BIOLOGY

BOOKS - MAXIMUM PUBLICATION

MOVEMENT AND LOCOMOTION IN ANIMALS

Exercise

1. Ribs are attached to

A. Scapula

B. Sternum

C. Clavicle

D. Ilium

Answer: D

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

A. Pivot

B. saddle

C. Hinge

D. Gliding

Answer: A

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3. ATPase of the muscle is located in

A. Actinin

B. Troponin

C. Myosin

D. Actin

Answer: C

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4. Macrophages and leucocytes exhibit

A. Ciliary movement

B. Flagellar movement

C. Amoeboid movement

D. Gliding movement

Answer: C

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

A. Arthritis

B. Osteoporosis

C. Rickets

D. Atherosclerosis

Answer: D

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6. Suggest a suitable word for the fourth place

a) thin filament : Actin :: Thick filament : .....

b) Pectoral girdle : humerus :: Pelvic girdle : .....

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7. Copy the paragraph below about the structure of a striated muscle. Choose the words from the following list & fill up the gaps.

Under lightmicroscope, the striated muscle show ..... (a) band & ..... (b) band. The distnce between 2 adjacent Z line is known as ..... (c)

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8. A person is suffering from joint pain. His blood test shown increased amount of uric acid. What will be the diagnosis ?

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9. The infants have 33 vertebrae in the vertebral column. But an adult has only 26 vertebrae. What will happen to the remaining vertebrae.

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10. The axial skeleton contains 80 bones. Make a table according to where it is seen and number of bones present in each section.

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11. One of the following statements is incorrect Find and correct it.

a) The number of cervical vertebrae is seven in all mammals except human beings.

b) Thoracic vertebrae, ribs and sternum

together make ribcage.

c) Accumulation of uric acid in joints leads to gout.

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12.

a) Name the process shown here, which theory explain this process ?

b) Draw and complete the process.

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13. Red muscle fibers have greater capacity to do work for a prolonged period where as white muscles suf-fer from fatigue after a short time. Dive reason.

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14. Shoulder joints are not very stable. But they are freely movable. Given reason ?

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15. Name the types of joint between the following .

a) Atlas / axis

b) Between cranial bones

c) Carpal / Meta carpel of thumb

d) Between Humerus and pectoral girdle

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16. Analyse the table & fill in the blanks with appropriate word 

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17. The last two pairs of ribs are called floating ribs .

a) What do you meant by the term floating ribs ?

b) What are true ribs ?

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18. Some joints in the body are characterized by pres-sure of a fluid cavity between articulating surfaces of two bones. Mention

the peculiarity of these types of joint and give examples ?

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19. A muscle cell viewed under a microscope shown the following characters. Shape - Cylindrical

Nucleus - Multinuclear

Striation - Present

a) Identify the muscle cell.

b) Calcium ions are necessary for muscle

contraction. if a muscle is placed in a solution containing calcium ions. Does the muscle contracts ? Substantiate.

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20. Pictorial representation of tissue is given in a lab diary with only one labelling - intercalated disc - using your knowledge about tissue.

a) Identify the tissue.

b) Draw the structure of tissue and label the parts.

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21. You can move your hands at your will. But you can`t move your heart at your will. Comment.

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22. (## EXP_VAD_ZOO_XI_C09_E02_013_Q01

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a) Identify the muscle cell

b) Mention its function.

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23. An investigation was arrived out to find the effect of the temperature on muscle contraction. The results are shown in the graph.

a) Describe and suggest an explanation for one effect of temperature on muscle contraction.

b) Name the filaments involved in muscle contraction.

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24. The rea colour of the blood is due to the presence of haemoglobin in it. Certain skeletal muscles are red in colour eventhough they

lack haemoglobin. Now explain how the red muscles have that particular colour.

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25. Actin, Troponin, Biceps, Muscles of blood vessels, Muscles of heart, Myosin, Muscles of reproductive tract, Tropomyosin, Muscles of Alimentary canal, Triceps.

Rearrange the terms in four columns on the basis of their similarity and give appropriate heading for each columns.

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26. Identify the myofibril and label the parts given below. 

(Troponin, Tropomyosin, Actin)

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27. Length of A band remains unchanged during muscular contraction. Is this statement true or false ?

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28. Match the column I with column II . 

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29. Complete the division of human skeletal system by filling the blanks.

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30. Arrange the following bones into two columns and give proper heading to each columns. Scapula, Carpals, Femur, Fibula, Tibia, Tarsals, Ac-etabulum, Metatarsals, Radius, Humerus, Glenoid cavity, Clavicle, Metal Carpals, Phalanges, Patella, llium, ischium, Pubis.

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31. Your lungs and Heart are well protected in a cage. Which bone contributes to it ?

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32. There are joints at your shoulders and elbows. But their movement is different. Give reason.

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33. What are the different type of movement shown by human cells ?

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34. Draw a flow chart showing the flow of stimulus that results in muscle contraction. (Start from Neuromuscular junction)

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35. Match the following columns. 

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36. Write the odd one out and give the reason for your answer.

a) Fibrous joints, Ball and socket joints, Hinge joints, Pivot joints

b) Humerus, Femur, Radius, Ulna.

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37. Bones of the older people turn brittle and break quickly.

a) Name the bone disorder stated above.

b) List any two reasons for the above disorder.

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38. When you ride a bicycle two major joints of your leg should perform properly.

a) Name the joints.

b) To which type of synovial joints these belong ?

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39. In human body different type of movement shown by some cells.

a) Name the type of movement shown by human sperm.

b) Which is the part of sperm help this movement ?

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40. State one difference in each of the following pairs on the basis o the what is indicated in brackets.

a) Glenoid cavity and acetabulum (location and function)

b) Osteoarthritis and Gout (cause)

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41. (## EXP_VAD_ZOO_XI_C09_E03_002_Q01 .png" width="80%">

a) Observe the diagram and identify the type of joint.

b) Where can you find this type of joints in your body ?

c) Comment on its ability to move.

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42. According to colour, muscles are two types.

a) Name the two muscles.

b) Why are they called so ?

c) Give examples.

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43. (## EXP_VAD_ZOO_XI_C09_E03_005_Q01 .png" width="80%">

a) Observe the above graph and find out the region of graph where muscle show maximum contraction. Justify your answer.

b) Name the different types of muscle proteins present in thick and thin filaments.

c)ca^{2+} is necessary for muscle contraction. Why?

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44. Will muscle contraction occur in the following conditions. Justify your answer .

a) Troponin is removed from the thin filament.

b) No ATP is supplied to the muscle.

c) All endoplasmic reticulum are removed from muscle cells.

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45. The given statements are about the structure of muscles. Categorise them into a

table giving appropriate headings.

These muscles have striation.

These are found inside the wall of hollow internal organs.

These muscles have no striations.

They are voluntary muscles.

They are muscles of the arms and legs.

They are involuntary muscles.

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46. Observe the following diagram.

a) Identify A, B, C, D.

b) What is Sarcomere ?

c) List out the changes takes place during muscle contraction to ABC and D.

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47. Give any example of synovial joint.

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48. Suppose a person is suffering from calcium defi-ciency for a prolonged time. How does it affect muscular contraction ? (Note : Description necessary)

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49. Identify the following diseases noting the symptoms given below

a) The liver is affected, skin and eyes turn yellow due to the deposit of bile pigments.

b) Difficulty in breathing causing wheezing due to the inflammation of bronchi and bronchioles.

c) Chronic disorder in which alveolar walls are damaged mainly due to cigarette smoking .

d) Auto immune disorder affecting neuro muscular junction leading to fatigue, weakening and paralysis of skeletal muscles.

e) Inflammation of joints due to deposition of uric acid crystals.

f) Age related disorder due to decreased level of estrogen, characterised by decreased bone mass and increased chances of fractures.

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50. Identify the following tissues and write down their location.

a) Loose connective tissue which stores fat.

b) Dense connective tissue which connect bone to bone.

c) A contractile tissue which possess intercalatory disc.

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51. Observe the relaxed unit of a muscle given below.

a) Redraw the diagram when the muscle unit is maximally contracted.

b) Repeated activation of the muscle can lead to fatigue. Justify.

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52. One of the following statements is incorrect Find and correct it.

a) The number of cervical vertebrae is seven in all mammals except human beings.

b) Thoracic vertebrae, ribs and sternum together make ribcage.

c) Accumulation of uric acid in joints leads to gout.

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53. Draw a flow chart showing the flow of stimulus that results in muscle contraction. (Start from Neuromuscular junction)

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54. Give two examples for each of the following :

a) Synovial joints

b) Muscular proteins

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55. The important finding in the case sheet of two patients A and B show that both are suffering from dis-orders of the skeletal

system.

a) $PatientA$ is suffering from inflammation of joints due to the accumulation of uric acid crystals.

b) $PatientsB$ shows decreased bone mass and decreased level of oestrogen.

Identify the disorders or diseases of A and B.

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56. Red muscle fibers have greater capacity to do work for a prolonged period where as

white muscles suf-fer from fatigue after a short time. Dive reason.

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57.

a) Name the process shown here, which theory explain this process ?

b) Draw and complete the process.

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58. Some joints in the body are characterized by pres-sure of a fluid cavity between articulating surfaces of two bones. Mention the peculiarity of these types of joint and give examples ?

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59. Complete the following chart showing structure of myosin flament and its protein based on the hints given in the brackets.

(Light meromyosin, Actin, Trophomyosin, Meromyosin)

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60. Draw a flow chart showing the flow of stimulus that results in muscle contraction.

(Start from Neuromuscular junction)

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61. Draw a flow chart showing the flow of stimulus that results in muscle contraction.

(Start from Neuromuscular junction)

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62. Write true or false. If false change the statement so that it is true.

a) Actin present in thin filament

b) H-zone of striated muscle fibre represents both thick and thin filaments

c) Human skeleton has 206 bones

d) There are 11 pairs of ribs in man.

e) Stenum is present on the ventral side of the body.

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63. Name the types of joint between the following .

a) Atlas / axis

b) Between cranial bones

c) Carpal / Meta carpel of thumb

d) Between Humerus and pectoral girdle

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64. a) All mamnals (expect a few) have ..... cervical vertebra.

b) The number of phalanges in each limb of human is .....

c) Thin filament of myofibril contains 2 F actins and two other proteins namely ..... And .....

d) In a muscle fibre ca^{++} is stored in .....

e) ..... and ..... pairs of ribs are called floating ribs.

f) The human cranium is made of ..... bones.

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65. The muscle band that remains unchanged during contraction and relaxation of the skeletal muscle is

A. I

B. H

C. A

D. Z-line

Answer: D

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66. Intervertebral disc consists of a shock absorber connective tissue known as

A. hyaline cartilage

B. elastic cartilage

C. fibro cartilage

D. reticulo cartilage

Answer: C

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67. Common among all mammals is

A. ventral nerve cord

B. seven cervical vertebrae

C. all are carnivores

D. all are producers

Answer: B

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68. The lactic acid generated during muscle contraction is converted to glycogen in

A. muscles

B. kidney

C. pancreas

D. liver

Answer: D

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69. Folding and unfolding of actin and myosin leads to amoeboid movement. This is hypothesised by

A. Allen

B. Goldacre and Lasch

C. Berthold

D. Jennigs

Answer: B

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70. Observe the relaxed unit of a muscle given below.

a) Redraw the diagram when the muscle unit is maximally contracted.

b) Repeated activation of the muscle can lead to fatigue. Justify.

A. lactic acid

B. citric acid

C. Na

D. K

Answer: A

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71. Which of the following is not syncytial?

A. Cardiac muscle

B. Skeletal muscle

C. Smooth muscle

D. Interstitial muscle

Answer: C

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72. State one difference in each of the following pairs on the basis o the what is indicated in brackets.

a) Glenoid cavity and acetabulum (location and function)

b) Osteoarthritis and Gout (cause)

A. ball and socket joint

B. pivot joint

C. peg and socket joint

D. condyloid join

Answer: A

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73. Human vertebral columm is formed by

A. 21 vertebrae

B. 30 vertebrae

C. 26 vertebrae

D. 33 vertebrae

Answer: D

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74. When body part moves towards the median axis is called

A. abductor

B. adductor

C. supinator

D. pronator

Answer: B

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75. (## EXP_VAD_ZOO_XI_C09_E03_005_Q01 .png" width="80%">

a) Observe the above graph and find out the region of graph where muscle show maximum contraction. Justify your answer.

b) Name the different types of muscle proteins present in thick and thin filaments.

c)ca^{2+} is necessary for muscle contraction. Why?

A. actin, troponin, tropomyosin

B. actin, troponin

C. niyosin, troponin

D. actin, tropomyosin

Answer: A

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76. Which of the following pairs is correctly matched ?

A. Cartilaginous joint Skull bones

B. Hinge joint - Between vertebrae

C. Fibrous joint - Between phalanges

D. Gliding joint - Between zygapophyses of the successive vertebrae

Answer: D

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77. Nucleus pulposus is found in

A. brain

B. nucleus

C. intervertebral disc

D. liver

Answer: C

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78. Total number of bones found in right upper limb is

A. 25

B. 26

C. 30

D. 60

Answer: C

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79. In a vertebrate, which germ layer forms the skeleton muscles

A. Ectoderm

B. Endoderm

C. Mesoderm

D. Both (a) and (c)

Answer: C

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80. Where did an epidemic bone softening disease itai-itai occurred first in ?

A. South korea

B. Japan

C. China

D. Burma

Answer: B

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81. Muscle pump is

A. beating of heart

B. squeezing effect of muscles upon veins runnig through them

C. peristaltic wave that travel along the alimentary canal

D. None of the above

Answer: B

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82. Slow muscle fibres are found in

A. eye

B. leg

C. stomach

D. heart

Answer: B

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83. The gliding joints are important for gliding movements. One example of such a joint is between the

A. zygapophyses of adjacent vertebrae

B. humerus and glenoid cavity

C. occipital condyle and odontoid process

D. femur and tibio fibula

Answer: A

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84. Aqueduct of sylvius (iter) connects

A. 1^{st} and 2^{nd} ventricles

B. 3^{rd} and 4^{th} ventricles

C. 2^{nd} and 3^{rd} ventricles

D. 4^{th} and 1^{st} ventricles

Answer: B

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85. Volkmann`s canals occur in

A. internal ear

B. liver

C. cartilage

D. bone

Answer: D

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86. For muscle contraction, in myofibrils the formation, of a protein is essential, such protein discovered by

A. Jean Hanson

B. Con and Con

C. Albert Szent Gyorgyi

D. Hugh Huxley

Answer: C

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