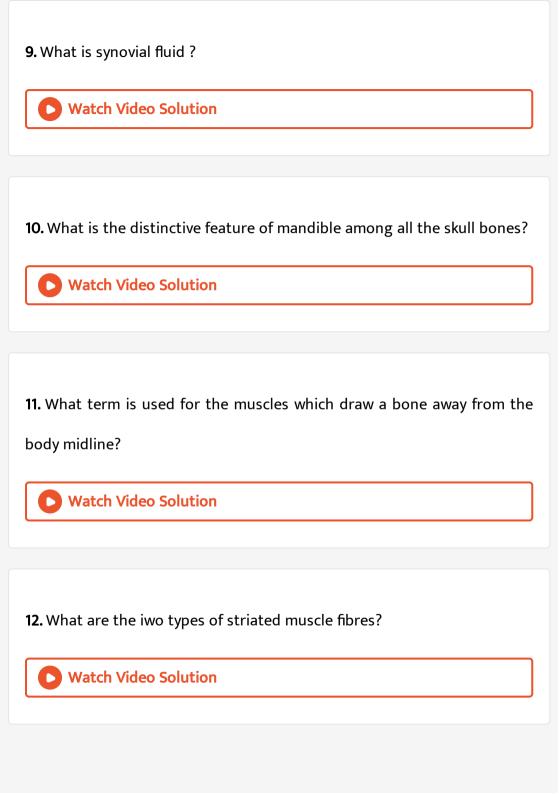
| 13. During muscle contraction Z-lines get closer.                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------|
| Watch Video Solution                                                                                                               |
|                                                                                                                                    |
| <b>14.</b> Paramoecium shows flagellar movement.                                                                                   |
| Watch Video Solution                                                                                                               |
|                                                                                                                                    |
| <b>15.</b> Smooth muscles maintain posture of the body.                                                                            |
| Watch Video Solution                                                                                                               |
|                                                                                                                                    |
| <b>16.</b> The sarcoplasmic reticulum is identical with the endoplasmic recticulum of other cell type, with exception of ribosome. |
| Watch Video Solution                                                                                                               |
|                                                                                                                                    |

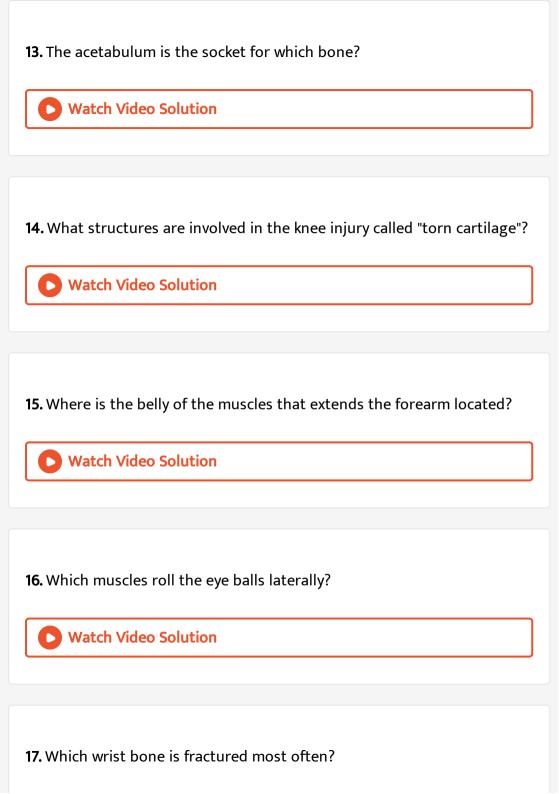


Watch Video Solution

## **Very Short Answer Type Questions** 1. Explain a synovial joint. **Watch Video Solution** 2. Name the cells that synthesize collagen. **Watch Video Solution** 3. Which type of movable joint makes the hip joint? **Watch Video Solution** 4. Name the chemical that causes fatigue in the muscle. **Watch Video Solution**



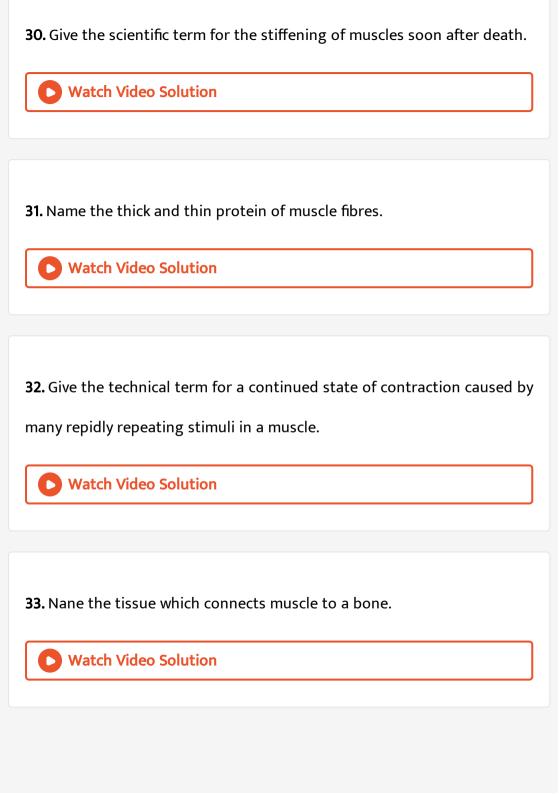


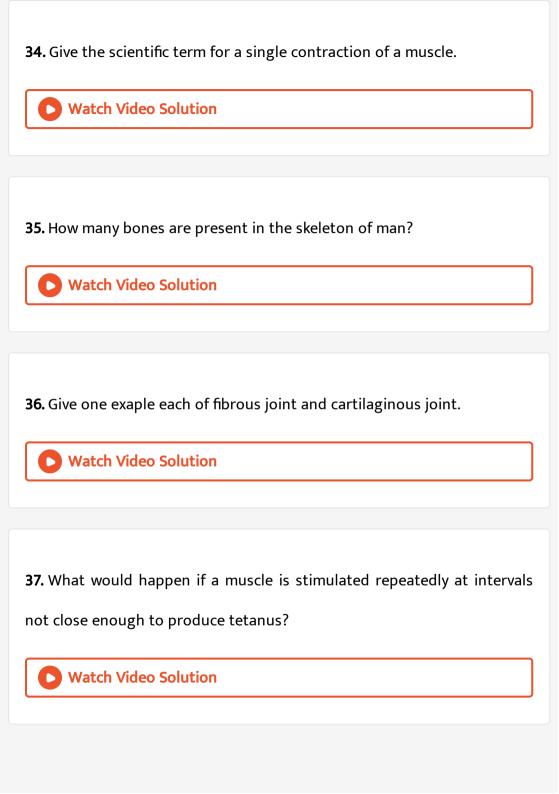


| Watch Video Solution                                         |
|--------------------------------------------------------------|
|                                                              |
| 18. Which part of ulna is called elbow?                      |
| Watch Video Solution                                         |
|                                                              |
| 19. Which leg bone bears the weight of the body?             |
| Watch Video Solution                                         |
|                                                              |
| 20. Name the largest foramen in the skull.                   |
| Watch Video Solution                                         |
|                                                              |
| 21. Which parts of a thoracie vertebrae articulate with rib? |
| Watch Video Solution                                         |
|                                                              |

22. How is the hyoid bone distinguished from other bones of the axial skeleton? **Watch Video Solution** 23. Way are the Tumbar verlebrae the largest and strongest in the vertebral column? Watch Video Solution 24. Which part of the hip bone articulates with the femur, and with the sacrum? **Watch Video Solution 25.** Which muscle protein binds  $Ca^{2+}$ , released from the sarcoplasmic reticulum?

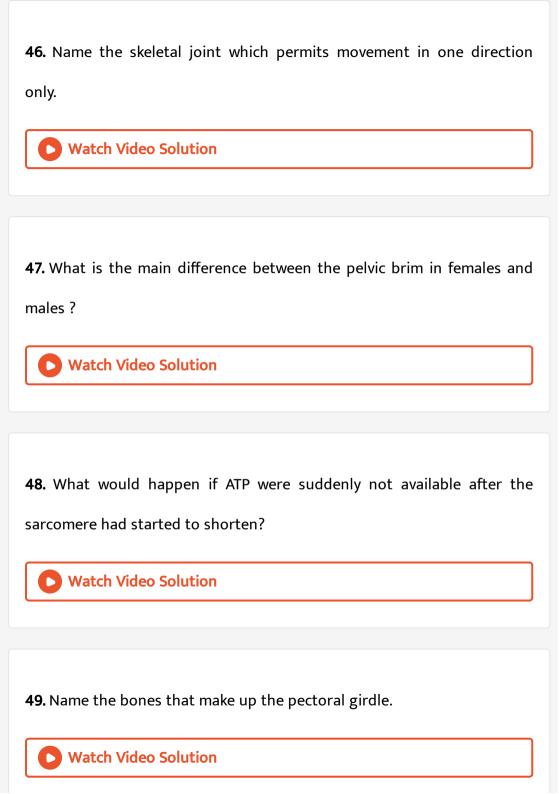
| Watch Video Solution                                                    |
|-------------------------------------------------------------------------|
|                                                                         |
|                                                                         |
|                                                                         |
| <b>26.</b> Name the smallest bone in the human body.                    |
| ·                                                                       |
| Watch Video Solution                                                    |
| • Water Video Solution                                                  |
|                                                                         |
|                                                                         |
|                                                                         |
| 27. Which abdominal muscle aids in urination?                           |
|                                                                         |
| Watch Video Solution                                                    |
|                                                                         |
|                                                                         |
|                                                                         |
| 28. Which part of a bone reduces friction at joints?                    |
| 26. Which part of a bone reduces inction at joints:                     |
| • Watch volumes of the                                                  |
| Watch Video Solution                                                    |
|                                                                         |
|                                                                         |
|                                                                         |
| 29. Name the type of movable joint present at the knee or at the elbow. |
|                                                                         |
| Watch Video Solution                                                    |
|                                                                         |
|                                                                         |
|                                                                         |



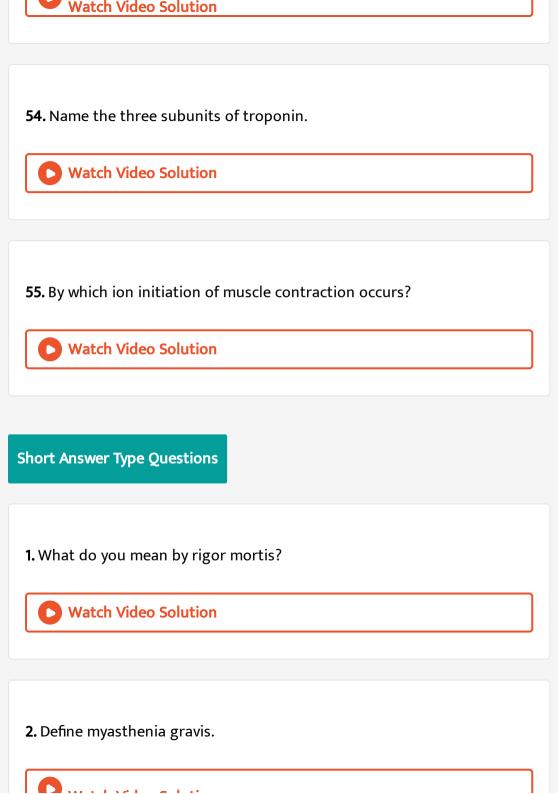


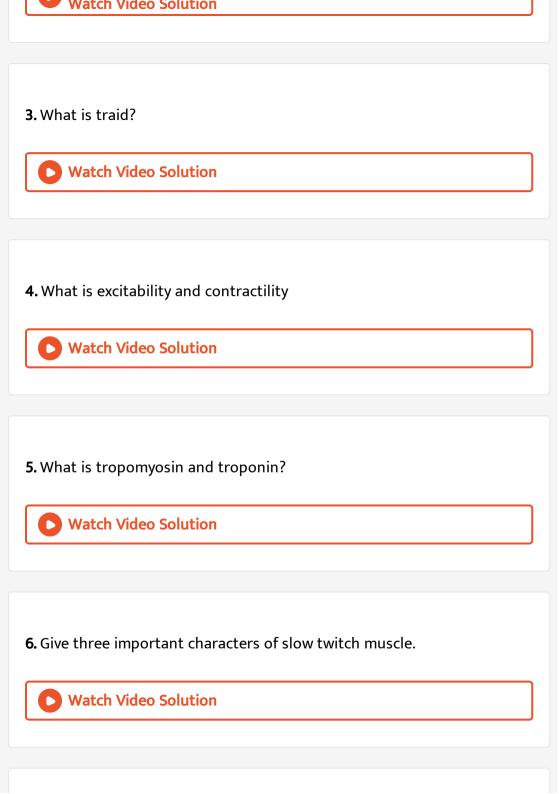
| <b>38.</b> Which property of muscle fibres enable them to cause movement.                      |
|------------------------------------------------------------------------------------------------|
| Watch Video Solution                                                                           |
|                                                                                                |
| <b>39.</b> Name the filaments that form the cross-briges during muscle contraciton.            |
| Watch Video Solution                                                                           |
|                                                                                                |
| <b>40.</b> Name the cavity in the pelvic girdle, into which the head of the femur fibres fits. |
| Watch Video Solution                                                                           |
|                                                                                                |
|                                                                                                |
| <b>41.</b> Name the best known contribution of Hansen.                                         |
| Watch Video Solution                                                                           |
|                                                                                                |

| <b>42.</b> Name the bones which form base of the skull.                   |
|---------------------------------------------------------------------------|
| Watch Video Solution                                                      |
|                                                                           |
|                                                                           |
| <b>43.</b> Which muscle contracts to move your palm face upwards?         |
| Watch Video Solution                                                      |
|                                                                           |
|                                                                           |
| <b>44.</b> What lubricates the freely movable joint at the shoulder?      |
| Watch Video Solution                                                      |
|                                                                           |
|                                                                           |
| <b>45.</b> Name the two special proteins which constitute the contractile |
| filaments of a muscle fibre.                                              |
| Watch Video Solution                                                      |
|                                                                           |
|                                                                           |

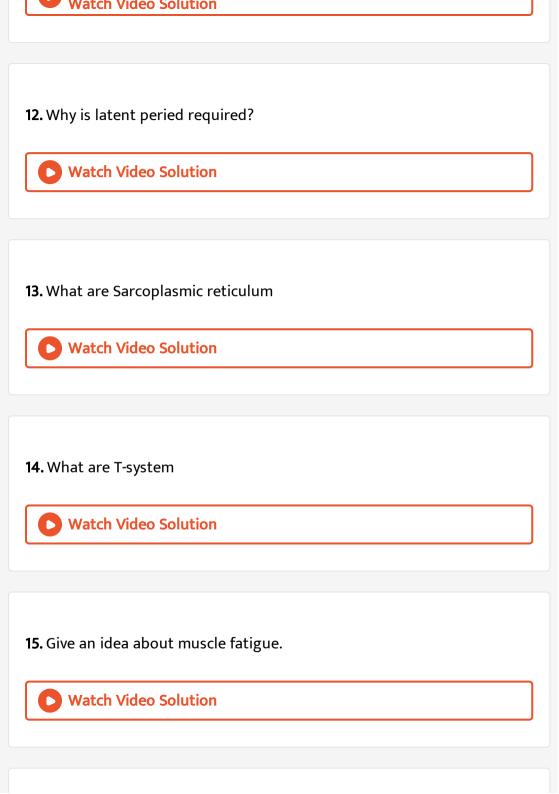


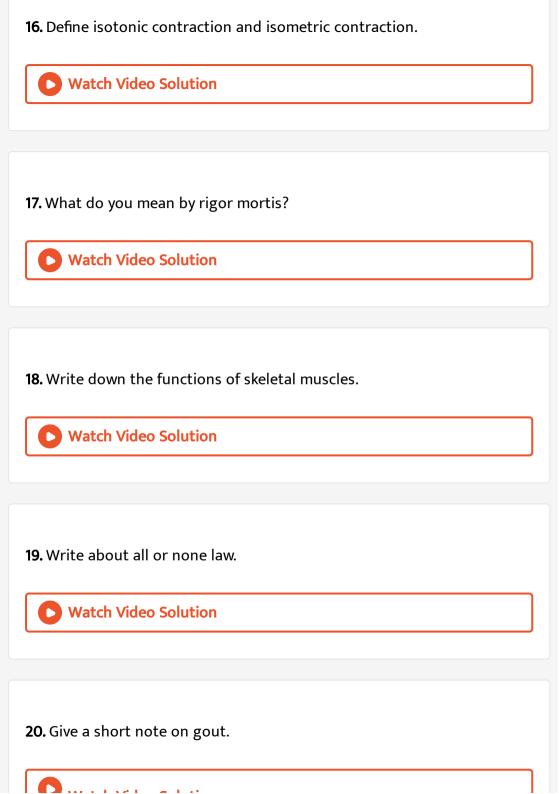
50. What characteristic of cardiac muscle tissue prevents it frum undergoing tetanus **Watch Video Solution** 51. Which bands within a sarcomere appear darker and which appears lighter. **Watch Video Solution** 52. Which are true ribs and false ribs? **Watch Video Solution** 53. Name the pigment which is responsible for the brownish colouration of the heart.

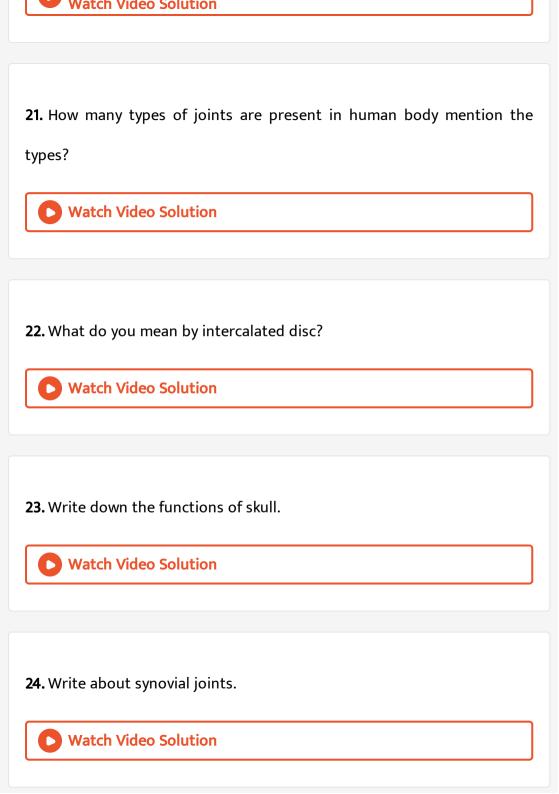


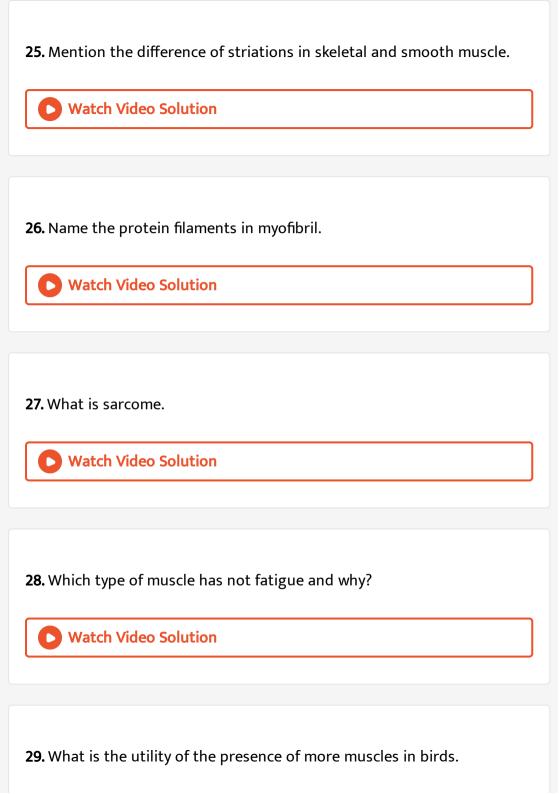


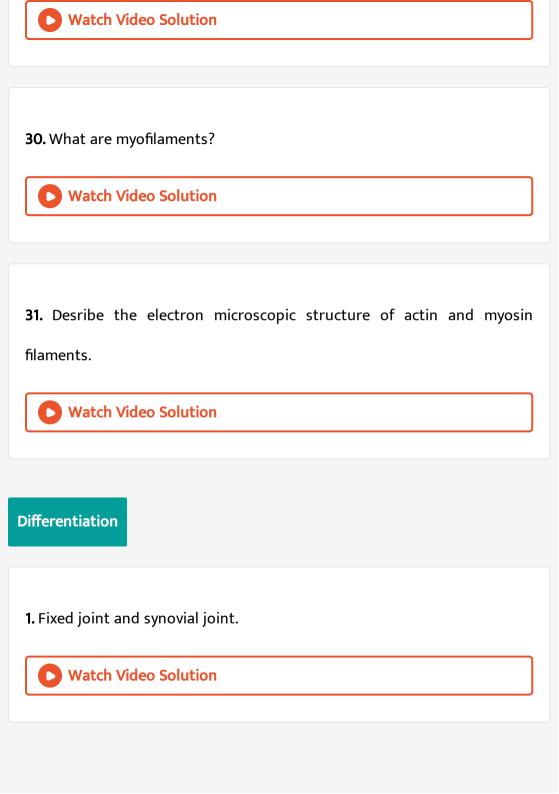
| 7. What are A, I and Z band?                                     |
|------------------------------------------------------------------|
| Watch Video Solution                                             |
|                                                                  |
| 8. What do you mean by 'All or none law'?                        |
| Watch Video Solution                                             |
|                                                                  |
| <b>9.</b> Give three important characters of fast twitch musele. |
| Watch Video Solution                                             |
|                                                                  |
| 10. Give two functions of the cardiac muscle.                    |
| Watch Video Solution                                             |
|                                                                  |
| 11. What is latent period of muscle?                             |
| Own to start                                                     |



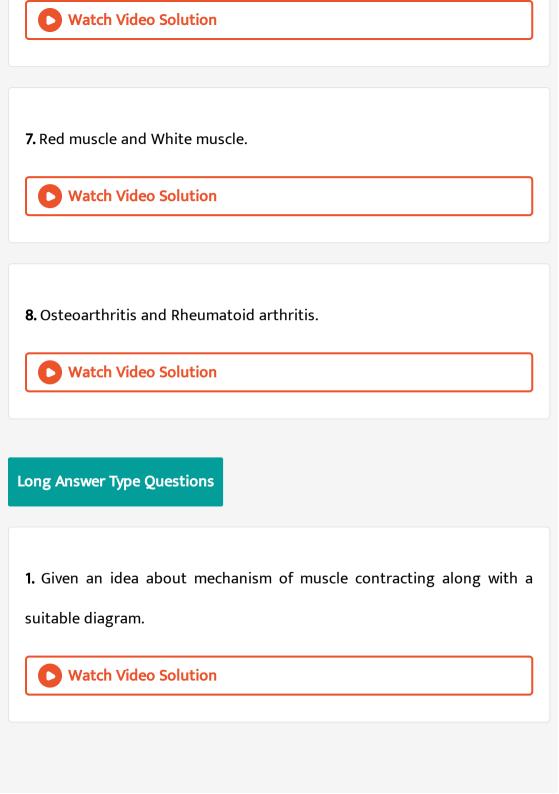








| 2. Ball-and-socket joint and hinge joint. |
|-------------------------------------------|
| Watch Video Solution                      |
|                                           |
| 3. Pronator and supinator.                |
| Watch Video Solution                      |
|                                           |
| 4. Adductor and Abdhuctor.                |
| Watch Video Solution                      |
|                                           |
| 5. Muscle twitch and tetanus.             |
| Watch Video Solution                      |
|                                           |
| 6. Isotonic and Isometric contraction.    |



| 2. Describe the histological structure of skeletal muscle.            |
|-----------------------------------------------------------------------|
| Watch Video Solution                                                  |
|                                                                       |
| 3. Please compare the characteristics of skeletal, smooth and cardiac |
| muscle.                                                               |
| Watch Video Solution                                                  |
|                                                                       |
| <b>4.</b> Describe the bipedal locomotion of man.                     |
| Watch Video Solution                                                  |
|                                                                       |
|                                                                       |
| 5. What do you know about movements and locomotion? Given the         |
| difference of movements and locomotion.                               |
| Watch Video Solution                                                  |

| <b>6.</b> Describe different properties of muscles.                     |
|-------------------------------------------------------------------------|
| Watch Video Solution                                                    |
|                                                                         |
| 7. Describe the different disorder of skeletal system.                  |
| Watch Video Solution                                                    |
|                                                                         |
|                                                                         |
| 8. Write about various types of joints along with example.              |
| Watch Video Solution                                                    |
|                                                                         |
| 9. Write down the purpose of locomotion and the role of skeletal muscle |
| in locomotion.                                                          |
| Watch Video Solution                                                    |
|                                                                         |

10. What did you mean by slow twitch muscle? Given characteristics of both muscles. **Watch Video Solution** 11. Given an account of the sliding theory of muscle contraction. Watch Video Solution 12. What is myofibril? Describe the electron microscopic structure of myofibril. **Watch Video Solution** 13. Describe the sequence of events of chemical changes during muscular contraction. **Watch Video Solution** 

| 14. Distinuish between isotonic and isometric muscular contraction.  Watch Video Solution |
|-------------------------------------------------------------------------------------------|
|                                                                                           |
| Ncert Questions                                                                           |
| 1. Draw the diagram of a sarcomre of skeletal muscle showing different regions.           |
| Watch Video Solution                                                                      |
|                                                                                           |
|                                                                                           |
| 2. Define sliding filament theory of muscle contraction.                                  |
| Watch Video Solution                                                                      |
|                                                                                           |
|                                                                                           |
| 3. Describe the important steps in muscle contraction.                                    |

- **4.** Write true or false. If false change the statement so that it is true.
- (a) Actin is present in thin filament.
- (b) H-zone of straited muscle fibre represent both thick and thin filaments.
- (c) Human skeleton has 206 bones.
- (d) There are 11 points of ribs in man.
- (e) Sternum is present on the ventral side of the body.



- 5. Write the difference between
- (a) Actin and Myosin
- (b) Red and White muscles
- (c) Pectoral and Pelvic girdle



**6.** What are the different types of movements exhibited by the cells of human body



7. How do you distinguish between a skeletal muscle and cardiac muscle?



- 8. Name the type of joint between the following
- (a) atlas/axis
- (b) carpal/metacarpal of thumb
- (c) between phalanges
- (d) femur/acetabulum
- (e) between cranial bones
- (f) between pubic bones in the pelvic girdle.



