

Fundamentals of Exercise Science

Exercise Science · Answer Key · 18 Questions

1. Which organ system is primarily responsible for transporting oxygen to working muscles during exercise?

A) Digestive system

B) Cardiovascular system

C) Endocrine system

D) Nervous system

2. What is the primary energy substrate used for high-intensity, short-duration exercise?

A) Stored glycogen

B) Adipose tissue

C) Dietary fiber

D) Vitamins

3. Which type of muscle contraction occurs when the muscle lengthens while under tension?

A) Isometric

B) Concentric

C) Eccentric

D) Isokinetic

4. What is the anatomical term for the shoulder blade?

A) Clavicle

B) Humerus

C) Sternum

D) Scapula

5. Which molecule is known as the primary 'energy currency' of the cell?

A) DNA

B) ATP

C) RNA

D) Hemoglobin

6. What is the physiological term for the body's ability to maintain a stable internal environment?

A) Homeostasis

B) Metabolism

C) Hypertrophy

D) Atrophy

7. Which of these is a byproduct of anaerobic metabolism in muscle tissue?

- A) Oxygen
- B) Lactic acid**
- C) Nitrogen
- D) Glucose

8. Which type of muscle fiber is typically associated with endurance activities?

- A) Type I**
- B) Type IIb
- C) Type IIx
- D) Fast-twitch

9. What is the primary function of the heart's left ventricle?

- A) Receiving deoxygenated blood
- B) Pumping oxygenated blood to the body**
- C) Filtering blood
- D) Storing red blood cells

10. Which joint type allows for the greatest range of motion in the human body?

- A) Hinge joint
- B) Ball-and-socket joint**
- C) Pivot joint
- D) Gliding joint

11. What does the FITT principle in exercise prescription stand for?

- A) Fast, Intense, Tough, Training
- B) Frequency, Intensity, Time, Type**
- C) Flexibility, Impact, Tension, Tone
- D) Fluid, Intake, Temperature, Terrain

12. Which protein filament is primarily responsible for muscle contraction along with actin?

- A) Myosin**
- B) Collagen
- C) Elastin
- D) Keratin

13. What is the term for the increase in muscle fiber size due to resistance training?

- A) Hyperplasia
- B) Hypertrophy**
- C) Atrophy
- D) Osteoporosis

14. Where are red blood cells primarily produced in the adult human body?

- A) Liver
- B) Kidneys
- C) Bone marrow**
- D) Lungs

15. Which gas is the primary waste product removed from the body during exhalation?

- A) Oxygen
- B) Nitrogen
- C) Carbon dioxide**
- D) Hydrogen

16. Which structural unit is considered the basic functional unit of a muscle contraction?

- A) Sarcomere**
- B) Neuron
- C) Axon
- D) Mitochondria

17. What is the main role of the alveoli in the respiratory system?

- A) Filtering dust
- B) Gas exchange**
- C) Storing air
- D) Producing mucus

18. Which vitamin is essential for the absorption of calcium for bone health?

- A) Vitamin A
- B) Vitamin C
- C) Vitamin D**
- D) Vitamin K