Level-1 Semester-2

Histology - MSS

BERLIN

SCAN ME

MCQ Lecture 1

SKELETAL MUSCLE

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MCQ on Skeletal Muscle

1. The space between successive Z lines is known as:- a) A band b) M zone c) H zone d) I band e) Sarcomere	**E**
2. The proteins that form thin filaments in skeletal muscles are:- a) Actin, troponin, myosin b) Troponin & actin only c) Troponin, Tropomyosin & myosin d) Actin, troponin & Tropomyosin e) Troponin & myosin only	**D**
3. Regarding myofibrils:- a) Each dark band is divided at its center by a light disc called z-line b) Each light band is divided at its center by a dark line called H-zone c) The Sarcomere is the area between two Z-lines d) The Sarcomere the functional non-contractile unit of a myofibril e) The Sarcomere includes a whole I band and 1/2 of A band on either sides	**C**
4. Myofilaments of skeletal muscle fibers:- a) Are transversely arranged b) Thin filaments are formed of myosin c) Thick filaments are formed of actin d) Thin filaments extend from Z line to H zone e) Thick filaments extend from Z line to H zone	**D**
5. The sarcomere of skeletal muscle fibers:- a) Lie between two H-zones b) Formed of Whole A (Dark) band and half of the I (Light) band on each side c) Formed of Whole I (Light) band and half of the A (Dark) band on each side d) Represents the non-contractile element of myofibril e) Become elongated by contraction	**B**

6. The plasma membrane of muscle cell is called:- a) Endomysium b) Sarcolemma c) Sarcoplasm d) Perimysium e) Epimysium	**B**
7. The following is not under voluntary control:- a) Muscles of the eye b) Muscles of the face c) The muscles of the tongue d) Muscles of the pharynx e) Muscles of the neck	**D**
8. Endomysium:- a) Contains smooth muscle fibers b) Surrounds each fascicle of a muscle c) Surrounds each muscle fiber d) Surrounds the entire muscle e) Formed of dense CT	**C**
9. Z lines:- a) Are electron lucent (light) lines b) Bisect A-bands c) Two sarcomeres are found between 2 successive Z line d) Function to fix actin filaments e) Formed of myosin	**D**
10. Transverse tubules are characterized by all of the following Except:- a) Are present in smooth muscle b) Are extensions of the sarcolemma c) Serve to transmit signals to myofibrils within the cell d) Form part of the triads found in skeletal muscle e) All of the above	**A**

11. <u>All of the following are true about mature skeletal muscle Except:-</u> a) The cells are multinucleated b) A sarcomere is the distance between two successive Z lines c) The nuclei are centrally located d) Myofibrils display the characteristic cross-banding pattern e) Actin, myosin, tropomyosin, and troponin are present	**C**
12.<u>A triad in skeletal muscle:-</u> a) Is located at the H zone b) Consists of two terminal cisternae separated by a slender T tubule c) Cannot be observed in electron microscope d) Is characterized by a T tubule that squeeze calcium e) Consists of two T tubules separated by one narrow terminal cisterna	**B**
13.<u>All of the following are true about sarcoplasmic reticulum Except:-</u> a) It is associated with each myofibril in a skeletal muscle cell b) It binds calcium ions c) It forms part of the triad in skeletal muscle d) It communicates with extracellular space at the surface of sarcolemma e) It releases calcium after receiving a signal for contraction	**D**
14. <u>All the following statements are true about skeletal muscle Except:-</u> a) It consists of large cells called muscle fibers b) Fibers have banding regions or cross-striations due to an organized arrangement of cellular proteins c) Nuclei are centrally positioned within the fibers d) The endomysium surrounds each muscle fiber e) The CT surrounding a muscle bundle is known as the perimysium	**C**
15.<u>The transverse tubule system:-</u> a) Is part of the smooth endoplasmic reticulum b) Depolarizes during muscle relaxation c) Regulates the permeability of the sarcoplasmic reticulum to Ca^{2+} d) Encircles the H band e) Is found in smooth muscle	**C**

16. Each sarcomere of human skeletal muscle is a myofibrillar unit between:- a) Two sets of transverse tubules b) Two H-bands c) Two Z-lines d) Two M-bands e) Two intercalated discs	**C**
17. The T-system of human skeletal muscle is not:- a) Composed of tubular transverse invaginations of the sarcolemma b) Found on the border between the A- and I-bands c) Found at the site of the H-disc d) Involved in the initiation of myofibrillar contraction e) Able to transmit impulses to myofilaments	**C**
18. The triad in skeletal muscle is characterized by all the following Except:- a) It is visible in light microscope b) It is involved in the process of initiating muscle contraction c) It includes the T-tubule d) It includes terminal cisternae of the sarcoplasmic reticulum e) It is visible only by electron microscopy	***A***
19. Which of the following is not present in the sarcoplasm of skeletal muscle:- a) Myoglobin b) Sarcoplasmic reticulum c) Troponin d) Lysosome e) Mitochondria	***D***
20. Connective tissue sheath that surrounds the whole skeletal muscle is called:- a) Endomysium b) Epimysium c) Perimysium d) Sarcomere e) Sarcomysium	***B***

21.Connective tissue sheath that surrounds skeletal muscle bundles is called:- a) Endomysium b) Epimysium c) Perimysium d) Sarcomere e) Sarcomysium	**C**
22. Which of the followings best describes the myosin myofilaments:- a) It has one free end and the other attached to H zone b) It has one free end and the other attached to Z line c) It has two free ends d) It lies from Z line to H zone e) It lies in the I-band only	**C**
23. Which of the followings forms the triad in skeletal muscle fibers:- a) Two actin molecules and one myosin molecule b) Two actin molecules and 2 myosin molecules c) Two T tubules and one terminal cisterna d) Two terminal cisternae and one T tubule e) Two troponin molecules and 2 tropomyosin molecules	**D**
24. EM examination of skeletal muscle myofibrils shows:- a) Irregularly-arranged resulting in irregular transverse striations by LM b) Alternating light and dark bands c) The dark band is divided by Z line d) The light band is divided by M line e) The Z line is made by myosin filaments	**B**
25. The thin filaments are formed of which protein:- a) Myosin b) Desmin c) Titin d) Actin e) Cytokeratin	**D**

26. In the skeletal muscle, T-tubule is located in:- a) At the A-I connection b) In the M-line c) In the Z-line d) In the perinuclear area e) In the middle of I band	**A**
27. Triad are found in:- a) Cardiac muscle b) Gastric muscle c) Uterine muscle d) Hand muscle e) Intestinal muscle	**D**
28. Which organelle is responsible for Ca+ storage in skeletal muscle:- a) Golgi apparatus b) Mitochondria c) Smooth endoplasmic reticulum d) Rough endoplasmic reticulum e) Lysosomes	**C**
29. As regard sarcomere, which of the following statements is correct:- a) Represents the functional contractile unit of skeletal myofibrils b) Is the area that lies between two A-bands c) Contains thick myofilaments only d) Formed of one transverse tubule and two terminal cisternae e) Includes a whole I-band and two halves of A-bands on each side	**A**
30. The thick filaments are formed of which protein:- a) Myosin b) Desmin c) Titin d) Actin e) Cytokeratin	**A**