

Chapter – 17 | Locomotion and Movement**QUIZ
PART-04**

1. Muscle contraction is explained by:

- A. Sliding filament theory
- B. Cell theory
- C. Lock and key theory
- D. Germ theory (A)

Explanation : Sliding filament theory explains muscle contraction.

2. According to sliding filament theory, contraction occurs due to:

- A. Sliding of thin filaments over thick filaments
- B. Breaking of bones
- C. Expansion of cartilage
- D. Formation of new muscles (A)

Explanation : Actin filaments slide over myosin filaments.

3. Muscle contraction is initiated by a signal from:

- A. Central nervous system
- B. Digestive system
- C. Respiratory system
- D. Skeletal system only (A)

Explanation : CNS sends signals through motor neurons.

4. The junction between motor neuron and sarcolemma is called:

- A. Neuro-muscular junction
- B. H-zone
- C. A-band
- D. Sarcomere (A)

Explanation : This junction is also called the motor end plate.

5. Which neurotransmitter is released at the neuro-muscular junction?

- A. Acetylcholine
- B. Myoglobin
- C. Calcium carbonate
- D. Chondroitin (A)

Explanation : Acetylcholine generates an action potential in the sarcolemma.

6. Increase in Ca^{2+} level causes calcium to bind with:

- A. Troponin
- B. Myosin tail
- C. Sarcolemma
- D. Z-line (A)

Explanation : Calcium binds with troponin and exposes active sites on actin.

7. Cross bridge formation occurs between:

- A. Myosin head and exposed actin site
- B. Z-line and M-line
- C. Bone and cartilage
- D. Rib and sternum (A)

Explanation : Myosin head attaches to active sites on actin.

8. During contraction, which band retains its length?

- A. A-band
- B. I-band
- C. H-zone
- D. Z-line (A)

Explanation : A-band remains unchanged during muscle contraction.

9. Repeated muscle activation may cause fatigue due to accumulation of:

- A. Lactic acid
- B. Oxygen
- C. Myoglobin
- D. Calcium salts (A)

Explanation : Anaerobic breakdown of glycogen produces lactic acid.

10. Red muscles contain high amount of:

- A. Myoglobin
- B. Uric acid
- C. Chondroitin
- D. Synovial fluid (A)

Explanation : Myoglobin stores oxygen and gives red muscles their colour.