BCRPA Kinesiologist Fitness Theory Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

Questions

1. Which muscles are antagonists at the hip joint?

A. Hamstrings and Gastrocnemius

B. Adductors and Iliopsoas

C. Iliopsoas and Gluteus Maximus

D. Rectus femoris and Tensor Fasciae Latae

2. Which muscle is *not* considered part of the gluteal group of muscles?

A. Gluteus Maximus

B. Gluetus Femoris

C. Gluteus Medius

D. Gluteus Minimus

3. Which joint action is primarily involved when performing a bicep curl?

A. Extension

B. Flexion

C. Adduction

D. Rotation

4. According to Canada's physical activity guide, what is the recommended exercise effort for adults?

A. Light effort to vigorous effort

B. Light effort to maximal effort

C. Moderate effort only

D. Very light effort to vigorous effort

5. What is the best indicator of improved muscular endurance?

A. Increased weights lifted

B. Higher number of repetitions

C. Reduced body fat percentage

D. Increased flexibility

6. To increase the intensity of tricep pressdowns, which method is effective?

- **A. Increasing weight for strength**
- **B. Increasing reps only**
- **C. Increasing weight and reps for endurance**
- **D. Increasing weight for strength, increasing reps for endurance**

7. How does aging impact joint conditions such as arthritis?

- **A. It exclusively affects the elderly**
- **B. It can also impact young individuals and athletes**
- **C. It only occurs due to genetic predisposition**
- **D. It solely arises from physical inactivity**

8. Which muscles are responsible for flexion of the hip?

- **A. Iliacus and Psoas major (Iliopsoas)**
- **B. Gluteus maximus**
- **C. Hamstrings**
- **D. Psoas**

9. How is the caloric content of fats commonly calculated?

- **A. 7 calories per gram**
- **B. 8 calories per gram**
- **C. 9 calories per gram**
- **D. 10 calories per gram**

10. Which energy system is primarily used to run up one flight of stairs in about 10 seconds?

- **A. ATP-CP (Anaerobic) system**
- **B. Anaerobic lactic system**
- **C. Aerobic system**
- **D. Heart, lungs and circulatory system**

Answers

1. C
2. B
3. B
4. A
5. B
6. D
7. B
8. A
9. C
10. A

Explanations

1. Which muscles are antagonists at the hip joint?

A. Hamstrings and Gastrocnemius

B. Adductors and Iliopsoas

C. Iliopsoas and Gluteus Maximus

D. Rectus femoris and Tensor Fasciae Latae

The correct answer identifies the iliopsoas and gluteus maximus as antagonist muscles at the hip joint due to their opposing actions. The iliopsoas, which is a primary hip flexor, functions to flex the hip and lift the thigh towards the torso. In contrast, the gluteus maximus is primarily responsible for hip extension, acting to bring the thigh backward and stabilize the pelvis during movement. Understanding muscle antagonism in this context is crucial; antagonistic muscles work in pairs to facilitate controlled movements. For instance, during walking, when the iliopsoas contracts to lift the leg, the gluteus maximus must relax to allow for this upward movement. Similarly, when the gluteus maximus contracts for actions like standing up from a sitting position, the iliopsoas must allow for this hip extension. Considering other options, the hamstrings and gastrocnemius are more involved with knee flexion rather than direct hip joint motion. The adductors and iliopsoas work together to perform hip flexion and adduction, without being direct antagonists. Rectus femoris and tensor fasciae latae primarily act in conjunction, as rectus femoris assists in hip flexion, while tensor

2. Which muscle is *not* considered part of the gluteal group of muscles?

A. Gluteus Maximus

B. Gluetus Femoris

C. Gluteus Medius

D. Gluteus Minimus

The gluteal group of muscles primarily includes the gluteus maximus, gluteus medius, and gluteus minimus, which are essential for hip movement and stability. The gluteus maximus is the largest and most powerful muscle among them, responsible for extending the hip, while the gluteus medius and minimus help in hip abduction and stabilization during walking or running. The presence of "Gluetus Femoris" as an option highlights a misconception, as there is no muscle by that exact name in human anatomy. The term seems to be a typographical error or a confusion with the actual gluteal muscles. Thus, it does not belong to the gluteal group, leading to the conclusion that it is the muscle that is not part of this group. Understanding the roles of each gluteal muscle not only aids in anatomical knowledge but also enhances the ability to design effective exercise programs that target these specific muscles.

3. Which joint action is primarily involved when performing a bicep curl?

A. Extension

B. Flexion

C. Adduction

D. Rotation

The primary joint action involved when performing a bicep curl is flexion. In this exercise, as you lift the weight by bending the elbow, the angle between the forearm and the upper arm decreases. This action is specifically characterized by the contraction of the biceps brachii muscle, which allows for the upward movement of the forearm. Flexion is a fundamental movement that occurs in various activities, and in the case of the bicep curl, it highlights the primary role of the biceps in lifting the weight against gravity. Understanding why flexion is the correct answer also helps in distinguishing it from the other joint actions listed. Adduction, for example, involves movement toward the midline of the body, which is not a factor in a bicep curl. Similarly, extension would refer to straightening the elbow, opposite to what occurs during a curl. Rotation involves circular movement around an axis, which does not apply in this straightforward flexion movement. Hence, flexion stands out as the key action in executing a bicep curl effectively.

4. According to Canada's physical activity guide, what is the recommended exercise effort for adults?

A. Light effort to vigorous effort

B. Light effort to maximal effort

C. Moderate effort only

D. Very light effort to vigorous effort

The recommendation from Canada's physical activity guide suggests that adults should engage in exercise efforts ranging from light to vigorous intensity levels. This range allows for flexibility in how individuals choose to be active, accommodating different fitness levels, preferences, and lifestyles. Light effort encompasses activities like walking at a leisurely pace, while vigorous effort includes higher intensity exercises such as running, cycling fast, or participating in high-intensity interval training. This breadth encourages more people to meet the guidelines regardless of their starting point. Ensuring that exercise is accessible and enjoyable contributes to long-term adherence to physical activity, promoting overall health and well-being. The additional options do not accurately capture this range. For instance, focusing solely on moderate effort or very light effort would limit the recommended activities, potentially discouraging individuals who may thrive on high-intensity workouts or prefer gentler, more accessible activities. Therefore, the inclusion of both light and vigorous efforts provides a comprehensive approach to sustaining physical activity in adult populations.

5. What is the best indicator of improved muscular endurance?

A. Increased weights lifted

B. Higher number of repetitions

C. Reduced body fat percentage

D. Increased flexibility

The best indicator of improved muscular endurance is the higher number of repetitions that an individual can perform with a given weight. Muscular endurance refers to the ability of a muscle or group of muscles to sustain repeated contractions over a period of time. When a person increases the number of repetitions they can complete at a specific resistance level, it indicates that their muscles are adapting to the physical demands placed upon them, becoming more efficient and resilient. This improvement is typically a result of various physiological adaptations, including increased stamina of the muscular fibers, enhanced blood flow, and greater efficiency in energy utilization. Therefore, the ability to perform more repetitions as a result of training is a clear sign that muscular endurance has improved. While other options, such as increased weights lifted, reduced body fat percentage, and increased flexibility, are related to fitness and conditioning, they do not specifically measure muscular endurance. Increased weights indicate strength gains, reduced body fat is related to body composition, and flexibility pertains to the range of motion, none of which directly assess endurance capabilities.

6. To increase the intensity of tricep pressdowns, which method is effective?

A. Increasing weight for strength

B. Increasing reps only

C. Increasing weight and reps for endurance

D. Increasing weight for strength, increasing reps for endurance

Increasing the intensity of tricep pressdowns effectively involves both increasing weight for strength and increasing reps for endurance. This combination allows for a more nuanced approach to training that targets different muscle fibers and energy systems. When the weight is increased, it promotes greater strength gains as the muscles work harder to lift a heavier load. This is crucial for enhancing overall muscle power and building more muscle mass. Concurrently, increasing the number of repetitions allows for endurance training, helping the muscles sustain longer periods of exertion. This is important for developing the muscle's ability to resist fatigue during prolonged activities. By integrating both strategies, the triceps are not only challenged to grow stronger but are also conditioned to perform over extended periods, maximizing the benefits of the workout. This dual focus on strength and endurance thus effectively elevates the intensity of the tricep pressdowns.

7. How does aging impact joint conditions such as arthritis?

A. It exclusively affects the elderly

B. It can also impact young individuals and athletes

C. It only occurs due to genetic predisposition

D. It solely arises from physical inactivity

The choice that indicates aging can also impact young individuals and athletes is correct because joint conditions like arthritis can develop due to a variety of factors, not just age. While aging certainly increases the risk due to the natural wear and tear on joints over time, younger individuals can also experience arthritis. Certain types, such as juvenile idiopathic arthritis, can affect children and adolescents. Additionally, athletes may face joint issues earlier in life due to the high levels of physical stress and potential injuries they subject their bodies to over time. Arthritis is influenced by multiple elements, including lifestyle factors, acute injuries, and even certain autoimmune conditions, which means that while age is a critical factor in its prevalence, it is not exclusive to the elderly. Therefore, recognizing that younger individuals and athletes are also at risk broadens the understanding of how joint conditions manifest across different age groups, reinforcing the idea that arthritis can affect a wide demographic.

8. Which muscles are responsible for flexion of the hip?

A. Iliacus and Psoas major (Iliopsoas)

B. Gluteus maximus

C. Hamstrings

D. Psoas

The iliacus and psoas major collectively form the iliopsoas muscle group, which is a primary flexor of the hip joint. This muscle group plays a crucial role in bringing the thigh towards the torso, which is essential during activities such as walking, running, and climbing stairs. The iliacus originates from the iliac fossa of the pelvis, while the psoas major originates from the lumbar vertebrae, and together they insert into the lesser trochanter of the femur. The effectiveness of the iliopsoas in hip flexion is significant due to its anatomical position and functionality. It is one of the strongest hip flexors, working synergistically to ensure the smooth movement of the hip joint. Each of these muscles contributes to flexing the hip, highlighting the importance of the iliopsoas group in this specific action.

9. How is the caloric content of fats commonly calculated?

A. 7 calories per gram

B. 8 calories per gram

C. 9 calories per gram

D. 10 calories per gram

The caloric content of fats is commonly calculated as 9 calories per gram. This figure is based on the fact that fats are composed primarily of triglycerides, which yield a higher energy content compared to carbohydrates and proteins. While carbohydrates and proteins provide approximately 4 calories per gram each, fats are denser in energy because of their chemical composition, particularly the presence of long hydrocarbon chains. Fats serve as the body's primary energy storage form and are essential for various physiological functions. Understanding this caloric value is crucial for nutrition and fitness professionals as they design diet plans and evaluate energy intake for weight management and athletic performance. The values provided in the other options, such as 7, 8, and 10 calories per gram, do not accurately reflect the energy yielded by fats and can lead to misconceptions about dietary fat sections.

10. Which energy system is primarily used to run up one flight of stairs in about 10 seconds?

A. ATP-CP (Anaerobic) system

B. Anaerobic lactic system

C. Aerobic system

D. Heart, lungs and circulatory system

The ATP-CP (Anaerobic) system is primarily utilized during short bursts of high-intensity activity, such as running up a flight of stairs in approximately 10 seconds. This energy system provides immediate energy for muscular contractions by using stored adenosine triphosphate (ATP) and creatine phosphate (CP) within the muscle cells. When an athlete engages in an explosive effort, such as sprinting up stairs, the body relies heavily on the ATP-CP system due to its ability to generate energy quickly without the need for oxygen, making it ideal for activities that last under 15 seconds. After this time interval, however, the muscle's ATP and CP stores become depleted, and the body must then begin to utilize other energy systems, such as the anaerobic lactic or aerobic systems, which take longer to kick in and involve different metabolic processes. In this context, while the anaerobic lactic system does play a role in activities that extend beyond 10 seconds, the immediate energy for a quick ascent primarily derives from the ATP-CP system. The aerobic system, although crucial for sustained lower-intensity exercises, is not involved in such short, high-intensity efforts. Additionally, while the heart, lungs, and circul