

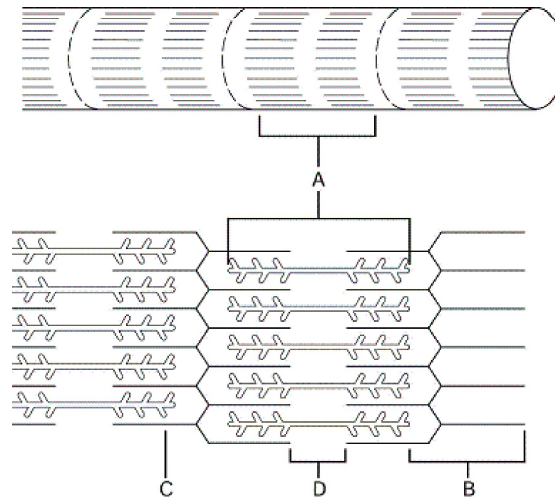
**Warm-Up: Skeletal Muscle Microscopic Anatomy (p 185-187)****Short Answer**

Figure 6.1

Using Figure 6.1, match the following:

1. The I band within a skeletal muscle fiber is indicated by letter \_\_\_\_\_.
2. The A band within a skeletal muscle fiber is indicated by letter \_\_\_\_\_.
3. The bare zone of the A band lacks thin filaments and is represented by letter \_\_\_\_\_.
4. The myofilament composed of actin is indicated by letter \_\_\_\_\_.
5. Muscle tissue has the ability to shorten when adequately stimulated, a characteristic known as \_\_\_\_\_.
6. The \_\_\_\_\_ zone of a sarcomere contains no actin filaments while the skeletal muscle is at rest (noncontractile state).
7. The heads of the myosin myofilaments are called \_\_\_\_\_ when they link the thick and thin filaments together during skeletal muscle contraction.

**True/False:** Indicate whether the statement is true or false.

- \_\_\_\_\_ 8. The striations seen in skeletal muscle are actually alternating A and I bands.
- \_\_\_\_\_ 9. The sarcoplasmic reticulum wraps like a sleeve around the myofibril and stores and releases calcium.

\_\_\_\_\_ 10. Thick filaments are made of a protein called actin.

**Multiple Choice:** *Identify the choice that best completes the statement or answers the question.*

\_\_\_\_\_ 11. A sarcomere is:

- (A) the nonfunctional unit of skeletal muscle
- (B) the wavy lines on the cell, as seen in a microscope
- (C) the area between two intercalated discs
- (D) the contractile unit between two Z discs
- (E) a compartment in a myofibril

\_\_\_\_\_ 12. Which one of the following is composed of myosin protein:

- (A) thick filaments
- (B) Z discs
- (C) thin filaments
- (D) all myofilaments
- (E) light bands

\_\_\_\_\_ 13. Place these structures of the skeletal muscle in order from largest to smallest:

1. fascicle
2. myofibril
3. muscle fiber (cell)
4. myofibril
5. sarcomere

- (A) 1, 4, 3, 2, 5
- (B) 3, 1, 2, 4, 5
- (C) 1, 3, 4, 5, 2
- (D) 2, 5, 4, 3, 1
- (E) 3, 2, 5, 4, 1

\_\_\_\_\_ 14. The light and dark banding pattern seen in striated muscle, like skeletal muscle, originate from:

- (A) repetitive Z discs
- (B) presence of H zones and Z discs
- (C) layers of thick and thin filaments
- (D) organization of M lines, H zones, and Z discs
- (E) alternating light and dark bands

\_\_\_\_\_ 15. An elaborate and specialized network of membranes in skeletal muscle cells that function in calcium storage is the:

- (A) intermediate filament network
- (B) sarcolemma
- (C) sarcoplasmic reticulum
- (D) mitochondria
- (E) myofibrillar network

\_\_\_\_\_ 16. During skeletal muscle contraction, myosin heads attach to active sites of:

- (A) thick filaments
- (B) the H zone
- (C) myosin filaments
- (D) Z discs
- (E) actin filaments