

Foundations of Exercise Science

Exercise Science · Answer Key · 8 Questions

1. Which muscle fiber type is primarily responsible for high-intensity, short-duration activities such as sprinting?

- A) Type I fibers
- B) Type IIx fibers**
- C) Type IC fibers
- D) Cardiac muscle fibers

2. What is the primary function of the Golgi tendon organ in the musculoskeletal system?

- A) Stimulating muscle contraction
- B) Monitoring muscle tension to prevent injury**
- C) Increasing range of motion
- D) Storing glycogen

3. Which physiological process describes the body's ability to maintain a stable internal environment during physical activity?

- A) Homeostasis**
- B) Hypertrophy
- C) Metabolism
- D) Vasodilation

4. During aerobic exercise, what is the primary byproduct produced by the breakdown of glucose when oxygen is available?

- A) Lactic acid
- B) Carbon dioxide and water**
- C) Creatine phosphate
- D) Ammonia

5. Which hormone is primarily responsible for promoting muscle protein synthesis following resistance training?

- A) Cortisol
- B) Insulin-like Growth Factor 1 (IGF-1)**
- C) Adrenaline
- D) Glucagon

6. What is the standard unit of measurement used to express the metabolic cost of a physical activity?

A) Joules

B) METs (Metabolic Equivalents)

C) Newtons

D) Watts

7. Which cardiac measurement is defined as the amount of blood pumped by the heart per single beat?

A) Cardiac output

B) Stroke volume

C) Heart rate variability

D) Ejection fraction

8. The principle of specificity in exercise science dictates that:

A) Adaptations are specific to the type of training performed

B) Exercise intensity must increase every week

C) Training should focus only on large muscle groups

D) Recovery is the most important phase of training