



BIOLOGY

BOOKS - KUMAR PRAKASHAN KENDRA

BIOLOGY (GUJRATI ENGLISH)

LOCOMOTION AND MOVEMENT

Section A

1. How is locomotion and movement, expressed by living organisms ? Explain, giving

examples.



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2. Describe in detail types of movements exhibited by organisms.



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3. Give Information regarding characteristics of muscles and its types.



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4. Discuss the microscopic structure of skeletal muscle tissue.



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5. Describe the structure of contractile proteins with diagram.



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6. Describe the mechanism of muscle contraction with diagram.



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7. Discuss the difference between red muscle and white muscles.



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8. What is skeletal system ? Explain.



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9. Describe various parts/components of axial skeletal system with diagram.



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10. How is appendicular skeleton is formed. Describe its various parts with diagram.



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11. How are the formation of joints occur ?

Discuss in detail, types of joints and its usages.



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12. Give Information regarding disorders of skeletal system.



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13. What is the main difference between locomotion and movement ?



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14. What is the function of cilia in paramecium ?



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15. Which type of movement exhibited by plants ?



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16. Which cells in the human being show amoeboid movement ?



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17. Ciliary movement is observed in which organs of human ?



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18. What is function ciliated epithelium in trachea ?



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19. What are characteristic skeletal muscles ?



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20. Where does muscles are located ?



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21. Visceral muscles are involved in which functions ?



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22. Why cardiac muscles never gets fatigued ?



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23. What is sarcomere?



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24. Give the name of sub units of Troponin .



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25. What is HMM and LMM?



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26. Who put forward sliding filament theory ?



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27. Human skeleton is divisible in which parts

Name it?



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28. How many bones are present in cranium
.Name it ?



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29. Give the name of cranial bones .



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30. Name the first vertebrae.



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31. What is called false ribs ?



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32. Which ribs are floating ribs ?



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33. What is acromion process?



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34. What is the name of collar bone ?



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35. Describe pubic symphysis .



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36. How many types of synovial joints are present ?



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Section B Difference Scientific Reasons

1. Pectoral girdle and pelvic girdle

A.

B.

C.

D.

Answer:



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2. Bones of fore limb and Bones of hind limbs

A.

B.

C.

D.

Answer:



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3. Non-striated muscle and striated muscle

A.

B.

C.

D.

Answer:



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4. Discuss the difference between red muscle and white muscles.

A.

B.

C.

D.

Answer:



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5. Striated muscles get fatigued rapidly.

A.

B.

C.

D.

Answer:



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6. During flight, birds do not fatigue easily.

A.

B.

C.

D.

Answer:



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7. Birds can fly for long distance continuously.

A.

B.

C.

D.

Answer:



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1. Skeletal muscles

A.

B.

C.

D.

Answer:



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2. Visceral muscles

A.

B.

C.

D.

Answer:



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3. Inter calated disc

A.

B.

C.

D.

Answer:



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4. Neuro-Muscular Junction

A.

B.

C.

D.

Answer:



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5. What is sarcomere?

A.

B.

C.

D.

Answer:



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6. What is acromion process?

A.

B.

C.

D.

Answer:



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7. Acetabulum

A.

B.

C.

D.

Answer:



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8. Red muscles

A.

B.

C.

D.

Answer:



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9. Explain Synovial joint.

A.

B.

C.

D.

Answer:



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10. Troponin

A.

B.

C.

D.

Answer:



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11. A-disc



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12. I-disc



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13. Z-line



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14. H-line



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15. HMM



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16. LMM



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17. ATP :



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Section D Textual Exercise

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. State True or false

H zone in striated muscle consists of thick and thin filament.



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4. Match Column I with Column II :

Column-I		Column-II	
(a)	Smooth muscle	(i)	Myoglobin
(b)	Tropomyosin	(ii)	Thin filament
(c)	Red muscle	(iii)	Sutures
(d)	Skull	(iv)	Involuntary

A.

B.

C.

D.

Answer:



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

A.

B.

C.

D.

Answer:



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6. Distinguish between

Cardiac muscle and striated muscle



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7. Name the type of joint between the followings :

(a) atlas/axis

(b) carpal/metacarpal of thumb

(c) between phalanges

(d) femur/acetabulum

(e) between cranial bones

(f) between public bones in the pelvic girdle

A.

B.

C.

D.

Answer:



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1. All mammals (except a few) have
cervical vertebrae.



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2. The number of phalanges in each limb of
human is



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3. Thin filaments of myofibril contains 2 'F' actins and two other proteins namely

And



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



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5. Which ribs are floating ribs ?



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6. The human cranium is made of
Bones .



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Section E Solution Of Ncert Exemplar

1. Match the following columns .

Column - I		Column - II	
(a)	Fast muscle fibres	(i)	Myoglobin
(b)	Slow muscle fibres	(ii)	Lactic acid
(c)	Actin filament	(iii)	Contractile unit
(d)	Sarcomere	(iv)	I-band

A. (a-i),(b-ii),(c-iv),(d-iii)

B. (a-ii),(b-i),(c-iii),(d-iv)

C. (a-ii),(b-i),(c-iv),(d-iii)

D. (a-iii),(b-ii),(c-iv),(d-i)

Answer: C



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2. Ribs are attached to

A. Scapula

B. Sternum

C. Clavicle

D. Ileum

Answer: B



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3. 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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4. ATPase of the muscle is located in

A. Actinin

B. troponin

C. Myosin

D. Actin

Answer: C



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5. Intervertebral disc is found in the vertebral column of

A. Birds

B. Reptiles

C. Mammals

D. Amphibians

Answer: C



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6. Which of the following is showing the correct sequential order of vertebrae in the vertebrae column of human body ?

- A. Cervical-lumbar-thoracic-sacral-coccygeal
- B. Cervical-thoracic-sacral-lumbar-coccygeal
- C. Cervical-sacral-thoracic-lumbar-coccygeal
- D. Cervical-thoracic-lumbar-sacral-coccygeal

Answer: D



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7. Which one of the following option is incorrect ?

A. Hinge joint - between Humerus and Pectoral girdle

B. Pivot joint - between atlas, axis and occipital condyle

C. Gliding joint - between the carpals

D. Saddle joint -between carpel and metacarpals of thumb

Answer: A



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8. Knee joint and elbow joints are example of

- A. Saddle joint
- B. Ball and socket joint
- C. Pivot joint
- D. Hinge joint

Answer: D



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9. Macrophages and leucocytes exhibit

- A. Cilliary movement
- B. Flagellar movement
- C. Amoeboid movement
- D. Gliding movement

Answer: C



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

A. Arthritis

B. Osteoporosis

C. Rickets

D. Atherosclerosis

Answer: D



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11. Which one of the following statement is incorrect ?

A. Heart muscles are striated and involuntary

B. The muscles of the hands and legs are striated and voluntary

C. The muscles located in the inner walls of alimentary canal are striated and voluntary

D. Muscles located in reproductive tracts
are unstriated and voluntary

Answer: C



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12. Which one of the statement is true :

A. Head of humerus bone articulates with
acetabulum of pectoral girdle.

B. Head of humerus bone articulates with
glenoid cavity of pectoral gridle.

C. Head of humerus bone articulates with a
cavity called acetabulum of pelvic girdle.

D. Head of humerus bone articulates with
glenoid cavity of pelvic girdle.

Answer: B



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13. Muscles with characteristics striations and involuntary are

- A. Muscles in the wall of alimentary canal
- B. Muscles of the heart
- C. Muscles assisting locomotion
- D. Muscles of the eyelids

Answer: B



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14. Match the following columns .

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width="80%">

A. (a-ii),(b-i),(c-iii),(d-iv)

B. (a-iv),(b-iii),(c-i),(d-ii)

C. (a-ii),(b-i),(c-iv),(d-iii)

D. (a-iv),(b-i),(c-ii),(d-iii)

Answer: B



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Section E Solution Of Ncert Exemplar Very Short Answer Type Question

1. Which cells in the human being show amoeboid movement ?



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2. Name the cells/tissue in human body which exhibit ciliary movement



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3. Locomotion requires a perfect coordinated activity of muscular, systems.



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4. Sarcolemma, 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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5. Label the different components of actin filaments in the diagram given below.



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



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8. Which tissue is afflicted by Myasthenia gravis ? What is the underlying cause ?



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



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



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



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Section E Solution Of Ncert Exemplar Short Answer Type Question

1. With respect to rib cage, explain the following



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2. 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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3. 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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4. 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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5. Name atleast two hormones which result in fluctuation of Ca^{++} level.



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6. 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 loss 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.



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7. Radha was running on a treadmill at a great speed for 15 minutes continuously. She stopped the treadmill and abruptly came out. For the next few minutes, she was breathing

heavily fast. Answer the following question.

(a) What happened to her muscles when she strenuously exercised ?

(b) How did her breathing rate changed ?



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8. Write a few lines about Gout .



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9. What is the source of energy for muscle contraction ?



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10. What are the points for articulation of pelvic and pectoral girdles ?



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



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



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4. Pectoral girdle and pelvic girdle



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Questions From Module Give Answer Of The Following Briefly

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



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2. What is HMM and LMM?





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3. State the number of bones of cranium and face .



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4. What is sarcolemma ?



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5. State the location of visceral muscles .



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6. Give the reason of osteoporosis .



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Questions From Module Give Answer Of The Following Short

1. Write short note - Pectoral girdle .



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Questions From Module Give Answer As Per Instructions

1. Write short note - Ribs.



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2. Describe the structure of contractile proteins with diagram.



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3. Write a note on Muscle tissue



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