CHAPTER 7

Locomotion and Movement

Types of Movement and Muscle

1. During muscular contraction which of the following events occur?

A. 'H' zone disappears
B. 'A' band widens
C. 'I' band reduces in width
D. Myosine hydrolyzes ATP, releasing the ADP and Pi
E. Z-lines attached to actins are pulled inwards

Choose the correct answer from the options given below. *(2021)*

a. A, B, C, D only
b. B, C, D, E only
c. B, D, E, A only
d. A, C, D, E only

2. Calcium is important in skeletal muscle contraction because it: *(2018)*

a. Binds to troponin to remove the masking of active sites on actin for myosin.
b. Activates the myosin ATPase by binding to it.
c. Detaches the myosin head from the actin filament.
d. Prevents the formation of bonds between the myosin cross bridges and the actin filament.

3. Name the ion responsible for unmasking of active sites for myosin for cross–bridge activity during muscle contraction: *(2016-II)*

a. Sodium
b. Potassium
c. Calcium
d. Magnesium

4. Sliding filament theory can be best explained as: *(2015)*

a. Actin and myosin filaments do not shorten but rather slide pass each other
b. When myofilaments slide pass each other, myosin filaments shorten while actin filaments do not shorten
c. When myofilaments slide pass each other, actin filaments shorten while myosin filament do not shorten
d. Actin and myosin filaments shorten and slide pass each other

5. Stimulation of a muscle fibre by a motor neuron occurs at: *(2014)*

a. The sacroplasmic reticulum
b. The neuromuscular junction
c. The transverse tubules
d. The myofibril

6. The H-Zone in the skeletal muscle fibre is due to: *(2013)*

a. Extension of myosin filaments in the central portion of the A-band
b. The absence of myofibrils in the central portion of A-band
c. The central gap between myosin filaments in the A-band
d. The central gap between actin filaments extending through myosin filaments in the A-band

Skeletal System

7. Match List-I with List-II.

List-I		List-II	
A.	Scapula	i.	Cartilaginous joints
B.	Cranium	ii.	Flat bone
C.	Sternum	iii.	Fibrous joints
D.	Vertebral column	iv.	Triangular flat bone

Choose the correct answer from the options given below. *(2021)*

a. A-ii B-iii C-iv D-i
b. A-iv B-ii C-iii D-i
c. A-iv B-iii C-ii D-i
d. A-i B-iii C-ii D-iv

8. Match the following columns and select the correct option. *(2020)*

Column-I		Column-II	
1.	Floating ribs	i.	Located between second and seventh ribs
2.	Acromion	ii.	Head of the humerus
3.	Scapula	iii.	Clavicle
4.	Glenoid cavity	iv.	Do not connect with the sternum

	(1)	(2)	(3)	(4)
a.	(i)	(iii)	(ii)	(iv)
b.	(iii)	(ii)	(iv)	(i)
c.	(iv)	(iii)	(i)	(ii)
d.	(ii)	(iv)	(i)	(iii)

9. Select the correct option. *(2019)*

a. 8th, 9th and 10th pairs of ribs articulate directly with the sternum.

b. 11th and 12th pairs of ribs are connected to the sternum with the help of hyaline cartilage.

c. Each rib is a flat thin bone and all the ribs are connected dorsally to the thoracic vertebrae and ventrally to the sternum.

d. There are seven pairs of vertebrosternal, three pairs of vertebrochondral and two pairs of vertebral ribs.

10. Out of 'X' pairs of ribs in humans only 'Y' pairs are true ribs. Select the option that **correctly** represents values of X and Y and provides their explanation: *(2017-Delhi)*

a.	X = 12, Y = 7	True ribs are attached dorsally to vertebral column and ventrally to the sternum
b.	X = 12, Y = 5	True ribs are attached dorsally to vertebral column and sternum on the two ends
c.	X = 24, Y = 7	True ribs are dorsally attached to vertebral column but are free on ventral side
d.	X = 24, Y = 12	True ribs are dorsally attached to vertebral column but are free on ventral side

11. Glenoid cavity articulates: *(2015)*

a. Clavicle with scapula b. Humerus with scapula

c. Clavicle with acromion d. Scapula with acromion

Joints

12. The pivot joint between atlas and axis is a type of *(2017-Delhi)*

a. Fibrous joint b. Cartilaginous joint

c. Synovial joint d. Saddle joint

Disorders of Muscular and Skeletal System

13. Chronic auto immune disorder affecting neuromuscular junction leading to fatigue, weakening and paralysis of skeletal muscle is called as: *(2021)*

a. Muscular dystrophy b. Myasthenia gravis

c. Gout d. Arthritis

14. Match the following columns and select the correct option: *(2020-Covid)*

Column-I		Column-II	
1.	Gout	i.	Decreased levels of estrogen
2.	Osteoporosis	ii.	Low Ca^{++} ions in the blood
3.	Tetany	iii.	Accumulation of uric acid crystals
4.	Muscular dystrophy	iv.	Auto immune disorder
		v.	Genetic disorder

	(1)	(2)	(3)	(4)
a.	(iii)	(i)	(ii)	(v)
b.	(iv)	(v)	(i)	(ii)
c.	(i)	(ii)	(iii)	(iv)
d.	(ii)	(i)	(iii)	(iv)

15. Which of the following muscular disorder is inherited? *(2019)*

a. Tetany b. Muscular dystrophy

c. Myasthenia gravis d. Botulism

16. Osteoporosis, an age–related disease of skeletal system, may occur due to: *(2016 - II)*

a. Decreased level of estrogen

b. Accumulation of uric acid leading to inflammation of joints.

c. Immune disorder affecting neuromuscular junction leading to fatigue.

d. High concentration of Ca^{++} and Na^{+}.

17. Lack of relaxation between successive stimuli in sustained muscle contraction is known as: *(2016-I)*

a. Spasm b. Fatigue

c. Tetanus d. Tonus

18. Which of the following joints would allow no movement? *(2015 Re)*

a. Cartilaginous joint b. Synovial joint

c. Ball and Socket joint d. Fibrous joint

19. Select the correct matching of the type of the joint with the example in human skeletal system: *(2014)*

Type of joint		Example
a.	Gliding joint	Between carpals
b.	Cartilaginous joint	Between frontal and parietal
c.	Pivot joint	Between third and fourth cervical vertebrae
d.	Hinge joint	Between humerus and pectoral girdle

20. The characteristics and an example of a synovial joint in humans is: *(2013)*

Characteristics		Examples
a.	Lymph filled between two bones, limited movement	Gliding joint between carpals
b.	Fluid cartilage between two bones, limited movements	Knee joints
c.	Fluid filled between two joints, provides cushion	Skull bones
d.	Fluid filled synovial cavity between two bones	Joint between atlas and axis

21. Select the correct statement with respect to locomotion in humans: *(2013)*

a. The joint between adjacent vertebrae is a fibrous joint

b. A decreased level of progesterone causes osteoporosis in old people

c. Accumulation of uric acid crystals in joints causes their inflammation

d. The vertebral column has 10 thoracic vertebrae.

Answer Key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
d	a	c	a	b	d	c	c	d	a	b	c	b	a	b	a	c
18	19	20	21													
d	a	d	c													