BIOLOGY

BOOKS - MBD

Locomotion and Movements

Example

1. Is locomotion related to movement?

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2. What is the contractile unit of a muscle fiber called?

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3. Name the two types of myofilaments in a sarcomere.

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4. Which myofilaments slide in a sarcomere during contraction?

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5. What is the fategue of a muscle due to?

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6. Which compounds provide energy for muscle conrtraction?

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7. Name the muscle that causes peristalsis.

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8. Name an organism showing ciliary movement and flagellar movement.

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9. Write two strutural adaptations in striated muscle fibres to draw more energy.

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10. What is Z-Line? Write functon.

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11. Name the most accepted theory of muscle contraction.

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12. Name two energy sources for muscle contraction.

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13. Whose skull is lighter in weight- females or males?

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14. What a term refers to unossified parts of a new born's skull?

15. Which is the only bone in the body not in contact with another bone?

16. Which is the strongest bone in man?

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17. Which is the only movable bone in the skull?

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

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19. Name the kind of skeletal joint which permits movements in a single plane only.

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20. What type of cartilage is present between the vertebrae to aalow limited movement?

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21. Fill in the blank

Muscles lactic acid os changed into muscle

glycogen via.....cycle.

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22. Fill in the blank

.....causes the depolarisation of the sarcolemma of muscle fibre.

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23. Fill in the blank

Calcium is released by .....

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24. Fill in the blank

.....is strongest bone of human skeleton.

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25. Fill in the blank

Pelvic girdle is formed by fusion of three bones-ilium, ischium and .....

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26. True and False:

In the vertebrates, thye ATP is regenerated by phosphagens like phosphocreatine and phosphaginine.

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27. True and False:

Bones of wrist are tarsals while bone of ankle are carpals.

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28. True and False:

Man has dicondylic skull

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29. True and False:

Astragalus and calcaneum bones are found in fore limb of frog.

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30. True and False:

All mammal have seven cervical vertebrae.

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31. Give the technical terms used for the following:

A state of continuous contraction evoked in a muscle by repested shocks.

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32. Give the technical terms used for the following:

When a muscle is stimulated by an inadequate stimulus, no contraction occurs. If two or more inadequate stimule are given in rapid succession, the muscle contraction is evoked.

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33. Give the technical terms used for the following:

All the muscles contract when they receive the

stimulus of an adequate strength. The lowestr limit of stimulus capable to bring a contraction.

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34. Give the technical terms used for the following:

Tail bone formed by fusion of four coccygeal vertebrate in man.

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35. Give the technical terms used for the following:

The structure formed by fusion of sacral veretebrae.

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36. Draw the diagram of a sarcomer of skeletal muscle showing different regions.

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37. Define sliding filament theory of muscle contraction.

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38. Describe the important steps in muscle contration.

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39. True or False

Actin is present in thin filament.

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40. True or False

H-Zone of strained muscle fibre represents both thick and thin filaments.

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41. True or False

Human skeleton has 206 bones.

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42. True or False

There are 11 pairs of ribs in man.

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43. True or False

Sternum is present on the ventral side of the body.

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44. Write the difference between: Actin and Myosin

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45. Write the difference between: Red and White muscles

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46. Write the difference between: Pectoral and Pelvic girdle

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47. Match column I with Column II.

(*i*) Smooth muscle	(*a*) Myoglobin
(*ii*) Tropomyosin	(*b*) Third class lever
(*iii*) Red muscle	(*c*) Thin filament
(*iv*) Skull	(*d*) Sutures
	(*e*) Involuntary

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

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

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50. Name the type of joint between the following: atlas/axis

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51. Name the type of joint between the following: carpal/metacarpal of thumb

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52. Name the type of joint between the following: between phalanges

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53. Name the type of joint between the following: femur/acetabulum

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54. Name the type of joint between the following: between cranial bones

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55. Name the type of joint between the following: between public bones in the pelvic girdle

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56. Fill in the blank

All mammals have .....cervical vertebra.

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57. Fill in the blank

The filament of phalanges in each limb of human is .....

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58. Fill in the blank spaces: Thin filament of myofibril contains 2 F actins and two other proteins namely _____ and _____.

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59. Fill in the blank

In a muscle fibre Ca^{2+} is stored in .....

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60. Fill in the blank

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

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61. Fill in the blank

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

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62. Name the cells/ tissues in human body which :

exhibit amoeboid movement.

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63. Name the cells/ tissues in human body which :

exhibit ciliary movement.

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64. Locomotion requires a perfect coordinated actiity of muscular....., ...systems.

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65. Sacrolemma, sarcoplasm and sarcoplasmic reticulum refer to a particular type of cell in our body. Which is this cell and to what parts of that cell do these names refer to ?

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66. Label the different components of actin filament in the diagram given below:

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67. The three tiny bones present in middle ear are called ear ossicles. Write them in correct sequence beginning from ear drum.

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68. What is the difference between the matrix of bones and cartilage?

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69. Which tissue is affected by Myasthenia gravis? What is the underlying cause?

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70. How do our bone joints function without grinding noise and pain?

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71. Give the location of a ball and socket joint in a human body.

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72. Our fore arm is made of three different bones. Comment.

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73. With respect to rib cage, explain the following:

Bicephalic ribs

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74. With respect to rib cage, explain the following:

True ribs

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75. With respect to rib cage, explain the following:

Floating ribs.

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76. In old age, people often suffer from stiff and inflamed joints. What is this condition called? What are the possible reasons for these symptoms?

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77. Exchange of calcium between bone and extracellular fluid takes place under the influence of certain hormones:

What will happen if more of $Ca^{+} +$ is in extracellular fluid?

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78. Exchange of calcium between bone and extracellular fluid takes place under the influence of certain hormones:

What will happen if very less amount of $Ca^{+}+$ is in the extracellular fluid?

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79. Name atleast two hormones which result in fluctuation of $Ca^{+}+$ level.

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80. Rahul exercises regularly by visiting a gymnasium. Of late he is gaining weight. What

could be the reason? Choose the correct answer and elaborate.

A. Rahul has gained weight due to accumulation of fats in body.

B. Rahul has gained weight due to increased muscle and less of fat.

C. Rahul has gained weight because his muscle shape has improved.

D. Rahul has gained weight because he is accumulating water in the body.

Answer:

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81. Radha was running on a treadmill at a great speed for 15 minutes continuously. She stopped the treadmill and abrupty came out. For the next few minutes, she was breathing heacvily/fast. Answer the following questions. What happened to her muscles when she did strenuously exercised?

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82. Radha was running on a treadmill at a great speed for 15 minutes continuously. She stopped the treadmill and abrupty came out. For the next few minutes, she was breathing heacvily/fast. Answer the following questions.

How did here breathing rate change?

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83. Write a few lines about Gout.

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84. What is the sources of energy for muscle contraction?

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85. What are the points fer articulation of pelvic and pectoral girdles?

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86. Calcium ion concentration in blood affects muscles contraction. Does it lead to tetany in certain cases? How will you correlate fluctuation in blood calcium with tetany?

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87. An elderly woman slipped in the bathroom and had severe pain in her lower back. After X_ray examination doctors told her it is due to a slipped disc. What does that mean? How does it affect our health?

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88. How does a muscle shorten during its contraction and return to its original form during relaxation?

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89. Define sliding filament theory of muscle contraction.

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90. Discuss the role of CA^{2+} ions in muscle contraction. Draw neat sketches to illustrate your answer.

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91. Write the difference between: Pectoral and Pelvic girdle

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92. Name the type of movements shown by cytoplasm.

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93. List two kinds of movements involved in vital functions of life.

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94. What is locomotion?

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95. Write the importance of locomotion.

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96. Name three basic mechanisms involved in movement.

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97. Which components of cells are involved in the amoeboid movements?

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98. List the cells and organisms which carry out amoeboid movements to capture food.

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99. Which kind of movements are shown by Paramecium?

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100. What is the importance of cilia in case of bivalves and starfish?

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101. List the basic property of muscular movement?

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102. How much percentage of body weight is formed by muscles?

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103. Name the physiological units of muscles.

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104. Name the structural units of muscles.

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105. Name the two components of myosin molecule.

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106. What happens to $Ca^{+}+$ during relaxation of muscles?

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107. Name the bone which rise and drop during speaking .

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

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109. How many vertebrate are present in the vertebral column of man?

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110. How many ribs are present in man? Name the different types.

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111. Name the bones which bound the obturator foramen.

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112. Define movement and locomotion. What are the advantages of locomotion to the animal?

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

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114. What is muscular tissue? What are main functions of muscular tissue? Name the three kinds of muscular tissue.

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115. Give a brief account of three kinds of muscles.

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116. Differentiate A-band and I-band.

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117. Explain biochemical changes during muscle contraction.

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118. Explain the following terms :

Antagonistic muscles

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119. Explain the following terms :

Threshold stimulus

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120. Explain the following terms :

Sarcomere

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121. Explain the following terms :

Fatigue

122. Explain the following terms :

Muscles twitch.

123. Give an account of molecular components of muscles.

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124. What are cross bridges, actin and myosin? State their importance.

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125. State and explain all or none principle.

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126. Define neuromuscular junction and motor end plate.

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127. Write the biological importance of the following:

Myoglobin

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128. Write the biological importance of the following:

Actin and myosin filaments

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129. Write the biological importance of the following:

Synovial joints

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130. Write the biological importance of the following:

Fibrous joints

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131. Write the biological importance of the following:

Lactic acid.

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132. Contrast between the following :

Pronator and supinator

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133. Contrast between the following :

Muscle twitch and tetanus.

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134. Briefly explain human skeleton.

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135. Show with sketches only (a) pectoral girdle and fore limb. (b) Pelvic girdle and hind limb.

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136. What is role of girdles in the skeleton?

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137. Write a note on joint.

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138. Give the structure of a typical synovial joint. Write its biological importance.

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139. Differentiate between ball & socket and hinge joint.

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140. Write a brief account of the ball and socket joint, hinge joint and angular joint. Give suitable examples of each.

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141. Differentiate between fixed joint and synovial joint.

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142. What is arthritis? What are the causes of arthritis? Define sprain.

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143. What is dislocation and fracture of a bone?

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144. Brefly discuss the inds of fracture.

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145. Give the general properties of muscles.

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146. How does skeletal muscles contract?

Watch Video Solution

147. How calcium affect the process of muscle contraction?

Watch Video Solution

148. List the chemical events which occur during muscle contraction.

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149. Draw well labelled diagram showing the human skeleton.

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150. Write function of skeleton.

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151. Give an account of human axial skeleton.

Axial Skeleton- 80 bones

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152. Show the structure of human skull.

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153. Draw a diagrammatic view of human vertebral column.

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154. How does the muscle shorten during its contraction and lengthen during its relaxation?

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155. What types of muscles will be antagonistic to pronator and abductor respectively, and why?

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156. Why a red muscle fibre can work for a prolonged time while a white muscle fibre suffers from fatigue after a short work?

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Exercise

1. Name the protein present in A-band and I - band.

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2. What is bicephalic rib?

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3. Which tissue is affected by Myasthenia gravis?

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4. Give location of ball and socket joint.

Watch Video Solution

5. What is funtion of sacroplasmic reticulum?

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6. Give the summary of the chemical events involved in the process of musle contraction

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7. Why are movements and locomotion necessary among the animals?

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8. Explain the initiation of muscle contraction. What is the role of sarcoplasmic reticulum, myosin head and F-actin during contraction of striated muscles?

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9. Name the category of bones forming the rib cage. How are these articulated to each other to form the cage?

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10. What is the role if calcium ions, troponin and F-Actin during contraction of striated muscles of humans?

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11. Explain giving one example of each, the three types of joints in human skeleton, based on the capacity of movement.

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12. Write short notes on synovial joints.

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13. What is the cause of muscle fatigue? How is it removed?

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14. Explain the sliding filament theory of muscle contraction.

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