



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



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2. Which of the following muscles bend the forearm upwards?

- A. triceps
- B. biceps
- C. gluteus maximus
- D. gastrocnemius

Answer: B

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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



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4. The ends of two bones are connected by

A. tendons

B. ligaments

C. muscles

D. cartilages

Answer: B



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5. An individual muscle fibre is wrapped by

A. endomysium

B. epimysium

C. sarcomeres

D. perimysium

Answer: A



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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



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7. The ribs articulate with the

- A. sacrum
- B. lumbar vertebrae
- C. thoracic vertebrae
- D. cervical vertebrae

Answer: C



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8. What is the term used for the opening or hole in a bone?

- A. fossa
- B. tubercle
- C. process

D. forearm

Answer: D



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9. Which of the following diarthrotic joints allow for the greatest degree of movement?

A. pivot

B. gliding

C. ball and socket

D. hinge

Answer: C



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10. Muscle contraction requires

A. action potential

B. ATP

C. Ca^{2+}

D. all of the above

Answer: D



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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

Answer: A



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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



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

- A. I bands shorten
- B. actin filaments contract
- C. A bands shorten
- D. Z lines slide farther apart

Answer: A

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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

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15. When muscles contract

- 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



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16. Humerus bone is present in the

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

D. lower jaw

Answer: C



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17. The vertebrae atlas and axis belongs to

A. cervical

B. coccygeal

C. thoracic

D. lumbar

Answer: A



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18. In humans vestige of the tail is made up of four fused bones. This structure is known as

- A. coccyx
- B. centrum
- C. sacrum
- D. sternum

Answer: A



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19. The muscle fatigue occurs due to accumulation of

- A. glycogen
- B. lactic acid
- C. CO_2
- D. creatine phosphate

Answer: B



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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

Answer: B



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21. The joint between human skull bones is

- A. hinge joint

B. cartilaginous joint

C. immovable joint

D. synovial joint

Answer: C



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22. Innomiate is

A. an artery

B. a nerve

C. a part of skeleton and an artery

D. a vein

Answer: C



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23. Which of the following components is a part of the pectoral girdle?

A. glenoid cavity

B. sternum

C. acetabulum

D. illum

Answer: A



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24. Which of the following sets of ions is necessary in chemical events for muscle contraction?

A. K^+ & Na^+

B. Na^+ & Fe^{+++}

C. K^+ & Ca^+

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

Answer: D



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25. The strongest muscle of the bod is found in

- A. thigh
- B. fingers
- C. wrist
- D. jaws

Answer: D



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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



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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

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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

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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



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30. Which of the following is not a result of muscular contraction ?

A. motion

B. maintenance of posture

C.

D. production of heat

Answer: C



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31. ATP for muscle contraction can be formed by

- A. glycolysis
- B. aerobic respiration
- C. creatine phosphate breakdown
- D. all of the above

Answer: D



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32. Which of the following has a sigmoid notch?

- A. humerus.
- B. femur
- C. radius-ulna
- D. tibia-fibula

Answer: C

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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

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

A. creatine phosphate

B. ATP

C. lactic acid

D. both a & b

Answer: D

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35. Which of the following occurs during muscle contraction?

A. Z lines move closer together

B. muscles fibres lengthen

C. reduction of ATP liberates oxygen

D. filaments of myosin slide past filaments of actin

Answer: A

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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



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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



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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



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39. The refractory period of mammalian skeletal muscle is

A. 0.005 sec

B. 0.002 sec

C. 0.003 sec

D. 0.02 sec

Answer: B



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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

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41. Inter-articular disc occurs in

- A. wall of liver
- B. in between two vertebrae
- C. wall of heart
- D. pubic symphysis

Answer: B

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42. Which is true of muscle contraction?

- A. sarcolemma becomes permeable to Na^+ ions
- B. concentration of Ca^{2+} ions is reduced in myoplasm
- C. sarcolemma becomes nonpermeable to Na^+ ions

D. sarcolemma becomes permeable to Ca^{+} ions

Answer: A



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43. Astragalus and calcaneum are part of

A. clavicle

B. scapula

C. hind limb

D. fore limb

Answer: C



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44. Which opening occurs in a pair?

A. foramen magnum

B. fenestra rotundus

C. obturator foramen

D. foramen ovalis

Answer: C



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45. Muscular and nervous excitability is reduced by

A. K^+

B. Ca^{2+}

C. Mg^{2+}

D. Na^+

Answer: A



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46. Joint between atlas and odontoid process of

- A. hinge joint
- B. angular joint
- C. pivot joint
- D. saddle joint

Answer: C



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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



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48. On stimulation of skeletal muscle, calcium is immediately made available for binding to troponin from

A. lymph

B. bone

C. sarcoplasmic reticulum

D. blood

Answer: C



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49. Which is wrongly matched

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

Answer: D



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50. Centrum of 8th vertebrae of frog is

- A. acoelous
- B. amphicoelous
- C. procoelous
- D. amphiplatyan

Answer: B



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51. The unpaired facial bone is

- A. nasal
- B. palatine
- C. vomer
- D. lacrimal

Answer: C



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

- A. smooth
- B. striped
- C. cardiac
- D. none of the above

Answer: A

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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

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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



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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



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56. Energy is stored in the liver and muscles in the form of

A. glycogen

B. protein

C. fat

D. carbohydrates

Answer: A



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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. twelve bones of which four are paired
- D. fourteen bones of which six are paired

Answer: B

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58. Which ribs show "bucket-handle" type of movement?

- A. rib no. 3-5
- B. rib no. 1-2
- C. rib no. 11-12
- D. rib no. 6-10

Answer: D

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

- A. cardiac muscle fibre
- B. smooth muscle fibre
- C. both a and b
- D. striped muscle fibre

Answer: B



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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

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

A. two

B. four

C. five

D. three

Answer: A

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

- A. lacuna
- B. chromatophores
- C. adipose cells
- D. haversian canal

Answer: D



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

- A. gout
- B. tetany
- C. angina pectoris
- D. anaemia

Answer: A

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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

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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



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66. Scapula is a large 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

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67. The type of muscles present in our

- A. heart are involuntary and unstriated smooth muscles
- B. thigh are striated and voluntary
- C. upper arm are smooth muscle fibres fusiform in shape
- D. intestine are striated and voluntary

Answer: B

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68. Actin binding sites are located on

- A. both troponin and tropomyosin
- B. troponin
- C. both tropomyosin and meromyosin
- D. Meromyosin

Answer: D



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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

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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 dystrophy-age related shortening of muscles
- D.

Answer: D

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71. The H-zone in the skeletal muscle fibre is due to

- A. the central gap between myosin 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 extending through myosin filaments in the A-band
- D. the absence of myofibrils in the central portion of A-band

Answer: A



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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. accumulation of uric acid crystals in joints causes their inflammation

Answer: D



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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.

Characteristics	Examples
(b) fluid filled synovial cavity between two bones	joint between a

C.

Characteristics	Examples
(c) lymph filled between two bones, limited movement	gliding joint

D.

Characteristics	Examples
(d) fluid cartilage between two bones, limited movements	knee

Answer: B



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

- A. Calcium ion
- B. Troponin
- C. Actin
- D. Magnesium ion

Answer: D



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75. Knee joint is an example of

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

D. gliding joint

Answer: B



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76. The globular head of myosin contains

A. calcium ions in large quantities

B. troponin

C. ATPase enzyme

D. ATP

Answer: C



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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



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78. The structural unit of bone is

A. chondrin

B. cyton

C. osteon

D. ossein

Answer: C

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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

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80. Glenoid cavity articulates

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

Answer: A



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81. The H-zone of muscle fibre

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

D. Only tropomyosin present.

Answer: B



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82. Smooth muscles are

A. Voluntary, spindle shaped, uninucleated.

B. Involuntary, fusiform, non striated

C. Voluntary, multinucleated, cylindrical.

D. Involuntary, cylindrical, striated

Answer: B



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

- A. Fatigue
- B. Tetanus
- C. Tonus
- D. Spasm

Answer: B



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84. Which one of the following is not related with bone disorder.

- A. Arthristis
- B. Osteoporosis
- C. Athrosclerosis
- D. Ricket

Answer: C



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85. Intercalated disc is found in

- A. Skeletal muscle
- B. Smooth muscle
- C. Cardiac muscle
- D. None of these

Answer: C



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

- A. Z line is narrow

B. Presence of reduced amount of myoglobin

C. Twitch time is much less

D. Can function for a long time, do not get fatigued easily

Answer: D



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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



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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 attached 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 vertebral column and ventrally to the sternum

Answer: D



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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



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2. Select the incorrect statements regarding the specific disorder

- A. Osteoporosis: decrease in bone mass and higher chances of fractures with advancing age
- B. Myasthenia gravis : autoimmune disorder which inhibits sliding of myosin filaments

C. Gout: inflammation of calcium due to extra deposition of calcium.

D. Muscular dystrophy: age related shortening of muscle

Answer: B::C::D



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3. Select correct statements with respect to locomotion in humans.

A. accumulation of uric acid in joints kinuses their inflammation.

B. the vertebral column has 12 thoracic vertehrae

C. the joint between adjjicent vertebrac is a fibrous Joint

D. the decreased level of progesterone causes osteoporsis in old people

Answer: A::B



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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



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5. Which of the following statements are 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 unstriated and involuntary

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

Answer: B::C::D



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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



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7. Which of the following are true?

- A. actin is present in thin filament
- B. H zone of striated muscle fibre represents both thick and thin filaments
- C. human skeleton has 206 bones
- D. sternum is present on the ventral side of the body.

Answer: A::C::D



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8. Which of the following pairs are correct?

- A. Flexor muscle-biceps
- B. Extensor muscle-triceps
- C. Adductor muscle

D. Abductor muscle- deltoid

Answer: A::B::D



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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



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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

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11. Which of the following pairs are correct?

- A. actin filament-I band
- B. sarcomere-Z band
- C. smooth muscle involuntary and striated
- D. cardiac muscle- striated and intercalated disc

Answer: A::B::D

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12. 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



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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



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14. Which of the following statements are incorrect?

A. 1st vertebra is axis which with occipital condyles

B. parietal 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



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1. A synovial cavity is found in __ joint.

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2. Longest bone in the human body ___.

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3. The total number of vertebrae in infant is ___.

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4. __ muscle fibres store much O_2 in combination with __.

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5. __ number of bone is present in the human skull.

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6. Anaerobic work becomes painful because of the accumulation of __.

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7. The ankle, knee and elbow joints are all __ joints.

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8. The fast two pairs of ribs forming the sides of the chest cavity are called __ ribs.

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9. The total number of muscles in the body of man is __.

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10. The all-or-none law of muscle contraction refers to a maximum contraction or no contraction of a__.

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11. __ is an example of the articulation of femur and pelvic girdle.

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12. In the human body the number of bones is__.

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13. During the flexion of the elbow joint, the __ muscle contracts and the __ muscle release.

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14. The elastic rubber-like cap by which the ends of bones are covered is known as__.

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15. The skull bones are joined at the sutures by __ tissues and the bodies of vertebrae are joined by ___ tissue.

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16. __ bones form the base of the skull.

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17. Latent period is required for the __ to the impulse from the __ to muscle.

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18. Muscle protein __ binds Ca^{2+} that is released from the sarcoplasmic reticulum.

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19. __ proposed the sliding filament theory of muscle contraction.

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

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True Or False Statement Questions

1. Intercalated discs make up striations in the skeletal muscle.



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



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



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4. The only movable bone in the skull is the mandible.



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5. ATP is involved in both sliding filament mechanism and in the maintenance of calcium pump.



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6. In mammals, the cervical region of vertebral column always consists of seven vertebrae.



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7. A drop in the force of contraction after prolonged stimulation is known as muscle fatigue.



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8. Involuntary muscles have no myosin or actin.



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9. Slow muscle fibres posses myoglobin.



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10. Humerus have a sigmoid notch.



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11. Appendicular skeleton form the axis of the skeleton.



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12. Osteoporosis is a common disease of bone.



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13. During muscle contraction Z-lines get closer.

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14. Paramecium shows flagellar movement.

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15. Smooth muscles maintain posture of the body.

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16. The sarcoplasmic reticulum is identical with the endoplasmic reticulum of other cell type, with exception of ribosome.

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17. Cytoplasmic continuation in between neighbouring cells is known as syncytium.



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18. Chronaxie is a state of rigidity that develops in the muscles after death.



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19. Red colour of red muscle fibre is due to presence of red blood corpuscles.



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20. Skeletal muscle is developed from myotomes.



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Very Short Answer Type Questions

1. Explain a synovial joint.



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2. Name the cells that synthesize collagen.



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3. Which type of movable joint makes the hip joint?



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4. Name the chemical that causes fatigue in the muscle.



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5. Name the functional contractile unit of muscle.

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6. Name the first two vertebrae of a mammalian spine.

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7. Name the heaviest and longest bon in the human body.

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8. Where is acromion found?

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9. What is synovial fluid ?

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10. What is the distinctive feature of mandible among all the skull bones?

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11. What term is used for the muscles which draw a bone away from the body midline?

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12. What are the two types of striated muscle fibres?

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13. The acetabulum is the socket for which bone?



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14. What structures are involved in the knee injury called "torn cartilage"?



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15. Where is the belly of the muscles that extends the forearm located?



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16. Which muscles roll the eye balls laterally?



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17. Which wrist bone is fractured most often?



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18. Which part of ulna is called elbow?



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19. Which leg bone bears the weight of the body?



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20. Name the largest foramen in the skull.



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21. Which parts of a thoracic vertebrae articulate with rib?



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22. How is the hyoid bone distinguished from other bones of the axial skeleton?

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23. Why are the Thoracic vertebrae the largest and strongest in the vertebral column?

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24. Which part of the hip bone articulates with the femur, and with the sacrum?

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25. Which muscle protein binds Ca^{2+} , released from the sarcoplasmic reticulum?



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26. Name the smallest bone in the human body.

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27. Which abdominal muscle aids in urination?

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28. Which part of a bone reduces friction at joints?

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29. Name the type of movable joint present at the knee or at the elbow.

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30. Give the scientific term for the stiffening of muscles soon after death.



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31. Name the thick and thin protein of muscle fibres.



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32. Give the technical term for a continued state of contraction caused by many rapidly repeating stimuli in a muscle.



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33. Name the tissue which connects muscle to a bone.



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34. Give the scientific term for a single contraction of a muscle.

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35. How many bones are present in the skeleton of man?

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36. Give one example each of fibrous joint and cartilaginous joint.

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37. What would happen if a muscle is stimulated repeatedly at intervals not close enough to produce tetanus?

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38. Which property of muscle fibres enable them to cause movement.

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39. Name the filaments that form the cross-bridges during muscle contraction.

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40. Name the cavity in the pelvic girdle, into which the head of the femur fits.

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41. Name the best known contribution of Hansen.

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42. Name the bones which form base of the skull.

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43. Which muscle contracts to move your palm face upwards?

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44. What lubricates the freely movable joint at the shoulder?

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45. Name the two special proteins which constitute the contractile filaments of a muscle fibre.

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46. Name the skeletal joint which permits movement in one direction only.

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47. What is the main difference between the pelvic brim in females and males ?

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48. What would happen if ATP were suddenly not available after the sarcomere had started to shorten?

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49. Name the bones that make up the pectoral girdle.

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50. What characteristic of cardiac muscle tissue prevents it from undergoing tetanus

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51. Which bands within a sarcomere appear darker and which appears lighter.

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52. Which are true ribs and false ribs?

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53. Name the pigment which is responsible for the brownish colouration of the heart.



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54. Name the three subunits of troponin.

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55. By which ion initiation of muscle contraction occurs?

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Short Answer Type Questions

1. What do you mean by rigor mortis?

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2. Define myasthenia gravis.

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3. What is traid?

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4. What is excitability and contractility

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5. What is tropomyosin and troponin?

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6. Give three important characters of slow twitch muscle.

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7. What are A, I and Z band?

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8. What do you mean by 'All or none law'?

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9. Give three important characters of fast twitch muscle.

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10. Give two functions of the cardiac muscle.

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11. What is latent period of muscle?

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12. Why is latent period required?

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13. What are Sarcoplasmic reticulum

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14. What are T-system

 [Watch Video Solution](#)

15. Give an idea about muscle fatigue.

 [Watch Video Solution](#)

16. Define isotonic contraction and isometric contraction.

 [Watch Video Solution](#)

17. What do you mean by rigor mortis?

 [Watch Video Solution](#)

18. Write down the functions of skeletal muscles.

 [Watch Video Solution](#)

19. Write about all or none law.

 [Watch Video Solution](#)

20. Give a short note on gout.

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 [Watch Video Solution](#)

21. How many types of joints are present in human body mention the types?

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22. What do you mean by intercalated disc?

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23. Write down the functions of skull.

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24. Write about synovial joints.

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25. Mention the difference of striations in skeletal and smooth muscle.

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26. Name the protein filaments in myofibril.

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27. What is sarcome.

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28. Which type of muscle has not fatigue and why?

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29. What is the utility of the presence of more muscles in birds.



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30. What are myofilaments?



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31. Describe the electron microscopic structure of actin and myosin filaments.



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Differentiation

1. Fixed joint and synovial joint.



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2. Ball-and-socket joint and hinge joint.



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3. Pronator and supinator.



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4. Adductor and Abductor.



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5. Muscle twitch and tetanus.



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6. Isotonic and Isometric contraction.



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7. Red muscle and White muscle.



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8. Osteoarthritis and Rheumatoid arthritis.



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Long Answer Type Questions

1. Given an idea about mechanism of muscle contracting along with a suitable diagram.



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2. Describe the histological structure of skeletal muscle.

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3. Please compare the characteristics of skeletal, smooth and cardiac muscle.

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4. Describe the bipedal locomotion of man.

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5. What do you know about movements and locomotion? Given the difference of movements and locomotion.

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6. Describe different properties of muscles.

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7. Describe the different disorder of skeletal system.

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8. Write about various types of joints along with example.

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9. Write down the purpose of locomotion and the role of skeletal muscle in locomotion.

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10. What did you mean by slow twitch muscle? Given characteristics of both muscles.

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11. Given an account of the sliding theory of muscle contraction.

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12. What is myofibril? Describe the electron microscopic structure of myofibril.

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13. Describe the sequence of events of chemical changes during muscular contraction.

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14. Distinguish between isotonic and isometric muscular contraction.

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Ncert Questions

1. Draw the diagram of a sarcomere of skeletal muscle showing different regions.

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2. Define sliding filament theory of muscle contraction.

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3. Describe the important steps in muscle contraction.



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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 striated 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.

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5. Write the difference between

- (a) Actin and Myosin
- (b) Red and White muscles
- (c) Pectoral and Pelvic girdle

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

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

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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.

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9. All mammals (except a few) have __ cervical vertebra.

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10. The number of phalanges in each limb of human is __.

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11. Thin filament of myofibril contains '2 F' actins and two other proteins namely __ and __.

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12. In a muscle fibre Ca^{++} is stored in __.

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13. __ and __ pairs of ribs are called floating ribs.



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14. The human cranium is made of __ bones.



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