



# BIOLOGY

## BOOKS - BAL BHARTI

### SKELETON AND MOVEMENTS

**Think About It**

1. Why do we shiver during winter?



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2. Why do muscles show spasm after rigorous contraction? OR

Muscles show spasm after rigorous contraction. Give reason.



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3. Did you ever feel tickling in muscles?



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1. Can you compare bone, muscle and joint which help in locomotion with any of simple machines you have studied earlier?



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2. Why are long bones slightly bent and not straight?



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3. Why are warming up rounds essential before regular exercise?



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**Try This**

1. Feel your spine (vertebral Column) is it straight or curved?



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## Exercise

1. Choose the correct option

The functional unit of striated muscle is .....

A. cross bridges

B. myofibril

C. sarcomere

D. z-band

**Answer:**



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2. A person slips from the staircase and breaks his ankle bone. Which bones are involved?

A. Carpals

B. Tarsals

C. Metacarpals

D. Metatarsals

**Answer:**



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3. Muscle fatigue is due to accumulation of

.....

A. pyruvic acid

B. lactic acid

C. malic acid

D. succinic acid

**Answer:**



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#### 4. Choose the correct option

Which one of the following is NOT antagonistic muscle pair?

- A. Flexo-extensor
- B. Adductor-abductor
- C. Levator-depressor
- D. Sphinctro-suprinater

**Answer:**



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5. Swelling of sprained foot is reduced by soaking in hot water containing a large amount of common salt,

- A. due to osmosis
- B. due to plasmolysis
- C. due to electrolysis
- D. due to photolysis

**Answer:**



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6. Role of calcium in muscle contraction is .....

A. to break the cross bridges as a cofactor  
in the hydrolysis of ATP

B. to bind with troponin, changing its  
shape so that the actin filament is  
exposed

C. to transmit the action potential across  
the neuromuscular junction.

D. to re-establish the polarisation of the plasma membrane following an action potential

**Answer:**



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7. Hyper-secretion of parathormone can cause which of the following disorders?

A. Gout

B. Rheumatoid arthritis

C. Osteoporosis

D. Gull's disease

**Answer:**



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**8.** What kind of contraction occurs in your neck muscles while you are reading your class assignment?



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**9.** Raju intends to train biceps, while exercising using dumbbells, which joints should remain stationary and which should move?



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**10.** In a road accident, Moses fractured his leg. One of the passer by, tied a wooden plank to the fractured leg while Moses was rushed to the hospital was this essential? Why?



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**11.** Answer the following questions

Sprain is more painful than fracture. Why?



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**12.** Why a red muscle can work for prolonged period whereas white muscle fiber suffers from fatigue after a shorter work?



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**13.** How is the structure of sarcomere suitable for the contractility of the muscle? Explain its function according to sliding filament theory?



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**14.** Ragini, a 50 year old office goer, suffered hair line cracks in her right & left foot in short intervals of time. She was worried about mirror jerks leading to hair line cracks in bones. Doctor explained to her why it must be

happening and prescribed medicines.

What must be cause of Ragini's problem? Why has it occured? What precaustions she should have taken earlier? Why care she should take in future?



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15. State the role of calcium ions in contraction and relaxation of muscles.



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**16. Draw labeled diagram for Synovial joint.**



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