

***Physiology of Sport and Exercise 7th edition Kenney
Test Bank***

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1. Introduction Chapter Quiz

The study of how our bodies' structures and functions are altered when we are exposed to acute and chronic exercise is an appropriate definition of

- a. sport physiology
- b. exercise nutrition
- *c. exercise physiology
- d. overtraining

2. Introduction Chapter Quiz 2

D.B. Dill was a pioneer in the field of exercise physiology and was well known for his research in

- *a. human responses to exercise, heat, and high altitude
- b. sliding filament theory
- c. energy metabolism
- d. the development of research equipment to measure oxygen consumption

3. Introduction Chapter Quiz 3

The methods and equipment for measuring oxygen consumption during exercise were first developed by

- *a. John Haldane
- b. D.B. Dill
- c. Bengt Saltin
- d. A.V. Hill

4. Introduction Chapter Quiz 4

Which Scandinavian researcher conducted research in the area of physical fitness and endurance capacity?

- *a. Per-Olof Åstrand
- b. Bengt Saltin
- c. Dudley Sargent
- d. Hohwü Christensen

5. Introduction Chapter Quiz 5

Muscle biopsy, a technique originally used in the early 1900s to study muscular dystrophy, was later introduced in the mid-1960s as a method for studying

- a. muscular strength
- b. electromyography (EMG)
- *c. muscle biochemistry
- d. intramuscular temperatures

6. Introduction Chapter Quiz 6

Who worked with P.-O. Åstrand to publish a classic study that provided a means to predict aerobic capacity from submaximal heart rate?

- *a. Irma Rhyming
- b. Birgitta Essen
- c. Barbara Drinkwater
- d. Karen Piehl

7. Introduction Chapter Quiz 7

Homeostasis is best defined as

- a. a low metabolic rate
- b. a change within the internal environment
- *c. organ systems, tissues, cells, and molecules working to regulate our internal environment
- d. a normal external environment

8. Introduction Chapter Quiz 8

Most people achieve their highest aerobic capacity when tested with the use of

- a. a cycle ergometer
- *b. a treadmill
- c. an arm ergometer
- d. the one-mile run field test

9. Introduction Chapter Quiz 9

Which of the following is considered the most appropriate device to evaluate changes in submaximal physiological function before and after training in people whose body weight has changed?

- a. a treadmill
- *b. a cycle ergometer
- c. an arm ergometer
- d. the one-mile run field test

10. Introduction Chapter Quiz10

A research design examining the effect of a single treatment on groups of participants aged 21 to 30 years, 31 to 40 years, and 41 to 50 years is an example of

- *a. a cross-sectional design
- b. a longitudinal design
- c. a placebo design
- d. a crossover design

11. Introduction Chapter Quiz11

Which of the following is the study of the expression of genes at the messenger RNA?

- a. genomics
- *b. transcriptomics
- c. metabolomics
- d. proteomics

12. Chapter 1 Quiz

Muscle found in the walls of the bladder is an example of

- a. cardiac muscle
- b. skeletal muscle
- *c. smooth muscle

13. Chapter 1 Quiz 2

Which of these is the correct order of skeletal muscle hierarchical organization, from largest structure to smallest structure?

- a. muscle fasciculus, entire muscle, myofibril, muscle fiber
- *b. entire muscle, muscle fasciculus, muscle fiber, myofibril
- c. muscle fiber, myofibril, entire muscle, muscle fasciculus
- d. myofibril, muscle fiber, muscle fasciculus, entire muscle

14. Chapter 1 Quiz 3

Ca^{2+} ions (essential for contraction) are stored in the

- a. sarcoplasm
- b. sarcolemma
- *c. sarcoplasmic reticulum
- d. T-tubules

15. Chapter 1 Quiz 4

Which protein is sensitive to Ca^{2+} and thereby helps initiate contraction?

- a. actin
- b. myosin
- *c. troponin
- d. tropomyosin

16. Chapter 1 Quiz 5

The process of plasmalemma depolarization (increase in membrane potential) involves which ion?

- *a. Na^{+}
- b. K^{+}
- c. Ca^{2+}
- d. Cl^{-}

17. Chapter 1 Quiz 6

Which is the correct order of events in a contraction?

- a. T-tubule action potential, Ca^{2+} gathered in, cross-bridging, Ca^{2+} released
- b. Ca^{2+} released, cross-bridging, Ca^{2+} gathered in, T-tubule action potential
- c. cross-bridging, Ca^{2+} released, Ca^{2+} gathered in, T-tubule action potential
- *d. T-tubule action potential, Ca^{2+} released, cross-bridging, Ca^{2+} gathered in

18. Chapter 1 Quiz 7

ATP is required for

- a. muscle contraction only
- b. muscle relaxation only
- *c. both muscle contraction and muscle relaxation
- d. neither muscle contraction nor muscle relaxation

19. Chapter 1 Quiz 8

Type I muscle fibers

- *a. have a high oxidative capacity
- b. store large quantities of glycogen
- c. generate force quickly
- d. fatigue quickly

20. Chapter 1 Quiz 9

The speed of muscle fiber contraction is determined primarily by the

- a. amount of actin and myosin
- b. amount of actin ATPase
- c. diameter of the muscle fiber
- *d. speed of myosin ATPase

21. Chapter 1 Quiz10

Why does a sarcomere that is too short or too stretched produce less force?

- a. Thick filaments get damaged.
- b. Thin filaments become unraveled.
- *c. Not as many cross-bridges can form.
- d. The reduction in force is negligible and can be ignored.

22. Chapter 1 Quiz11

The spring-like characteristic of titin regulates force generation and prevents

- a. shortening
- *b. overstretch
- c. cross-bridge binding
- d. calcium release

23. Chapter 2 Quiz

An example of an energy substrate is

- a. ATP
- *b. palmitic acid
- c. phosphofructokinase
- d. creatine kinase

24. Chapter 2 Quiz 2

Which of these substrate stores in the body can provide the most overall kilocalories?

- a. glycogen
- b. phospholipids
- c. proteins
- *d. triglycerides

25. Chapter 2 Quiz 3

Protein can serve as an energy substrate if

- a. certain amino acids are present
- b. it is utilized by the brain
- c. it is phosphorylated first
- *d. it is first converted to glucose

26. Chapter 2 Quiz 4

Which of the following is responsible for lowering the activation energy of a chemical reaction?

- a. ATP
- b. additional buildup of substrate
- *c. enzyme activity
- d. ADP accumulation

27. Chapter 2 Quiz 5

The anaerobic glycolytic system would be the primary source of ATP for which running event?

- a. 100 m
- *b. 800 m (1/2 mi)
- c. 3,200 m (2 mi)
- d. marathon

28. Chapter 2 Quiz 6

In the absence of oxygen, the final product of glycolysis is

- a. pyruvic acid
- b. acetyl CoA
- c. glucose-1-phosphate
- *d. lactic acid

29. Chapter 2 Quiz 7

For aerobic metabolism, free fatty acids must be converted to acetyl-CoA via

- a. the Krebs cycle
- b. the electron transport chain
- *c. β -oxidation
- d. the citric acid cycle

30. Chapter 2 Quiz 8

Taking into account both oxygen requirements *and* ATP yield, which substrate is more efficient, fat or glucose?

- a. Fat is more efficient.
- *b. Glucose is more efficient.
- c. They are equally efficient.

31. Chapter 2 Quiz 9

In which part of the cell does oxidative phosphorylation occur?

- a. plasma membrane
- b. nucleus
- c. cytosol
- *d. mitochondria

32. Chapter 2 Quiz10

An athlete with a high percentage of type II fibers would exhibit which characteristics?

- a. more mitochondria, higher oxidative enzymes
- b. more mitochondria, lower oxidative enzymes
- c. fewer mitochondria, higher oxidative enzymes
- *d. fewer mitochondria, lower oxidative enzymes

33. Chapter 2 Quiz11

Men and individuals with a higher body mass index have _____ brown adipose tissue than women and individuals with a lower body mass index.