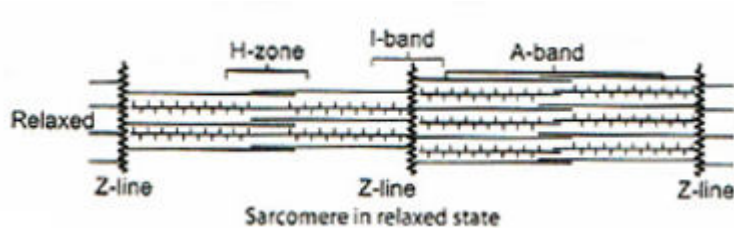


Topic :-Locomotion & Movement

- 1 (d)
A fracture of the distal end of radius, in which the distal fragment displaced posteriorly is called **Colles' fracture**.
- 2 (c)
Sliding of actin and myosin filaments constitutes till the Ca^{2+} ions are pumped back to the sarcoplasmic cisternae, resulting in masking the actin filaments. This causes the return of Z lines back to their original position, *i.e.*, relaxation
- 3 (a)
Osteoporosis Age-related disorder characterized by decreased bone mass and increased chances of fractures. Decreased level of oestrogen is a common cause of this disease
- 4 (b)
During muscle contraction, actin and myosin interact to form actomyosin. According to sliding filament theory, cross bridge are formed by myosin filament to slide actin filament. During muscle contraction, length of A- band remains constant.
- 5 (b)
Sarcolemma is the tough elastic membrane formed by the modified plasma membrane over the **muscle fibres**.
- 6 (d)
Human vertebral column is formed by 33 vertebrae which are as follow:
Cervical vertebrae - 7
Thoracic vertebrae - 12
Lumbar vertebrae - 5
Sacrum, sacral vertebrae - 5
Coccyx, coccygeal vertebrae - 4
- 7 (d)
During anaerobic situation, lactic acid formation becomes start by the body cells. Later on, this lactic acid is delivered by the blood to the liver, where lactic acid dehydrogenase enzyme converts lactic acid to pyruvic acid.
- 8 (a)
 Ca^{2+} ions is essential of muscle contraction, neuro- muscular functions and nerve impulse transmission.
- 9 (d)
All of the above.



The thick filaments lie parallel to one another and thin filaments are present in orderly array between the thick filaments. In the centre of the I-band, there is a band of amorphous material called Z-line. In the middle of the A-band a comparatively less dark zone called H-zone of band is present. The area between the two Z-lines is called sarcomere. M-line is present, in the middle of H-zone

10

(c)

Each myofibril has an alternate dark and light bands on it. A detailed study of the myofibril has established that the striated appearance is due to the distribution pattern of two important proteins, i.e., actin and myosin

11

(d)

Latissimus dorsi is one of the pair of large triangular muscles on thoracic and lumbar areas of the back. The latissimus dorsi extends, adducts and rotates the arm medially, draws the shoulder back and down.

12

(b)

Arthritis.

Arthritis Inflammation of joints

Rheumatoid arthritis Hard tissue deposits over articular cartilage along with the higher secretion of synovial fluid, causing pain and stiffness which leads to rheumatoid arthritis
Osteoarthritis Tearing of articular cartilage and development of bony lumps at places causing pain, stiffness and permanent bending which lead to osteoarthritis

13

(a)

Elevation involves the raising of a part, e.g., standing on tiptoe, masseter raises the lower jaw, etc. Flexion involves the bending of a part over another, e.g., forearm towards upper arm by biceps, while extension involves straightening of a bent part, e.g., bent forearm is straightened or extended by triceps.

14

(c)

An acromian process is found in pectoral girdle of mammals.

15

(d)

The olfactory capsule in the case of mammals (e.g., rabbit) is taken into the facial region. These capsules are dorsally bounded by an elongated, flat, membranous, nasal bone, ventrally by Y-shaped vomers and laterally by premaxilla and maxilla bone. Medially the two chambers are separated by a cartilaginous internasal septum of mesethmoid bone.

16

(c)

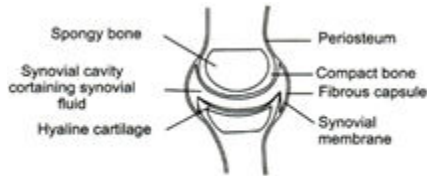
During contraction and relaxation of muscles, both I-band and H-zone progressively shorten and disappears.

Dark A-band (anisotropic) undergoes no change during contraction and relaxation of muscle fibres.

17 (d)
Cartilaginous joints allows only some movements at the joints through the compression of the discs of cartilages, \square , \square , vertebrae of vertebral column

18 (a)
Two f-actins

19 (d)
Structure of synovial joint is as follows



Structure of synovial/freely movable joint

(i) Synovial Cavity

- (a) Contains mucin, a lubricant for joint surfaces
- (b) Reduces friction between the joint surface
- (c) Allows the movements of nutrients and respiratory gases

(ii) Hyaline Cartilage

- (a) Contains no blood vessels or nerves
- (b) Reduces the friction between bones during movement
- (c) Because of its elastic property, it also acts as shock absorber

(iii) Fibrous Capsule

- (a) Formed by the number of ligaments
- (b) Arrangement in such a way, as to cope effectively with the particular stresses suffered by the joints

(iv) Synovial membrane

- (a) Secretes synovial fluid (a clear sticky fluid) into the synovial cavity
- (b) Acts as water proof seal, preventing escape of synovial fluid
- (c) Allows movement of nutrients and respiratory gases

20 (c)
All except III

ANSWER-KEY										
Q.	1	2	3	4	5	6	7	8	9	10
A.	D	C	A	B	B	D	D	A	D	C
Q.	11	12	13	14	15	16	17	18	19	20
A.	D	B	A	C	D	C	D	A	D	C