

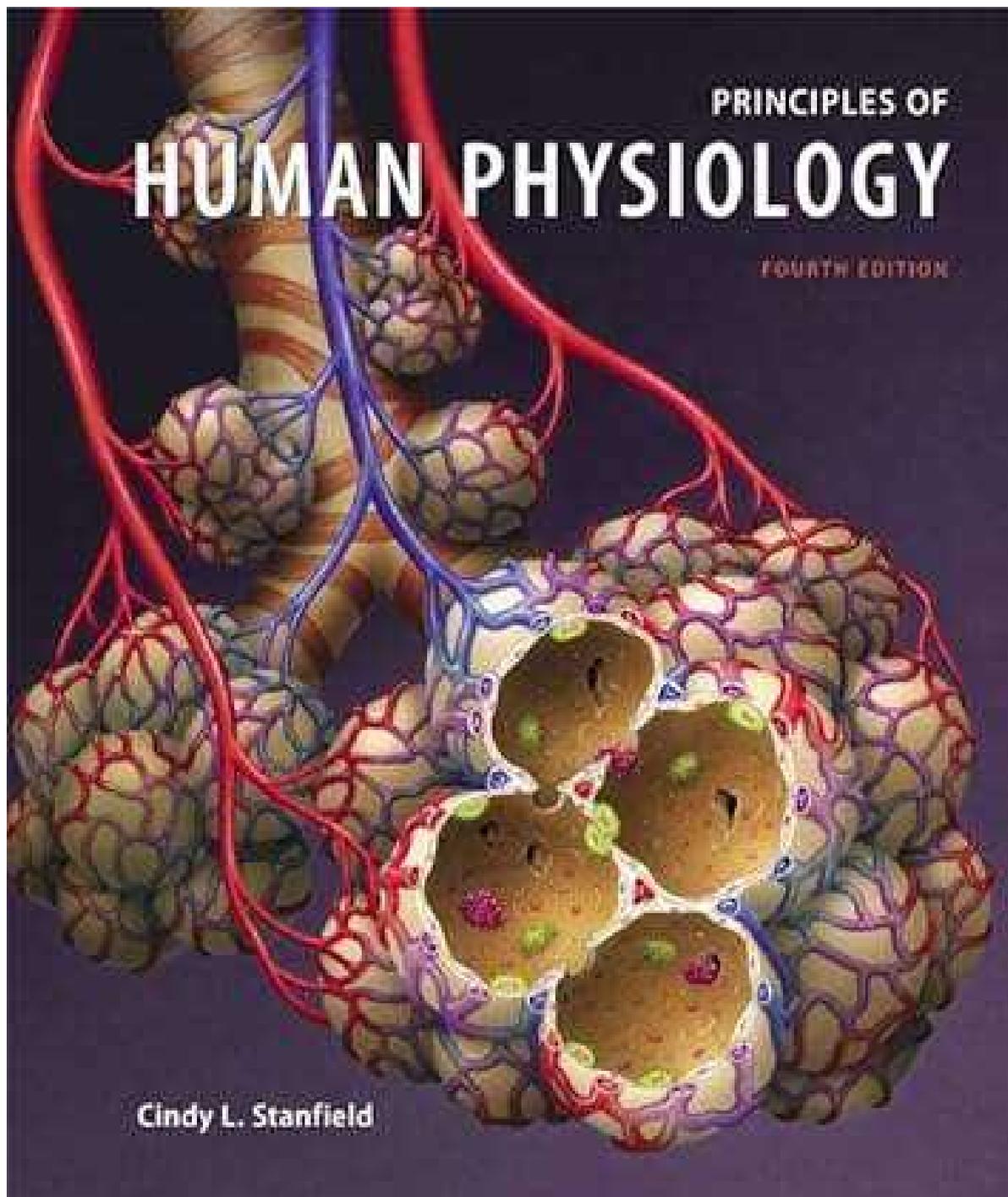
TEST BANK

# Principles of Human Physiology

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4th Edition



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# Chapter 1 Introduction to Physiology

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## Multiple Choice Questions

- 1) The smallest living units capable of carrying out their own basic life functions are called \_\_\_\_\_.
- A) organs
  - B) organ systems
  - C) tissues
  - D) cells
  - E) organelles

Answer: D

Diff: 2 Page Ref: 3

- 2) \_\_\_\_\_ carry/carries oxygen to the cells of the body, while the synthesis of these cells is regulated by the hormone \_\_\_\_\_.
- A) Erythrocytes : bone marrow
  - B) Bone marrow : erythrocyte
  - C) Erythrocytes : erythropoietin
  - D) Erythropoietin : erythrocyte
  - E) Bone marrow : erythropoietin

Answer: C

Diff: 4 Page Ref: 2

- 3) Which of the following is NOT one of the *major* cell types found in the human body?
- A) epithelial cells
  - B) muscle cells
  - C) endocrine cells
  - D) nervous cells
  - E) connective tissue cells

Answer: C

Diff: 3 Page Ref: 3

- 4) Which of the following is NOT a primary type of tissue?
- A) muscle
  - B) skeletal
  - C) nerve
  - D) epithelial
  - E) connective

Answer: B

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- 5) The tissue type that generates mechanical force and movement, and whose activity is controlled both on a voluntary and involuntary level, is \_\_\_\_\_.
- A) muscle tissue
  - B) epithelial tissue
  - C) connective tissue
  - D) nervous tissue
  - E) skeletal tissue

Answer: A

Diff: 4 Page Ref: 5

- 6) What tissue type functions in the transport of specific molecules from one body compartment to another?
- A) muscle tissue
  - B) epithelial tissue
  - C) connective tissue
  - D) nervous tissue
  - E) reticular tissue

Answer: B

Diff: 4 Page Ref: 5

- 7) What tissue type lines internal hollow organs and external surfaces of the body, providing a barrier between the internal and external environment?
- A) epithelial tissue
  - B) muscle tissue
  - C) nervous tissue
  - D) connective tissue
  - E) reticular tissue

Answer: A

Diff: 4 Page Ref: 5

- 8) Glands are derived from what type of tissue?
- A) muscle
  - B) connective
  - C) epithelial
  - D) nerve
  - E) kleenex

Answer: C

Diff: 3 Page Ref: 5

- 9) What type of tissue lines exocrine glands?
- A) connective
  - B) epithelial
  - C) exonuclear
  - D) nerve
  - E) muscle

Answer: B

Diff: 4 Page Ref: 5

10) Endocrine glands are derived from what type of tissue?

- A) muscle
- B) nerve
- C) epithelial
- D) connective
- E) reticular

Answer: C

Diff: 3 Page Ref: 5

11) What type of gland secretes products into ducts leading to the external environment?

- A) endocrine glands
- B) exocrine glands
- C) both endocrine and exocrine
- D) neither endocrine nor exocrine

Answer: B

Diff: 4 Page Ref: 5

12) Which tissue type includes cells contained in an extracellular matrix composed of collagen and elastin?

- A) muscle tissue
- B) epithelial tissue
- C) connective tissue
- D) nervous tissue
- E) endocrine tissue

Answer: C

Diff: 3 Page Ref: 5

13) Which of the following descriptions INCORRECTLY describes the tissue type?

- A) Muscle tissue is specialized for contraction and generation of force.
- B) Epithelial tissue forms glands.
- C) Nervous tissue is specialized for transmission of electrical impulses.
- D) Connective tissue is specialized for exchange between the internal and external environments.
- E) Epithelial tissue lines the lumen of internal organs.

Answer: D

Diff: 4 Page Ref: 5

14) What is a general name for the non-cellular material that holds the widely scattered cells of connective tissue together?

- A) Basement membrane
- B) Collagen
- C) Intracellular matrix
- D) Extracellular matrix
- E) Elastin

Answer: D

Diff: 4 Page Ref: 5

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- 15) Which of the following is a protein found in the body that provides the tensile strength to resist stretching?
- A) Collagen
  - B) Elastin
  - C) Erythropoietin
  - D) Basement membrane
  - E) Vimentin

Answer: A

Diff: 4 Page Ref: 5

- 16) Which of the following is a tissue type that includes the cells found within blood and bones?
- A) muscle tissue
  - B) epithelial tissue
  - C) connective tissue
  - D) nervous tissue
  - E) endocrine tissue

Answer: C

Diff: 4 Page Ref: 5

- 17) What are the structures that attach bone to muscle called?
- A) ligaments
  - B) aponeuroses
  - C) extracellular matrix proteins
  - D) tendons
  - E) intracellular matrix proteins

Answer: D

Diff: 4 Page Ref: 5

- 18) Organs of the body are defined as \_\_\_\_\_.
- A) a collection of cells that perform similar functions
  - B) two or more tissues combined to form a structure that allows each tissue to function independently
  - C) a collection of cells that function independently of one another
  - D) a combination of two or more tissues that makes a structure which performs specific functions
  - E) a collection of tissues that function independently of one another

Answer: D

Diff: 3 Page Ref: 5

- 19) Which of the following accurately represents the order of complexity for the components of the body, from least to most complex?
- A) organ systems, cells, tissues, organs
  - B) tissues, cells, organs, organ systems
  - C) cells, tissues, organs, organ systems
  - D) cells, tissues, organ systems, organs
  - E) organ systems, organs, tissues, cells

Answer: C

Diff: 2 Page Ref: 5

- 20) Which of the following organ systems is primarily involved in the process of digestion?
- A) immune system
  - B) endocrine system
  - C) gastrointestinal system
  - D) cardiovascular system
  - E) integumentary system

Answer: C

Diff: 2 Page Ref: 5

- 21) Which of the following is NOT a component of the gastrointestinal system?
- A) salivary glands
  - B) stomach
  - C) gall bladder
  - D) liver
  - E) kidneys

Answer: E

Diff: 4 Page Ref: 5

- 22) Name the two organ systems that the kidneys belong to.
- A) urinary and digestive systems
  - B) urinary and immune systems
  - C) endocrine and urinary systems
  - D) urinary and skeletal systems
  - E) endocrine and gastrointestinal systems

Answer: C

Diff: 5 Page Ref: 6

- 23) The uptake of nutrients across the epithelial cells of the gastrointestinal tract and into the bloodstream is called \_\_\_\_\_.
- A) filtration
  - B) excretion
  - C) secretion
  - D) absorption
  - E) reabsorption

Answer: D

Diff: 4 Page Ref: 7

- 24) What organ system includes the pituitary gland, adrenal gland, and thyroid gland?
- A) nervous
  - B) endocrine
  - C) cardiovascular
  - D) integumentary
  - E) immune

Answer: B

Diff: 3 Page Ref: 6

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- 25) What organ system protects the body against pathogens and abnormal cells?
- A) nervous
  - B) endocrine
  - C) respiratory
  - D) integumentary
  - E) immune

Answer: E

Diff: 3 Page Ref: 6

- 26) What organ system functions in communication between cells of the body?
- A) nervous only
  - B) integumentary only
  - C) endocrine only
  - D) both nervous and endocrine
  - E) nervous, integumentary, and endocrine

Answer: D

Diff: 4 Page Ref: 6

- 27) What type of tissue separates the internal from the external environment?
- A) connective
  - B) epithelial
  - C) plasma membrane
  - D) nerve
  - E) reticular

Answer: B

Diff: 3 Page Ref: 4

- 28) The lumen of which of the following systems is part of the INTERNAL environment?
- A) gastrointestinal system
  - B) respiratory system
  - C) cardiovascular system
  - D) urinary system
  - E) gastrointestinal and urinary systems

Answer: C

Diff: 4 Page Ref: 6

- 29) What separates the internal environment of the body from the external environment?
- A) water
  - B) walls of blood vessels
  - C) membranes of blood cells
  - D) plasma membrane of all body cells
  - E) epithelium

Answer: E

Diff: 4 Page Ref: 6

30) Which of the following is NOT a part of the internal environment?

- A) blood
- B) brain
- C) heart
- D) airways to lungs
- E) endocrine glands

Answer: D

Diff: 4 Page Ref: 7

31) The process whereby fluid from the bloodstream enters the tubules of the kidneys is called \_\_\_\_\_.

- A) filtration
- B) excretion
- C) secretion
- D) absorption
- E) reabsorption

Answer: A

Diff: 5 Page Ref: 8

32) The process whereby fluid in the kidneys is transported from the tubules back into the bloodstream is called \_\_\_\_\_.

- A) filtration
- B) excretion
- C) secretion
- D) absorption
- E) reabsorption

Answer: E

Diff: 5 Page Ref: 8

33) Referring to a membrane as "selectively permeable" describes its ability to \_\_\_\_\_.

- A) restrict the movement of particular molecules across a membrane
- B) restrict only the movement of sodium across a membrane
- C) provide a barrier that restricts the movement of all molecules across a membrane
- D) provide a minimal barrier that allows almost any molecule to move across a membrane
- E) restrict only the movement of potassium across the membrane

Answer: A

Diff: 6 Page Ref: 8

34) Extracellular fluid is composed of \_\_\_\_\_.

- A) interstitial fluid and plasma
- B) plasma and intracellular fluid
- C) interstitial fluid only
- D) plasma only
- E) intracellular fluid only

Answer: A

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- 35) Total body water is composed of \_\_\_\_\_.
- A) intracellular fluid only
  - B) extracellular fluid only
  - C) intracellular and interstitial fluid
  - D) intracellular and extracellular fluid
  - E) plasma and intracellular fluid

Answer: D

Diff: 4 Page Ref: 9

- 36) Where is most of our total body water?
- A) in the lumen of the kidneys
  - B) in the lumen of the gastrointestinal tract
  - C) in blood
  - D) inside cells
  - E) surrounding the cells

Answer: D

Diff: 3 Page Ref: 9

- 37) Which of the following compartments contains most of the water found in the human body?
- A) intracellular fluid
  - B) plasma
  - C) interstitial fluid
  - D) extracellular fluid
  - E) lumen of the intestinal tract

Answer: A

Diff: 3 Page Ref: 9

- 38) What are the two extracellular fluid compartments of the body?
- A) intracellular fluid and interstitial fluid
  - B) intracellular fluid and plasma
  - C) intracellular fluid and blood
  - D) interstitial fluid and plasma
  - E) interstitial fluid and blood

Answer: D

Diff: 3 Page Ref: 9

- 39) The portion of body water outside of cells that bathes most cells of the body is called \_\_\_\_\_.
- A) intracellular fluid
  - B) intercellular fluid
  - C) interstitial fluid
  - D) plasma
  - E) extracellular fluid

Answer: C

Diff: 3 Page Ref: 9

- 40) The fluid compartment with a high sodium and protein concentration is called \_\_\_\_\_.
- A) interstitial fluid
  - B) plasma
  - C) intracellular fluid
  - D) extracellular fluid
  - E) intracellular and extracellular fluids

Answer: B

Diff: 7 Page Ref: 9

- 41) Which of the following best describes intracellular fluid?
- A) rich in sodium, potassium, and chloride
  - B) rich in sodium and chloride
  - C) rich in proteins and chloride
  - D) rich in proteins and potassium
  - E) rich in potassium and chloride

Answer: D

Diff: 4 Page Ref: 9

- 42) The fluid compartment with a high sodium concentration that contains only trace amounts of protein is called \_\_\_\_\_.
- A) interstitial fluid
  - B) plasma
  - C) intracellular fluid
  - D) extracellular fluid
  - E) intracellular and extracellular fluids

Answer: A

Diff: 5 Page Ref: 9

- 43) Homeostasis is a term which describes the process whereby the body \_\_\_\_\_.
- A) affects the external environment
  - B) maintains a constant external environment
  - C) maintains a constant internal environment
  - D) maintains a variable internal environment
  - E) maintains a constant internal and external environment

Answer: C

Diff: 3 Page Ref: 9

- 44) Which of the following statements about homeostasis is FALSE?
- A) The extracellular fluid is maintained in a state compatible for life.
  - B) The primary mechanism to maintain homeostasis is negative feedback.
  - C) The organ systems work together to maintain homeostasis.
  - D) The intracellular fluid makes up the majority of the body fluids.
  - E) Intrinsic control mechanisms maintain the extracellular fluid in a constant state.

Answer: E

Diff: 4 Page Ref: 10

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- 45) The maintenance of a stable internal environment compatible for life is called what?
- A) physiology
  - B) anatomy
  - C) biochemistry
  - D) microbiology
  - E) homeostasis

Answer: E

Diff: 2 Page Ref: 9

- 46) What is the primary mechanism for maintaining homeostasis?
- A) positive feedback
  - B) negative feedback
  - C) intrinsic control
  - D) extrinsic control
  - E) inherent control

Answer: B

Diff: 3 Page Ref: 9

- 47) Which of the following statements about homeostasis is FALSE?
- A) The extracellular fluid is maintained in a state compatible for life.
  - B) The primary mechanism to maintain homeostasis is positive feedback.
  - C) The organ systems work together to maintain homeostasis.
  - D) Illness can result if homeostasis is disrupted.
  - E) Homeostasis is the maintenance of the internal environment.

Answer: B

Diff: 4 Page Ref: 9

- 48) Changes in the external environment alter the \_\_\_\_\_, which is detected by the \_\_\_\_\_, and that information is sent to the integrator.
- A) set point : regulated variable
  - B) regulated variable : set point
  - C) error signal : regulated variable
  - D) sensor : regulated variable
  - E) regulated variable : sensor

Answer: E

Diff: 4 Page Ref: 10

- 49) The \_\_\_\_\_ determines the extent of the error signal in a feedback loop, in order to initiate the appropriate response.
- A) sensor
  - B) integrator
  - C) effector
  - D) set point
  - E) regulated variable

Answer: B

Diff: 6 Page Ref: 12