

NSCA CSCS Exam

Volume: 600 Questions

Question No: 1

Each muscle fiber is surrounded by a connective tissue called?

- A. Fasciculi
- B. Perimysium
- C. Endomysium
- D. Epimysium

Answer: C

Question No: 2

What is released from the sarcoplasmic reticulum into the myofibril, causing tension development in a muscle?

- A. Calcium ions that bind to troponin
- B. Calcium ions that bind to tropomyosin
- C. Sodium ions that bind to troponin
- D. Sodium ions that bind to tropomyosin

Answer: A

Question No: 3

What type of muscular contraction occurs in the pectoralis major during the slow, controlled, downward phase of a bench press?

- A. Concentric
- B. Isometric
- C. Myocentric
- D. Eccentric

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Answer: D

Question No: 4

What is the thick structural protein inside the sarcomere?

- A. Actin
- B. Myosin
- C. Sarcoplasm
- D. Sarcolemma

Answer: B

Question No: 5

A muscle fiber that is small in diameter has a slow contraction speed, and a high capillary density would be classified as?

- A. Type I
- B. Type IIa
- C. Type IIb
- D. Type IIc

Answer: A

Question No: 6

Through which of the following valves does blood flow after contraction of the right atrium?

- A. Aortic
- B. Pulmonary
- C. Mitral
- D. Tricuspid

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Answer: D

Question No: 7

During a typical electrocardiogram, atrial depolarization is represented by?

- A. P-wave
- B. QRS complex
- C. T-wave
- D. U-wave

Answer: A

Question No: 8

While reading an ECG, electrical potential that depolarizes the ventricles is represented by?

- A. P-wave
- B. QRS complex
- C. T-wave
- D. U-wave

Answer: B

Question No: 9

What blood vessel functions to exchange oxygen, fluid, nutrients, electrolytes, hormones, and other substances between the blood and the interstitial fluid in the various tissues of the body?

- A. Arteries
- B. Capillaries
- C. Veins
- D. Venules

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Answer: B

Question No: 10

Where are normal rhythmic electrical impulses initiated in the heart?

- A. Sinoatrial (SA) node
- B. Atrioventricular (AV) bundle
- C. Purkinje fibers
- D. Atrioventricular (AV) node

Answer: A

Question No: 11

When performing a biceps curl, tension in the biceps brachii muscle increases. Which of the following structures detects and responds to the tension by reflexively reducing muscle activation?

- A. Golgi tendon organ
- B. Muscle spindle
- C. Pacinian corpuscle
- D. Lamellar corpuscle

Answer: A

Question No: 12

An athlete training for a marathon would benefit from having a high concentration of which muscle fiber type?

- A. Type I
- B. Type IIa
- C. Type IIb
- D. Type III

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Answer: A

Question No: 13

A college football player decides to add 30 minutes of intense stationary cycling every other day to his current resistance training program. Which of the following best describes the effect the stationary cycling will have on his performance?

- A. No effect on strength gains
- B. Strength gains enhanced
- C. Strength gains compromised
- D. Number of muscle fibers increased

Answer: C

Question No: 14

Which of the following represents the correct transmission of the heart's electrical impulse?

- A. AV node, AV bundle, SA node, Purkinje fibers
- B. SA node, AV node, AV bundle, Purkinje fibers
- C. SA node, Purkinje fiber, AV node, AV bundle
- D. AV node, AV bundle, Purkinje fibers, SA node

Answer: B

Question No: 15

Which of the following represents a muscle of expiration?

- A. Scalene
- B. External Intercostal
- C. Internal Intercostal
- D. Anterior Serratus

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Answer: C

Question No: 16

Identify the correct path in which inhaled air is distributed to the lungs.

- A. Trachea, Bronchi, Bronchioles, Alveoli
- B. Trachea, Alveoli, Bronchi, Bronchioles,
- C. Trachea, Bronchioles, Bronchi, Alveoli
- D. Trachea, Alveoli, Bronchioles, Bronchi

Answer: A

Question No: 17

Heavy resistance exercise has what effect on cardiac output?

- A. Increases rapidly
- B. Decreases
- C. No change
- D. Decreases rapidly

Answer: A

Question No: 18

What is the value of a metabolic equivalent (MET)

- A. 2.5 ml of oxygen per kilogram of body weight per minute
- B. 3.5 ml of carbon dioxide per kilogram of body weight per minute
- C. 3.5 ml of oxygen per kilogram of body weight per minute
- D. 2.5 ml of carbon dioxide per kilogram of body weight per minute

Answer: C

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Question No: 19

Which of the following structures of a sarcomere shrinks in the pectoralis major muscle during the concentric action of a bench press?

- A. A-band
- B. M-line
- C. H-zone
- D. Z-line

Answer: C

Question No: 20

Which of the following identifies the layer of connective tissue enveloping a bundle of muscle fibers?

- A. Endomysium
- B. Perimysium
- C. Epimysium
- D. Endomysium

Answer: B

Question No: 21

A junior hockey player is performing a standing dumbbell curl exercise. Which of the following muscles acts as an antagonist to the biceps brachii?

- A. Triceps Brachii
- B. Brachialis
- C. Coracobrachialis
- D. Flexor Carpi Radialis

Answer: A

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Question No: 22

The amount of force produced by a muscle at any given time is directly related to which of the following.

- A. The number of myosin cross bridge heads that are attached to actin filaments
- B. The number of actin cross bridge heads that are attached to myosin filaments
- C. The strength of the attachment between the myosin cross bridge heads and the actin filaments
- D. The strength of the attachment between the actin cross bridge heads and the myosin filaments

Answer: A

Question No: 23

When a motor unit is stimulated, all of its innervated muscle fibers fully contract due to

- A. the size principle.
- B. the principle of selective recruitment.
- C. the all-or-none law.
- D. muscle tetanus.

Answer: C

Question No: 24

A high myoglobin content is a characteristic of which muscle fiber type?

- A. Type I
- B. Type IIa
- C. Type IIx
- D. Type III

Answer: A

Question No: 25

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Having a high concentration of Type II muscle fibers would be most beneficial to an athlete participating in which of the following sports?

- A. Marathon
- B. Cross Country Skiing
- C. Distance Cycling
- D. Tennis

Answer: D

Question No: 26

A volleyball player would like to increase her vertical jump, how can this athlete improve her force production?

- A. Recruit small muscles or muscle groups during an activity
- B. Increase the cross sectional area of muscles uninvolved in the activity
- C. Preload a muscle involved in the activity just before a concentric muscle action
- D. Unload a muscle involved in the activity just before a concentric muscle action

Answer: C

Question No: 27

When punting a football, the punter's leg is stretched just prior to making contact with the football. Which of the following structures detects and responds to that stretch by reflexively increasing muscle activity?

- A. Golgi tendon organ
- B. Muscle spindle
- C. Extrafusal muscle
- D. Pacinian corpuscle

Answer: B

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Question No: 28

Through which valve does blood flow after contraction of the left ventricle?

- A. Aortic
- B. Pulmonary
- C. Mitral
- D. Tricuspid

Answer: A

Question No: 29

Which component of the electrical conduction system of the heart has the greatest discharge rate?

- A. SA Node
- B. AV Node
- C. AV Bundle
- D. Purkinje Fibers

Answer: A

Question No: 30

Which of the following occurs during the T wave of a typical ECG?

- A. Atrial depolarization
- B. Atrial repolarization
- C. Ventricular depolarization
- D. Ventricular repolarization

Answer: D

Question No: 31