

## Multiple Choice

1. Which term is NOT a synonym for biological psychology?

- A) neuropsychology
- B) physiological psychology
- C) psychobiology
- D) neuroscience

Ans: D

APA 2.0: 1.1

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 1 Define neuroscience and explain its contributions to our understanding of behavior.

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Topic: Biology and Behavior: Studying the Last Frontier

WebQuiz: WebQuiz 1

2. Which statement concerning the study of the brain and the nervous system is MOST accurate?

- A) The terms "neuroscience" and "biological psychology" both refer to the study of the brain and the nervous system.
- B) The terms "neuroscience" and "biological psychology" both refer to the study of how the nervous system influences behavior.
- C) The term "neuroscience" refers to the study of the brain and the nervous system, whereas the term "biological psychology" refers to the study of how the nervous system influences behavior.
- D) The term "biological psychology" refers to the study of the brain and the nervous system, whereas the term "neuroscience" refers to the study of how the nervous system influences behavior.

Ans: C

APA 2.0: 1.1

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 1 Define neuroscience and explain its contributions to our understanding of behavior.

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Topic: Biology and Behavior: Studying the Last Frontier

3. Alison has developed an interest in how the brain controls the body's voluntary action. You suggest that she become a(n) \_\_\_\_\_ psychologist.

- A) genetic
- B) biological
- C) cognitive
- D) evolutionary

Ans: B

APA 2.0: 1.2; 5.1

APA Outcome: 1.2; 10.1

Bloom's Taxonomy: Applying

Difficulty: Challenging

Learning Objective: LO 1 Define neuroscience and explain its contributions to our understanding of behavior.

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Topic: Biology and Behavior: Studying the Last Frontier

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4. The building blocks of the nervous system are cells called:

- A) neurons.
- B) axons.
- C) synapses.
- D) dendrites.

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

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Topic: Just the Basics

5. The chemicals that relay signals across the synapses between neurons are called:

- A) action potentials.
- B) neurotransmitters.

- C) agonists.
- D) vesicles.

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.2

Learning Objective: LO 3 Illustrate how neurons communicate with each other.

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Topic: Communication Within and Between

6. The branch-like fibers extending in clusters from the neuron's cell body are called:

- A) axons.
- B) glial fibers.
- C) dendrites.
- D) nodes of Ranvier.

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Figure 2.1 The Neuron; Infographic 2.1

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

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Topic: Just the Basics

7. Compare your forearm, hand, and fingers to a neuron. In such an analogy, the dendrites are your:

- A) forearm.
- B) fingers.
- C) hand.
- D) wrist.

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.1 The Neuron; Infographic 2.1

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

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Topic: Just the Basics

8. An axon is a:

- A) neuron's cell body.
- B) support cell in the nervous system.
- C) branch-like fiber extending in clusters from a neuron's cell body.
- D) long, tube-like structure extending from a neuron's cell body.

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Figure 2.1 The Neuron; Infographic 2.1

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

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Topic: Just the Basics

9. Compare your forearm, hand, and fingers to a neuron. In such an analogy, the axon is your:

- A) wrist.
- B) fingers.
- C) hand.
- D) forearm.

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.1 The Neuron; Infographic 2.1

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

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Topic: Just the Basics

10. Dendrite is to axon as \_\_\_\_\_ is to \_\_\_\_\_.

- A) receiving; sending
- B) sending; receiving
- C) electrical; chemical
- D) action potential; reuptake

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.1 The Neuron; Infographic 2.1

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

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Topic: Just the Basics

11. Which sequence accurately reflects the route followed by nerve impulses when one neuron communicates with another?

- A) dendrite > axon > cell body
- B) dendrite > cell body > axon
- C) axon > cell body > dendrite
- D) axon > dendrite > cell body

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.1 The Neuron; Infographic 2.1

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

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Topic: Just the Basics

12. Electrical wires are generally protected by a tube of plastic. A similar insulating function is performed in the nervous system by:

- A) myelin.
- B) glial cells.
- C) terminal buds.
- D) dendrites.

Ans: A  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Applying  
Difficulty: Challenging  
Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.  
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Topic: Just the Basics

13. Terminal buds are found at the ends of:

- A) cell bodies.
- B) dendrites.
- C) axons.
- D) glial cells.

Ans: C  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Remembering  
Difficulty: Easy  
Feature: Figure 2.1 The Neuron; Infographic 2.1  
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14. Which sequence correctly arranges nervous system structures from the largest to the smallest?

- A) neuron > axon > terminal bud
- B) neuron > terminal bud > axon
- C) axon > terminal bud > neuron
- D) axon > neuron > terminal bud

Ans: A  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Understanding  
Difficulty: Medium  
Feature: Figure 2.1 The Neuron; Infographic 2.1  
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15. The breaks between segments of an axon's myelin sheath are called:
- A) terminal buds.
  - B) synapses.
  - C) dendritic clefts.
  - D) nodes of Ranvier.

Ans: D  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Remembering  
Difficulty: Easy  
Feature: Figure 2.1 The Neuron; Infographic 2.1  
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WebQuiz: WebQuiz 2

16. The nervous system contains not only neurons but also other cells called:
- A) axons.
  - B) glial cells.
  - C) dendrites.
  - D) myelin cells.

Ans: B  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Remembering  
Difficulty: Easy  
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17. As compared to neurons, there are:
- A) fewer glial cells.

- B) about as many glial cells.
- C) somewhat more glial cells.
- D) many more glial cells.

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

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Topic: Just the Basics

18. Which of the following is NOT one of the functions of glial cells?

- A) They defend the brain against infection.
- B) They conduct action potentials.
- C) They create the myelin that insulates axons.
- D) All of these are functions of glial cells.

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Challenging

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

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Topic: Just the Basics

19. Which type of glial cell is correctly matched with its function?

- A) microglia – create myelin sheaths
- B) astrocytes – protect the brain from infection
- C) Schwann cells – restore the blood-brain barrier
- D) None of these types of glial cells is correctly matched with its function.

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.



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Topic: Just the Basics

20. The difference in charges inside and outside a neuron determine how positive or negatively charged the neuron is overall. This is called the neuron's:

- A) polarity.
- B) resting potential.
- C) electrostatic pressure.
- D) threshold potential.

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Challenging

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Topic: Communication Within and Between

21. The electrical potential created by the difference in charge between the inside and outside of a neuron is called the neuron's \_\_\_\_\_ potential.

- A) action
- B) threshold
- C) resting
- D) electrostatic

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

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Topic: Communication Within and Between

22. A neuron's resting potential is:

- A) -70 mV.

- B) -55 mV.
- C) 0 mV.
- D) 30 mV.

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.1

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

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Topic: Communication Within and Between

23. An action potential is a sudden \_\_\_\_\_ change in the electrical charge of a neuron's \_\_\_\_\_.
- A) positive; axon
  - B) positive; dendrites
  - C) negative; axon
  - D) negative; dendrites

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.1

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

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Topic: Communication Within and Between

24. As an action potential occurs, the neuron's electrical charge changes from \_\_\_\_\_ to \_\_\_\_\_.
- A) negative; more negative
  - B) positive; more positive
  - C) negative; positive
  - D) positive; negative

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.1

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

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Topic: Communication Within and Between

25. Which electrical charge is correctly identified?

- A) -70 mV – action potential
- B) -55 mV – threshold potential
- C) 30 mV – resting potential
- D) All of these charges are correctly defined.

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.1

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

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Topic: Communication Within and Between

26. Which sequence correctly reflects the order in which electrical charges occur during an action potential, from first to last?

- A) threshold potential > resting potential > action potential
- B) resting potential > action potential > threshold potential
- C) action potential > threshold potential > resting potential
- D) resting potential > threshold potential > action potential

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Infographic 2.1

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

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Topic: Communication Within and Between

27. An action potential involves the transfer of \_\_\_\_\_ and \_\_\_\_\_ ions across an axon's membrane.

- A) calcium; potassium
- B) sodium; potassium
- C) sodium; calcium
- D) calcium; chloride

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

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Topic: Communication Within and Between

28. An action potential takes about \_\_\_\_\_ to complete.

- A) 0.1 ms
- B) 1 ms
- C) 0.01 s
- D) 1 s

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

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Topic: Communication Within and Between

WebQuiz: WebQuiz 2

29. You cannot fire a gun softly or flush a toilet halfway. Like an action potential, gunfire and a toilet's flush follow the \_\_\_\_\_ law.

- A) on-or-off
- B) all-or-none
- C) this-or-that
- D) is-or-isn't

Ans: B  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Applying  
Difficulty: Challenging  
Feature: Infographic 2.1  
Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.  
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30. The speed of an action potential in unmyelinated neurons is approximately \_\_\_\_\_ mph. The speed of an action potential in myelinated neurons is approximately \_\_\_\_\_ mph.
- A) 1 to 4.5; 1 to 4.5
  - B) 1 to 4.5; 150 to 275
  - C) 150 to 275; 1 to 4.5
  - D) 150 to 275; 150 to 275

Ans: B  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Remembering  
Difficulty: Easy  
Feature: Infographic 2.1  
Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.  
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31. Which disorder reflects damaged myelination?
- A) muscular dystrophy
  - B) schizophrenia
  - C) Parkinson's disease
  - D) multiple sclerosis

Ans: D  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Remembering  
Difficulty: Easy  
Feature: Infographic 2.1

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

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Topic: Communication Within and Between

32. Receptor sites are found on:

A) myelin sheaths.

B) axons.

C) vesicles.

D) dendrites.

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.2

Learning Objective: LO 3 Illustrate how neurons communicate with each other.

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Topic: Communication Within and Between

33. A synapse is a:

A) chemical.

B) signal.

C) joint.

D) gap.

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Infographic 2.2

Learning Objective: LO 3 Illustrate how neurons communicate with each other.

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Topic: Communication Within and Between

WebQuiz: WebQuiz 1

34. Which sequence correctly orders neuronal components from the largest and most inclusive to the smallest and most specific?

- A) axon > terminal bud > vesicle
- B) axon > vesicle > terminal bud
- C) vesicle > axon > terminal bud
- D) vesicle > terminal bud > axon

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Infographic 2.2

Learning Objective: LO 3 Illustrate how neurons communicate with each other.

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Topic: Communication Within and Between

35. Cocaine causes the neurotransmitter dopamine to remain at the site of the synapse longer than it normally would. Cocaine thus inhibits the process called:

- A) recycling.
- B) reuse.
- C) reuptake.
- D) reabsorption.

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Feature: Infographic 2.2

Learning Objective: LO 3 Illustrate how neurons communicate with each other.

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Topic: Communication Within and Between

36. Within neurons is to between neurons as \_\_\_\_\_ is to \_\_\_\_\_.

- A) chemical; electrical
- B) electrical; mechanical
- C) electrical; chemical
- D) mechanical; chemical

Ans: C  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Understanding  
Difficulty: Medium  
Feature: Infographic 2.2  
Learning Objective: LO 3 Illustrate how neurons communicate with each other.  
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Topic: Communication Within and Between

37. Methamphetamine increases the release of dopamine from an axon's terminal button. Curare blocks the release of acetylcholine. Methamphetamine is a dopamine \_\_\_\_\_; curare is an acetylcholine \_\_\_\_\_.  
A) antagonist; agonist  
B) exciter; inhibitor  
C) agonist; antagonist  
D) inhibitor; exciter

Ans: C  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Applying  
Difficulty: Challenging  
Feature: Infographic 2.2  
Learning Objective: LO 3 Illustrate how neurons communicate with each other.  
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Topic: Communication Within and Between  
WebQuiz: WebQuiz 2

38. Researchers have identified approximately \_\_\_\_\_ neurotransmitters.  
A) 20  
B) 50  
C) 100  
D) 200

Ans: C  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Remembering  
Difficulty: Easy



Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

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Topic: Major League Players: Neurotransmitters

39. An advertisement for a new drug therapy catches your eye. The advertisement claims that the drug will counteract the symptoms of Alzheimer's disease. How does the drug probably work?

- A) The drug probably acts as an acetylcholine agonist.
- B) The drug probably acts as an acetylcholine antagonist.
- C) The drug probably acts as a serotonin agonist.
- D) The drug probably acts as a serotonin antagonist.

Ans: A

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Feature: Infographic 2.2

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

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Topic: Major League Players: Neurotransmitters

40. The neurotransmitter GABA opposes the action of the neurotransmitter:

- A) glutamate.
- B) acetylcholine.
- C) serotonin.
- D) dopamine.

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

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Topic: Major League Players: Neurotransmitters

41. GABA is to glutamate as \_\_\_\_\_ is to \_\_\_\_\_.

- A) inhibitory; excitatory
- B) excitatory; inhibitory
- C) agonist; antagonist
- D) antagonist; agonist

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

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Topic: Major League Players: Neurotransmitters

42. Carmen is driving at night in an unfamiliar city. The neighborhood looks dangerous; Carmen feels lost and on edge. The neurotransmitter \_\_\_\_\_ is helping her cope with the stressful situation.

- A) serotonin
- B) dopamine
- C) GABA
- D) norepinephrine

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2; 4.4

Bloom's Taxonomy: Applying

Difficulty: Challenging

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

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Topic: Major League Players: Neurotransmitters

43. According to your text, Prozac and Zoloft boost the effects of serotonin. In other words, Prozac and Zoloft are serotonin:

- A) agonists.

- B) antagonists.
- C) inhibitors.
- D) stimulators.

Ans: A

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Infographic 2.2

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

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Topic: Major League Players: Neurotransmitters

WebQuiz: WebQuiz 2

44. Parkinson's disease is to dopamine as \_\_\_\_\_ is to \_\_\_\_\_.

- A) Alzheimer's disease; serotonin
- B) depression; acetylcholine
- C) depression; serotonin
- D) Alzheimer's disease; norpinephrine

Ans: C

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

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Topic: Major League Players: Neurotransmitters

45. The neurotransmitter dopamine is involved in:

- A) learning.
- B) attention.
- C) movement.
- D) Dopamine is involved in all of these.

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

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Topic: Major League Players: Neurotransmitters

WebQuiz: WebQuiz 1

46. The neurotransmitter MOST closely associated with drug abuse is:

- A) dopamine.
- B) glutamate.
- C) norepinephrine.
- D) acetylcholine.

Ans: A

APA 2.0: 1.2; 5.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

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Topic: Major League Players: Neurotransmitters

47. Popular actor Michael J. Fox lives with Parkinson's disease. His symptoms include shaking and trembling, signs of a deficiency of the neurotransmitter:

- A) GABA.
- B) norepinephrine.
- C) dopamine.
- D) serotonin.

Ans: C

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

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Topic: Major League Players: Neurotransmitters

48. Which neurotransmitter is incorrectly described?

- A) acetylcholine – enables movement
- B) GABA – prepares the body for stress
- C) serotonin – helps regulate sleep and mood
- D) dopamine – plays a role in drug use

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

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Topic: Major League Players: Neurotransmitters

49. Which neurotransmitter is correctly matched with a psychological function?

- A) glutamate – relief of pain
- B) serotonin – contributes to memory
- C) dopamine – facilitates learning
- D) acetylcholine – produces feelings of pleasure

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

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Topic: Major League Players: Neurotransmitters

50. Which disorder is correctly paired with an associated neurotransmitter?

- A) Parkinson's disease – dopamine
- B) depression – glutamate

- C) schizophrenia – serotonin
- D) Alzheimer’s disease – endorphins

Ans: A

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

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Topic: Major League Players: Neurotransmitters

51. \_\_\_\_\_ function(s) as the brain's natural painkiller.

- A) Acetylcholine
- B) Dopamine
- C) Endorphins
- D) GABA

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

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Topic: Major League Players: Neurotransmitters

WebQuiz: WebQuiz 2

52. "Runner's high" occurs when prolonged, intense athletic activity causes the release of \_\_\_\_\_, the brain's natural painkiller.

- A) endorphins
- B) glutamate
- C) norepinephrine
- D) adenosine

Ans: A

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.4

Bloom's Taxonomy: Applying

Difficulty: Challenging

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

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Topic: Major League Players: Neurotransmitters

53. Mr. Lopez is prescribed oxycodone to manage chronic lower back pain. Oxycodone is called an opioid because its action resembles that of \_\_\_\_\_, the brain's natural painkillers.

A) acetylcholine

B) dopamine

C) adenosine

D) endorphins

Ans: D

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

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Topic: Major League Players: Neurotransmitters

WebQuiz: WebQuiz 1

54. With respect to acetylcholine, Botox is to nicotine as \_\_\_\_\_ is to \_\_\_\_\_.

A) stimulator; inhibitor

B) inhibitor; stimulator

C) agonist; antagonist

D) antagonist; agonist

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2; 4.4

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Infographic 2.2

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Topic: Major League Players: Neurotransmitters

55. Your textbook states that caffeine blocks adenosine receptors. Therefore, with respect to adenosine, caffeine is a(n):

- A) agonist.
- B) antagonist.
- C) inhibitor.
- D) stimulator.

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

Page: 60

Topic: Major League Players: Neurotransmitters

56. According to your text, adenosine slows down neuronal activity. In other words, adenosine is a(n) \_\_\_\_\_ neurotransmitter.

- A) excitatory
- B) inhibitory
- C) agonistic
- D) antagonistic

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Infographic 2.2

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

Page: 60

Topic: Major League Players: Neurotransmitters



57. According to your text, caffeine increases activity not only in the brain, but also in the branch of the nervous system serving the body. This branch is called the \_\_\_\_\_ nervous system.

- A) central
- B) peripheral
- C) primary
- D) secondary

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.2 Overview of the Nervous System

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

Page: 60-61

Topic: Major League Players: Neurotransmitters; The Supporting Systems

58. Which term BEST describes the organization of the nervous system?

- A) linear
- B) hierarchical
- C) random
- D) disconnected

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.2 Overview of the Nervous System

Learning Objective: LO 5 Recognize the connections between the central and peripheral nervous systems.

Page: 61

Topic: The Supporting Systems

59. At the broadest level, the nervous system is divided into the \_\_\_\_\_ and the \_\_\_\_\_ nervous systems.

- A) primary; secondary
- B) somatic; autonomic
- C) sympathetic; parasympathetic

D) central; peripheral

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.2 Overview of the Nervous System

Learning Objective: LO 5 Recognize the connections between the central and peripheral nervous systems.

Page: 61

Topic: The Supporting Systems

60. The brain and the spinal cord constitute the \_\_\_\_\_ nervous system.

A) central

B) peripheral

C) somatic

D) primary

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Figure 2.2 Overview of the Nervous System

Learning Objective: LO 5 Recognize the connections between the central and peripheral nervous systems.

Page: 61

Topic: The Supporting Systems

61. The central nervous system consists of the \_\_\_\_\_. The peripheral nervous system comprises the \_\_\_\_\_.

A) somatic and autonomic nervous systems; sympathetic and parasympathetic nervous systems

B) somatic and autonomic nervous systems; brain and the spinal cord

C) sympathetic and parasympathetic nervous systems; somatic and autonomic nervous systems

D) brain and the spinal cord; somatic and autonomic nervous systems

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering  
Difficulty: Easy  
Feature: Figure 2.2 Overview of the Nervous System  
Learning Objective: LO 5 Recognize the connections between the central and peripheral nervous systems.  
Page: 61  
Topic: The Supporting Systems

62. The two major divisions of the peripheral nervous system are the \_\_\_\_\_ and \_\_\_\_\_ divisions.

- A) somatic; autonomic
- B) sympathetic; parasympathetic
- C) sensory; motor
- D) skeletal; muscular

Ans: A  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Remembering  
Difficulty: Easy  
Feature: Figure 2.2 Overview of the Nervous System  
Learning Objective: LO 5 Recognize the connections between the central and peripheral nervous systems.  
Page: 61  
Topic: The Supporting Systems

63. Which choice correctly orders branches of the nervous system from the broadest to the most specific?

- A) peripheral > sympathetic > autonomic
- B) peripheral > autonomic > sympathetic
- C) sympathetic > peripheral > autonomic
- D) autonomic > peripheral > sympathetic

Ans: B  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Understanding  
Difficulty: Medium  
Feature: Figure 2.2 Overview of the Nervous System  
Learning Objective: LO 6 Describe the organization and function of the peripheral nervous

system.

Page: 63-64

Topic: What Lies Beyond: The Peripheral Nervous System

64. Imagine a large city in which a downtown business district is linked to outlying suburbs by a system of subway trains. The spinal cord's sensory neurons are analogous to the system's \_\_\_\_\_ trains; the spinal cord's motor neurons are analogous to the \_\_\_\_\_ trains.

- A) local; express
- B) express; local
- C) inbound; outbound
- D) outbound; inbound

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.3 The Spinal Cord and Reflex Arc

Learning Objective: LO 5 Recognize the connections between the central and peripheral nervous systems.

Page: 62

Topic: The Spinal Cord and Simple Reflexes

65. Regarding the spinal cord's control of behavior, which statement is true?

- A) The spinal cord cannot control any behaviors without the help of the brain.
- B) The spinal cord is not involved in reflexes.
- C) The spinal cord and the brain rarely interact in the control of behavior.
- D) The spinal cord can control some simple reflexes without the brain's help.

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.3 The Spinal Cord and Reflex Arc

Learning Objective: LO 5 Recognize the connections between the central and peripheral nervous systems.

Page: 62

Topic: The Spinal Cord and Simple Reflexes

WebQuiz: WebQuiz 2

66. Automatic, involuntary responses to stimuli are called:

- A) conditioned responses.
- B) reflexes.
- C) action potentials.
- D) instincts.

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 5 Recognize the connections between the central and peripheral nervous systems.

Page: 62-63

Topic: The Spinal Cord and Simple Reflexes

67. Within the reflex circuit, it is the \_\_\_\_\_ that allows the spinal cord to control certain reflexes without the brain's help.

- A) motor neuron
- B) sensory neuron
- C) integrator
- D) interneuron

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.3 The Spinal Cord and Reflex Arc

Learning Objective: LO 5 Recognize the connections between the central and peripheral nervous systems.

Page: 62-63

Topic: The Spinal Cord and Simple Reflexes

68. Sensory is to motor as \_\_\_\_\_ is to \_\_\_\_\_.

- A) efferent; afferent

- B) afferent; efferent
- C) afferent; interneuron
- D) interneuron; efferent

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 5 Recognize the connections between the central and peripheral nervous systems.

Page: 63

Topic: The Spinal Cord and Simple Reflexes

69. Bundles of neurons carrying information to and from the central nervous system are called:

- A) nerves.
- B) glia.
- C) ganglia.
- D) nuclei.

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.

Page: 63

Topic: What Lies Beyond: The Peripheral Nervous System

WebQuiz: WebQuiz 1

70. Sensory and motor nerves make up the \_\_\_\_\_ nervous system.

- A) autonomic
- B) parasympathetic
- C) somatic
- D) sympathetic

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.

Page: 63

Topic: What Lies Beyond: The Peripheral Nervous System

71. Somatic is to autonomic as \_\_\_\_\_ is to \_\_\_\_\_.

A) excitation; rest

B) involuntary; voluntary

C) rest; excitation

D) voluntary; involuntary

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.

Page: 63-64

Topic: What Lies Beyond: The Peripheral Nervous System

72. The reflex arc is a component of the \_\_\_\_\_ nervous system.

A) somatic

B) autonomic

C) parasympathetic

D) sympathetic

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.

Page: 63

Topic: What Lies Beyond: The Peripheral Nervous System

73. The somatic nervous system regulates external behavior; in contrast, the \_\_\_\_\_ nervous system underlies internal behavior.

- A) autonomic
- B) central
- C) endogenous
- D) secondary

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.

Page: 64

Topic: What Lies Beyond: The Peripheral Nervous System

WebQuiz: WebQuiz 2

74. Excitation is to rest as \_\_\_\_\_ is to \_\_\_\_\_.

- A) autonomic; somatic
- B) somatic; autonomic
- C) parasympathetic; sympathetic
- D) sympathetic; parasympathetic

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.4 The Sympathetic and Parasympathetic Nervous Systems

Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.

Page: 64

Topic: What Lies Beyond: The Peripheral Nervous System

75. Izzy's pupils are dilated and her heart is pounding; her breathing is shallow and rapid. Her \_\_\_\_\_ nervous system is active.

- A) somatic



- B) parasympathetic
- C) sympathetic
- D) secondary

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Feature: Figure 2.4 The Sympathetic and Parasympathetic Nervous Systems

Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.

Page: 64

Topic: What Lies Beyond: The Peripheral Nervous System

76. Which situation is MOST likely to involve the action of the parasympathetic nervous system?

- A) Brooke's finger accidentally grazes the hot iron; she immediately jerks her hand away.
- B) After a satisfying evening meal, Callum relaxes in front of the television.
- C) Walking toward her car in a deserted parking garage one night, Danica is surprised by a strange man who seems to appear from nowhere.
- D) None of these situations reflects the action of the parasympathetic nervous system.

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Feature: Figure 2.4 The Sympathetic and Parasympathetic Nervous Systems

Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.

Page: 64

Topic: What Lies Beyond: The Peripheral Nervous System

77. Arden's heart rate and respiration are slowing, and her digestion is facilitated. Her \_\_\_\_\_ nervous system has become active.

- A) sympathetic
- B) somatic
- C) parasympathetic
- D) secondary

Ans: C  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Understanding  
Difficulty: Medium  
Feature: Figure 2.4 The Sympathetic and Parasympathetic Nervous Systems  
Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.  
Page: 64-65  
Topic: What Lies Beyond: The Peripheral Nervous System

78. Which is NOT an effect of sympathetic nervous system activation?  
A) increased heart rate  
B) pupil constriction  
C) inhibited digestion  
D) increased respiration

Ans: B  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Remembering  
Difficulty: Easy  
Feature: Figure 2.4 The Sympathetic and Parasympathetic Nervous Systems  
Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.  
Page: 64  
Topic: What Lies Beyond: The Peripheral Nervous System

79. Public speaking frightens Pavel. Unfortunately, he is scheduled to give a presentation when his class begins in 5 minutes. Pavel's \_\_\_\_\_ nervous system is probably kicking into high gear.  
A) somatic  
B) parasympathetic  
C) reflexive  
D) sympathetic

Ans: D  
APA 2.0: 1.2; 1.3  
APA Outcome: 1.2; 4.4  
Bloom's Taxonomy: Applying

Difficulty: Challenging

Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.

Page: 64

Topic: What Lies Beyond: The Peripheral Nervous System

80. The parasympathetic nervous system:

- A) activates digestion.
- B) dilates the pupils.
- C) increases respiration.
- D) increases blood flow to the muscles.

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Figure 2.4 The Sympathetic and Parasympathetic Nervous Systems

Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.

Page: 64

Topic: What Lies Beyond: The Peripheral Nervous System

81. Twenty minutes before an introductory calculus final, anxious students gather in the hall outside the examination room. To calm their nerves and gain reassurance, some students engage in small talk with those next to them. This behavior exemplifies the \_\_\_\_\_ response to stress.

- A) fight-or-flight
- B) go-no go
- C) lock-and-load
- D) tend-and-befriend

Ans: D

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.4

Bloom's Taxonomy: Applying

Difficulty: Challenging

Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.

Page: 65

Topic: What Lies Beyond: The Peripheral Nervous System

82. Women earn nearly \_\_\_\_% of the bachelors' degrees in the United States. In science, technology, engineering, and mathematics, women earn nearly \_\_\_\_% of the bachelors' degrees.

- A) 40; 40
- B) 40; 60
- C) 60; 40
- D) 60; 60

Ans: C

APA 2.0: 1.3

APA Outcome: 10.3; 5.5; 8.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Figure 2.5 Bachelors' Degrees Awarded in the United States; Think Again

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 66

Topic: The Lobes: Up Close and Personal

83. Neurotransmitter is to hormone as \_\_\_\_\_ is to \_\_\_\_\_.

- A) gland; neuron
- B) endocrine system; nervous system
- C) body; brain
- D) fast; slow

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 7 Evaluate the role of the endocrine system and how it influences behavior.

Page: 66

Topic: The Endocrine System and its Slow-Poke Messengers

84. Which neurotransmitter is also a hormone?

- A) norepinephrine

- B) dopamine
- C) glutamate
- D) serotonin

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 7 Evaluate the role of the endocrine system and how it influences behavior.

Page: 66

Topic: The Endocrine System and its Slow-Poke Messengers

WebQuiz: WebQuiz 1

85. The tiny \_\_\_\_\_ gland may be considered the endocrine system's "master gland."

- A) pituitary
- B) thyroid
- C) pineal
- D) adrenal

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 7 Evaluate the role of the endocrine system and how it influences behavior.

Page: 66-67

Topic: The Endocrine System and its Slow-Poke Messengers

86. Because it controls the pituitary gland, the brain's \_\_\_\_\_ ultimately controls the endocrine system.

- A) hypothalamus
- B) hippocampus
- C) amygdala
- D) thalamus

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 7 Evaluate the role of the endocrine system and how it influences behavior.

Page: 66-67

Topic: The Endocrine System and its Slow-Poke Messengers

87. Erin is under stress: She has only a few minutes to make a connection at a large, busy airport—and the gate is in another terminal! Erin's \_\_\_\_\_ gland is probably releasing hormones.

- A) pineal
- B) adrenal
- C) thyroid
- D) pancreatic

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Applying

Difficulty: Medium

Learning Objective: LO 7 Evaluate the role of the endocrine system and how it influences behavior.

Page: 67

Topic: The Endocrine System and its Slow-Poke Messengers

88. Megan's pineal gland is releasing a high level of melatonin. Megan is MOST likely:

- A) anxious.
- B) hungry.
- C) sleepy.
- D) in love.

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 7 Evaluate the role of the endocrine system and how it influences behavior.

Page: 67

Topic: The Endocrine System and its Slow-Poke Messengers

## WebQuiz: WebQuiz 1

89. Lamar takes a melatonin tablet to help him sleep. The tablet's active ingredient is released naturally by the:

- A) pancreas.
- B) pineal gland.
- C) thyroid gland.
- D) pituitary gland.

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Applying

Difficulty: Medium

Learning Objective: LO 7 Evaluate the role of the endocrine system and how it influences behavior.

Page: 67

Topic: The Endocrine System and its Slow-Poke Messengers

90. Which hormone is correctly matched with its corresponding endocrine gland?

- A) melatonin – adrenal gland
- B) insulin – pancreas
- C) thyroxin – pituitary gland
- D) melatonin – ovaries

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Learning Objective: LO 7 Evaluate the role of the endocrine system and how it influences behavior.

Page: 67

Topic: The Endocrine System and its Slow-Poke Messengers

91. Which endocrine gland is matched with the correct function?

- A) pancreas – regulates metabolism

- B) pineal gland – regulates blood sugar
- C) thyroid gland – controls sleep-wake cycles
- D) adrenal gland – regulates salt balance

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 7 Evaluate the role of the endocrine system and how it influences behavior.

Page: 67

Topic: The Endocrine System and its Slow-Poke Messengers

92. Estrogen is a female sex hormone. Based on the textbook's discussion of the endocrine system, which gland MOST likely releases estrogen?

- A) pancreas
- B) thyroid gland
- C) ovaries
- D) pineal gland

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 7 Evaluate the role of the endocrine system and how it influences behavior.

Page: 67

Topic: The Endocrine System and its Slow-Poke Messengers

93. The cerebrum:

- A) is one part of the brain.
- B) contains some of the brain's structures.
- C) contains most of the brain's structures.
- D) is the same thing as the brain.

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2



Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 8 Describe the functions of the two brain hemispheres and how they communicate.

Page: 68-69

Topic: Right Brain, Left Brain: The Two Hemispheres

94. Regarding the brain's hemispheres, which statement is true?

- A) The functions of the two hemispheres are identical.
- B) The left hemisphere controls the left side of the body.
- C) The brain's hemispheres are perfectly symmetrical.
- D) The right hemisphere controls the left side of the body.

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 8 Describe the functions of the two brain hemispheres and how they communicate.

Page: 69

Topic: Right Brain, Left Brain: The Two Hemispheres

95. Just over \_\_\_\_\_ children had hemispherectomies at Johns Hopkins between 1975 and 2001.

- A) 50
- B) 100
- C) 200
- D) 500

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.

Page: 69

Topic: Split Brain

WebQuiz: WebQuiz 2

96. Of the children who had hemispherectomies at Johns Hopkins between 1975 and 2001, \_\_\_\_\_% no longer experienced seizures after the operation, whereas \_\_\_\_\_% continued to have troubling seizures.

- A) 65; 15
- B) 65; 25
- C) 75; 15
- D) 75; 25

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.

Page: 69

Topic: Split Brain

97. Split-brain operations are used to treat drug-resistant:

- A) depression.
- B) epilepsy.
- C) schizophrenia.
- D) anxiety.

Ans: B

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.

Page: 69

Topic: Split Brain

98. In a split-brain operation:

- A) the cerebellum is severed from the brainstem.
- B) the limbic system is separated from higher cortical areas.
- C) the frontal lobe is severed from the parietal lobe.
- D) the right hemisphere is severed from the left hemisphere.

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Figure 2.7 The Split-Brain Experiment

Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.

Page: 69

Topic: Split Brain

99. The left and right hemispheres of the brain are connected by a bundle of fibers called the:

A) corpus callosum.

B) cerebellum.

C) central sulcus.

D) information superhighway.

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.

Page: 69

Topic: Split Brain

100. Pioneering split-brain studies were conducted by:

A) Penfield.

B) Wernicke.

C) Gage.

D) Sperry.

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.

Page: 70

Topic: Split Brain

WebQuiz: WebQuiz 1

101. Roger Sperry's Nobel Prize-winning split-brain investigations:

- A) offered mainly correlational data.
- B) offered a way for psychologists to study the operation of each hemisphere.
- C) suggested a potential treatment for depression.
- D) exemplify the use of naturalistic observation.

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.7 The Split-Brain Experiment

Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.

Page: 70

Topic: Split Brain

102. After the split-brain procedure, Sperry and Gazzaniga's patients:

- A) were less expressive emotionally.
- B) demonstrated personality changes.
- C) experienced fewer seizures.
- D) showed moderate cognitive deficits.

Ans: C

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.

Page: 71

Topic: Split Brain

103. In a typical split-brain experiment, whether an image is flashed in the right or the left visual field is a(n) \_\_\_\_\_ variable.

- A) control
- B) dependent
- C) experimental

D) independent

Ans: D

APA 2.0: 2.4

APA Outcome: 2.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.7 The Split-Brain Experiment

Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.

Page: 70-71

Topic: Split Brain

104. An image of a dinner fork is flashed in a split-brain patient's left visual field. The patient will be:

- A) able to name the object.
- B) able to point to a fork with his or her left hand.
- C) able to point to a fork with his or her right hand.
- D) unable to either name or point to the object.

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Challenging

Feature: Figure 2.7 The Split-Brain Experiment

Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.

Page: 70-71

Topic: Split Brain

105. An image of a screwdriver is flashed in a split-brain patient's right visual field. The patient will be:

- A) able to name the object.
- B) able only to point to a screwdriver with his or her left hand.
- C) able only to point to a screwdriver with his or her right hand.
- D) unable to either name or point to the object.

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Challenging

Feature: Figure 2.7 The Split-Brain Experiment

Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.

Page: 70-71

Topic: Split Brain

106. Trevor is scratching his head, trying desperately to solve a visual analogy as part of an intelligence test; Sienna, meanwhile, is giving an oral presentation in a political science class. Of the brain's hemispheres, Trevor's \_\_\_\_\_ hemisphere is MOST active; Sienna's \_\_\_\_\_ hemisphere is MOST active.

- A) left; left
- B) left; right
- C) right; left
- D) right; right

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.

Page: 71

Topic: Split Brain

107. Which statement is MOST accurate with respect to the lateralization of language among right-handers?

- A) It is most likely left-lateralized.
- B) It is most likely right-lateralized.
- C) The control of language is shared equally between the hemispheres.
- D) No generalization can be made: the lateralization of language varies dramatically from one person to another.

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.

Page: 72

Topic: Language and the Left

108. In the 19th century, French surgeon Pierre Broca examined two patients who had lost the ability to speak. These examinations may be considered \_\_\_\_\_ studies.

- A) case
- B) correlational
- C) experimental
- D) observational

Ans: A

APA 2.0: 1.2; 2.4

APA Outcome: 1.2; 2.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 10 Identify areas in the brain responsible for language production and comprehension.

Page: 72

Topic: Language and the Left

109. A stroke damaged a portion of Broca's area in Joelle's brain. Joelle will probably experience deficits in:

- A) language comprehension.
- B) face recognition.
- C) language production.
- D) object recognition.

Ans: C

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 1.3

Bloom's Taxonomy: Applying

Difficulty: Medium

Learning Objective: LO 10 Identify areas in the brain responsible for language production and comprehension.

Page: 72

Topic: Language and the Left

110. Which individual provided early evidence for the left hemisphere's role in language processing?

- A) Gall
- B) Penfield
- C) Hitzig
- D) Wernicke

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 10 Identify areas in the brain responsible for language production and comprehension.

Page: 72

Topic: Language and the Left

111. Language production is to language comprehension as \_\_\_\_\_ is to \_\_\_\_\_.

- A) Broca; Hitzig
- B) Broca; Wernicke
- C) Hitzig; Wernicke
- D) Wernicke; Hitzig

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 10 Identify areas in the brain responsible for language production and comprehension.

Page: 72

Topic: Language and the Left

WebQuiz: WebQuiz 2

112. Broadly speaking, visual tasks are to linguistic tasks as \_\_\_\_\_ is to \_\_\_\_\_.

- A) the right hemisphere; the left hemisphere
- B) the left hemisphere; the right hemisphere
- C) Broca's area; Wernicke's area
- D) Wernicke's area; Broca's area

Ans: A

APA 2.0: 1.2



APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 10 Identify areas in the brain responsible for language production and comprehension.

Page: 72

Topic: The Role of the Right

113. Sam is recovering from a small stroke. He has difficulty following rapidly changing conversations, and he does not seem to understand puns or sarcasm. Additionally, he has trouble recognizing the faces of his friends and acquaintances. The stroke may have damaged:

A) Broca's area.

B) the left hemisphere.

C) Wernicke's area.

D) the right hemisphere.

Ans: D

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Learning Objective: LO 10 Identify areas in the brain responsible for language production and comprehension.

Page: 72

Topic: The Role of the Right

WebQuiz: WebQuiz 2

114. \_\_\_\_\_ plays a key role in understanding ironic or satirical language.

A) Broca's area

B) The left hemisphere

C) The right hemisphere

D) Wernicke's area

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Learning Objective: LO 10 Identify areas in the brain responsible for language production and comprehension.

Page: 72

Topic: The Role of the Right

115. Kate has suffered right-hemisphere damage. Which of the following processes is LEAST likely to be affected?

- A) understanding a pun
- B) determining whether a painting she is hanging is straight or crooked
- C) reciting a shopping list out loud
- D) recognizing a familiar look on her boyfriend's face

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Learning Objective: LO 10 Identify areas in the brain responsible for language production and comprehension.

Page: 72

Topic: The Role of the Right

116. Broca's area is to Wernicke's area as \_\_\_\_\_ is to \_\_\_\_\_.

- A) reading; speaking
- B) reading; writing
- C) language comprehension; language production
- D) language production; language comprehension

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.8 Language Areas of the Brain; Infographic 2.4

Learning Objective: LO 10 Identify areas in the brain responsible for language production and comprehension.; LO 14 Recognize the association areas and identify their functions.

Page: 72; 79-80

Topic: Language and the Left; The Cortex: A Peek Beneath the Skull

117. Violet's speech is slow and labored; however, she can understand the speech of others. Violet suffers from damage to the:

- A) frontal lobe.
- B) temporal lobe.
- C) occipital lobe.
- D) parietal lobe.

Ans: A

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Feature: Figure 2.8 Language Areas of the Brain; Infographic 2.4

Learning Objective: LO 10 Identify areas in the brain responsible for language production and comprehension.; LO 14 Recognize the association areas and identify their functions.

Page: 72; 79-80

Topic: Language and the Left; The Cortex: A Peek Beneath the Skull

118. Warren suffers from damage to Wernicke's area. Which impairment should he experience in thought or behavior?

- A) Warren should experience an inability to recognize faces.
- B) Warren should have difficulty recognizing objects visually.
- C) Warren should have trouble producing fluent speech.
- D) Warren should experience difficulty understanding language.

Ans: D

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Applying

Difficulty: Medium

Feature: Figure 2.8 Language Areas of the Brain; Infographic 2.4

Learning Objective: LO 10 Identify areas in the brain responsible for language production and comprehension.; LO 14 Recognize the association areas and identify their functions.

Page: 72; 79-80

Topic: Language and the Left; The Cortex: A Peek Beneath the Skull

119. The process by which the brain reorganizes itself throughout development is termed:

- A) neurogenesis.
- B) neuroplasticity.
- C) neuroadaptation.

D) neuromutability.

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Learning Objective: LO 11 Define neuroplasticity and recognize when it is evident in brains.

Page: 73-74

Topic: Neuroplasticity

120. The text states that brain scans reveal that when visually impaired people learn Braille early in life, brain areas specialized for vision become active, suggesting that they become involved in processing touch sensations. In studies supporting this conclusion, brain activity is a(n) \_\_\_\_\_ variable.

A) control

B) dependent

C) experimental

D) individual

Ans: B

APA 2.0: 1.2; 2.4

APA Outcome: 1.2; 2.4; 4.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 11 Define neuroplasticity and recognize when it is evident in brains.

Page: 74

Topic: Neuroplasticity

121. The text states that brain scans reveal that when visually impaired people learn Braille early in life, brain areas specialized for vision become active, suggesting that they become involved in processing touch sensations. Based on information in the text, these areas are probably in the \_\_\_\_\_ lobe.

A) frontal

B) temporal

C) parietal

D) occipital

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 11 Define neuroplasticity and recognize when it is evident in brains.;

LO 13 Identify the lobes of the cortex and explain their functions.

Page: 73, 79

Topic: Neuroplasticity; The Cortex: A Peek Beneath the Skull

122. The text states that brain scans reveal that when visually impaired people learn Braille early in life, brain areas specialized for vision become active, suggesting that they become involved in processing touch sensations. Based on information in the text, these areas take on functions normally associated with the \_\_\_\_\_ lobe.

- A) occipital
- B) temporal
- C) parietal
- D) frontal

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 11 Define neuroplasticity and recognize when it is evident in brains.;

LO 13 Identify the lobes of the cortex and explain their functions.

Page: 73, 79

Topic: Neuroplasticity; The Cortex: A Peek Beneath the Skull

WebQuiz: WebQuiz 1

123. Which statement BEST expresses the relationship between neuroplasticity and neurogenesis?

- A) Neurogenesis is an example of neuroplasticity.
- B) Neuroplasticity is an example of neurogenesis.
- C) Neurogenesis is the same process as neuroplasticity.
- D) Neuroplasticity is unrelated to neurogenesis.

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 11 Define neuroplasticity and recognize when it is evident in brains.

Page: 73-74

Topic: Neuroplasticity

124. According to the text, research on neurogenesis began in the:

A) 1970s.

B) 1980s.

C) 1990s.

D) 2000s.

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Learning Objective: LO 11 Define neuroplasticity and recognize when it is evident in brains.

Page: 74

Topic: Neuroplasticity

WebQuiz: WebQuiz 2

125. Which statement is true?

A) Stem cells have been used to treat Parkinson's disease in humans.

B) Stem cells have treated spinal cord injuries in mice.

C) Stem cells must come from embryonic organisms.

D) Stem cells have been used to treat brain-injured humans.

Ans: B

APA 2.0: 1.2; 1.3

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 11 Define neuroplasticity and recognize when it is evident in brains.

Page: 74

Topic: Neuroplasticity

126. The use of stem cells in research and treatment remains controversial because stem cells come from:

- A) nonhuman species.
- B) human embryos.
- C) paid adult donors.
- D) genetic engineering in the laboratory.

Ans: B

APA 2.0: 1.1; 3.1

APA Outcome: 1.2; 5.1

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 11 Define neuroplasticity and recognize when it is evident in brains.

Page: 74

Topic: Neuroplasticity

127. The textbook cites research (Schellenberg & Winner, 2011) exploring the potential cognitive benefits of musical training. What did these researchers find?

- A) On all tests, the scores of people with musical training were equivalent to the scores of those without such training.
- B) On all tests, the scores of people with musical training exceeded the scores of those without such training.
- C) As compared to people without musical training, people with musical training scored higher on auditory tests, but not on overall IQ tests.
- D) As compared to people without musical training, people with musical training scored higher on auditory tests, language tests, and overall IQ tests.

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Feature: Across the World

Learning Objective: LO 11 Define neuroplasticity and recognize when it is evident in brains.

Page: 74-75

Topic: Neuroplasticity

128. \_\_\_\_\_ evidence supports the hypothesis that musical training is related to improved cognitive performance.

- A) Correlational
- B) Experimental
- C) Neither correlational nor experimental

D) Both correlational and experimental

Ans: A

APA 2.0: 1.2; 1.1

APA Outcome: 1.2; 3.1

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Across the World

Learning Objective: LO 11 Define neuroplasticity and recognize when it is evident in brains.

Page: 74-75

Topic: Neuroplasticity

129. A technique called \_\_\_\_\_ records the brain's activity through scalp electrodes.

A) electroencephalogram (EEG)

B) positron emission tomography (PET)

C) computerized axial tomography (CAT)

D) functional magnetic resonance imaging (fMRI)

Ans: A

APA 2.0: 1.2; 2.4

APA Outcome: 1.2; 2.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.3; Table 2.1 Tools for Studying the Brain

Learning Objective: LO 12 Compare and contrast tools scientists use to study the brain.

Page: 76-78

Topic: From Bumps to Brain Scans: We've Come a Long Way

130. \_\_\_\_\_ detects blood flow to brain regions, indicating heightened neural activity.

A) Functional magnetic resonance imaging (fMRI)

B) Positron emission tomography (PET)

C) Computerized axial tomography (CAT)

D) Electroencephalogram (EEG)

Ans: A

APA 2.0: 1.2; 2.4

APA Outcome: 1.2; 2.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.3; Table 2.1 Tools for Studying the Brain



Learning Objective: LO 12 Compare and contrast tools scientists use to study the brain.

Page: 76-78

Topic: From Bumps to Brain Scans: We've Come a Long Way

131. Brent is taking part in an experiment in a cognitive neuroscience lab on campus. Silently, he reads rapid sequences of words flashed on a computer screen. Simultaneously, the electrical activity of his brain is recorded through skull electrodes. The brain scanning technique used in this study is:

- A) computerized axial tomography (CAT).
- B) electroencephalogram (EEG).
- C) positron emission tomography (PET).
- D) functional magnetic resonance imaging (fMRI).

Ans: B

APA 2.0: 1.2; 2.4

APA Outcome: 1.2; 2.2

Bloom's Taxonomy: Applying

Difficulty: Medium

Feature: Infographic 2.3; Table 2.1 Tools for Studying the Brain

Learning Objective: LO 12 Compare and contrast tools scientists use to study the brain.

Page: 76-78

Topic: From Bumps to Brain Scans: We've Come a Long Way

132. Later in the course, you will learn about the different patterns of electrical activity in the brain that occur in the different stages of sleep and dreaming. Our knowledge of these patterns MOST likely reflects the use of a technique known as:

- A) computerized axial tomography (CAT).
- B) positron emission tomography (PET).
- C) electroencephalogram (EEG).
- D) functional magnetic resonance imaging (fMRI).

Ans: C

APA 2.0: 1.2; 2.4

APA Outcome: 1.2; 2.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Feature: Infographic 2.3; Table 2.1 Tools for Studying the Brain

Learning Objective: LO 12 Compare and contrast tools scientists use to study the brain.

Page: 76-78

Topic: From Bumps to Brain Scans: We've Come a Long Way

## WebQuiz: WebQuiz 1

133. A researcher is using a strong magnet to track blood-oxygen changes in participants' brains as they complete decision-making tasks. The researcher is using \_\_\_\_\_ to examine the brain's activity.

- A) computerized axial tomography (CAT).
- B) positron emission tomography (PET).
- C) electroencephalogram (EEG).
- D) functional magnetic resonance imaging (fMRI).

Ans: D

APA 2.0: 1.2; 2.4

APA Outcome: 1.2; 2.2

Bloom's Taxonomy: Applying

Difficulty: Medium

Feature: Infographic 2.3; Table 2.1 Tools for Studying the Brain

Learning Objective: LO 12 Compare and contrast tools scientists use to study the brain.

Page: 76-78

Topic: From Bumps to Brain Scans: We've Come a Long Way

134. Which brain study technique is correctly matched with a description?

- A) computerized axial tomography (CAT) – detects electrical energy in the brain
- B) electroencephalogram (EEG) – reveals patterns of blood flow in the brain
- C) positron emission tomography (PET) – uses radioactive glucose to detect active areas in the brain
- D) functional magnetic resonance imaging (fMRI) – uses x-rays to create cross-sectional images of the brain

Ans: C

APA 2.0: 1.2; 2.4

APA Outcome: 1.2; 2.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Feature: Infographic 2.3; Table 2.1 Tools for Studying the Brain

Learning Objective: LO 12 Compare and contrast tools scientists use to study the brain.

Page: 76-78

Topic: From Bumps to Brain Scans: We've Come a Long Way

135. Which brain study technique is NOT correctly matched with a limitation?

- A) computerized axial tomography (CAT) – expose people to radiation
- B) electroencephalogram (EEG) – expensive and time-consuming
- C) positron emission tomography (PET) – expose people to radiation
- D) functional magnetic resonance imaging (fMRI) – does not necessarily localize the cognitive processes of interest

Ans: B

APA 2.0: 1.2; 2.4

APA Outcome: 1.2; 2.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Feature: Infographic 2.3; Table 2.1 Tools for Studying the Brain

Learning Objective: LO 12 Compare and contrast tools scientists use to study the brain.

Page: 76

Topic: From Bumps to Brain Scans: We've Come a Long Way

136. The brain's outermost cellular layer is called the:

- A) brain stem.
- B) cerebellum.
- C) association area.
- D) cerebral cortex.

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 79

Topic: The Cortex: A Peek Beneath the Skull

137. The temporal lobe is to the occipital lobe as \_\_\_\_\_ is to \_\_\_\_\_.

- A) hearing; touch
- B) vision; hearing
- C) touch; vision
- D) hearing; vision

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Infographic 2.4

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 79

Topic: The Cortex: A Peek Beneath the Skull

WebQuiz: WebQuiz 1

138. Vision is to the occipital lobe as \_\_\_\_\_ is to the \_\_\_\_\_ lobe.

- A) hearing; frontal
- B) hearing; parietal
- C) touch; parietal
- D) touch; frontal

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Infographic 2.4

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 79-83

Topic: The Cortex: A Peek Beneath the Skull

139. The temporal lobe is \_\_\_\_\_ the \_\_\_\_\_ lobe.

- A) beneath; occipital
- B) beneath; parietal
- C) behind; occipital
- D) behind; parietal

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Infographic 2.4

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 79-83

Topic: The Cortex: A Peek Beneath the Skull

140. Alphonse suffered a stroke, resulting in a lesion in his temporal lobe. Which of Alphonse's perceptual or cognitive functions is MOST likely impaired?

- A) motor coordination
- B) decision-making
- C) hearing
- D) vision

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Applying

Difficulty: Medium

Feature: Infographic 2.4

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 79-83

Topic: The Cortex: A Peek Beneath the Skull

141. In a roller-blading mishap, Wendy fell down and injured the very back of her head. Which of her senses is MOST likely impaired?

- A) vision
- B) touch
- C) hearing
- D) smell

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Applying

Difficulty: Medium

Feature: Infographic 2.4

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 79-83

Topic: The Cortex: A Peek Beneath the Skull

142. Which sequence correctly identifies and orders the lobes of the cortex, from anterior to

posterior?

- A) frontal > temporal and parietal > posterior
- B) occipital > temporal and parietal > frontal
- C) frontal > occipital > temporal and parietal
- D) frontal > temporal and parietal > occipital

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.4

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 81

Topic: The Cortex: A Peek Beneath the Skull

143. Anterior to the parietal lobe is the frontal lobe; beneath it is the \_\_\_\_\_ lobe.

- A) occipital
- B) dorsal
- C) temporal
- D) posterior

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Easy

Feature: Infographic 2.4

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 81-83

Topic: The Cortex: A Peek Beneath the Skull

144. Sensory and motor information is integrated in the \_\_\_\_\_ areas of the cortex.

- A) association
- B) correlation
- C) relational
- D) coordination

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 14 Recognize the association areas and identify their functions.

Page: 79

Topic: The Cortex: A Peek Beneath the Skull

145. The brain's association areas:

- A) are more precisely localized than are the sensory and motor areas.
- B) receive and analyze sensory stimuli.
- C) make up the majority of the cortical surface.
- D) are smaller than the sensory or motor areas.

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 14 Recognize the association areas and identify their functions.

Page: 79

Topic: The Cortex: A Peek Beneath the Skull

146. Broca's area is to Wernicke's area as the \_\_\_\_\_ lobe is to the \_\_\_\_\_ lobe.

- A) frontal; parietal
- B) frontal; temporal
- C) parietal; frontal
- D) temporal; frontal

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.8 Language Areas of the Brain; Infographic 2.4

Learning Objective: LO 10 Identify areas in the brain responsible for language production and comprehension.; LO 14 Recognize the association areas and identify their functions.

Page: 72, 79-81

Topic: Language and the Left; The Cortex: A Peek Beneath the Skull

147. Networks of neurons in the \_\_\_\_\_ lobe are involved in processing emotions and making plans.

- A) frontal
- B) occipital
- C) parietal
- D) temporal

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 14 Recognize the association areas and identify their functions.

Page: 81

Topic: The Cortex: A Peek Beneath the Skull

WebQuiz: WebQuiz 2

148. Rory has been diagnosed with ADHD. He is often impulsive and is prone to emotional outbursts. He has difficulty making plans and carrying them out. According to the textbook, \_\_\_\_\_ lobe deficits may play a role in Rory's ADHD.

- A) occipital
- B) parietal
- C) temporal
- D) frontal

Ans: D

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Applying

Difficulty: Medium

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 81

Topic: The Cortex: A Peek Beneath the Skull

WebQuiz: WebQuiz 2

149. Which research method in psychology is exemplified by the study of Phineas Gage's thought and behavior following his brain injury?

- A) the correlational method



- B) case study
- C) naturalistic observation
- D) the experimental method

Ans: B

APA 2.0: 1.2; 2.4

APA Outcome: 1.2; 2.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Infographic 2.4

Learning Objective: LO 14 Recognize the association areas and identify their functions.

Page: 81

Topic: The Cortex: A Peek Beneath the Skull

WebQuiz: WebQuiz 2

150. The brain injury suffered by 19<sup>th</sup>-century railroad worker Phineas Gage allowed psychologists to learn about the functions of the brain's:

- A) frontal lobe.
- B) brainstem.
- C) limbic system.
- D) right hemisphere.

Ans: A

APA 2.0: 1.2; 2.4

APA Outcome: 1.2; 2.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.4

Learning Objective: LO 14 Recognize the association areas and identify their functions.

Page: 80

Topic: The Cortex: A Peek Beneath the Skull

151. The \_\_\_\_\_ appears to support some aspects of personality development.

- A) corpus callosum
- B) parietal lobe
- C) brainstem
- D) frontal lobe

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Learning Objective: LO 14 Recognize the association areas and identify their functions.

Page: 81

Topic: The Cortex: A Peek Beneath the Skull

152. In which lobe is the motor cortex located?

- A) occipital
- B) frontal
- C) parietal
- D) temporal

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.4

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 81

Topic: The Cortex: A Peek Beneath the Skull

153. In a neurophysiological investigation, a monkey makes an involuntary gesture when a portion of its brain is electrically stimulated. The area of the brain that was MOST likely stimulated is the:

- A) front portion of the frontal lobe.
- B) front portion of the parietal lobe.
- C) rear portion of the frontal lobe.
- D) rear portion of the parietal lobe.

Ans: C

APA 2.0: 1.2; 2.4

APA Outcome: 1.2; 2.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Infographic 2.4

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 81

Topic: The Cortex: A Peek Beneath the Skull

154. Autopsy studies of Einstein's brain suggest that the \_\_\_\_\_ lobe may be involved in spatial and mathematical intelligence.

- A) frontal
- B) parietal
- C) temporal
- D) occipital

Ans: B

APA 2.0: 1.2; 2.4

APA Outcome: 1.2; 2.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Learning Objective: LO 14 Recognize the association areas and identify their functions.

Page: 82-84

Topic: The Cortex: A Peek Beneath the Skull

155. Which statement BEST describes the relationship between the amount of motor cortex devoted to the control of a particular movement and the degree of precision required by the movement?

- A) There is no relationship.
- B) There is only a weak relationship.
- C) There is a positive correlation.
- D) There is a negative correlation.

Ans: C

APA 2.0: 1.2; 5.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.9 The Motor and Somatosensory Cortex

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 82

Topic: The Cortex: A Peek Beneath the Skull

156. There is a \_\_\_\_\_ correlation between the touch sensitivity of a body part and the amount of somatosensory cortex devoted to that part.

- A) negative
- B) minimal
- C) positive
- D) perfect

Ans: C

APA 2.0: 1.2; 5.2

APA Outcome: 1.2; 2.3

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.9 The Motor and Somatosensory Cortex

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 82-83

Topic: The Cortex: A Peek Beneath the Skull

157. Somatosensory cortex is to motor cortex as the \_\_\_\_\_ lobe is to the \_\_\_\_\_ lobe.

- A) temporal; parietal
- B) parietal; temporal
- C) parietal; frontal
- D) frontal; parietal

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Infographic 2.4

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 81-83

Topic: The Cortex: A Peek Beneath the Skull

158. Auditory cortex is to the \_\_\_\_\_ lobe as \_\_\_\_\_ cortex is to the occipital lobe.

- A) parietal; somatosensory
- B) parietal; visual
- C) temporal; somatosensory
- D) temporal; visual

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Infographic 2.4

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 81-83

Topic: The Cortex: A Peek Beneath the Skull

WebQuiz: WebQuiz 1

159. Which choice correctly pairs a case study or scientist from psychology's history, with the cortical area with which he is associated?

- A) Einstein – parietal lobe
- B) Fritsch – temporal lobe
- C) Gage – somatosensory cortex
- D) Penfield – occipital lobe

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 80-83

Topic: The Cortex: A Peek Beneath the Skull

160. Which lobe is correctly matched with its cortical area?

- A) frontal lobe – visual cortex
- B) occipital lobe – somatosensory cortex
- C) parietal lobe – motor cortex
- D) temporal lobe – auditory cortex

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 81-83

Topic: The Cortex: A Peek Beneath the Skull

161. The \_\_\_\_\_ is a group of interrelated structures involved in people's experiences of emotion, motivation, and memory.

- A) reticular formation
- B) limbic system
- C) hindbrain
- D) corpus callosum

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 15 Distinguish the structures and functions of the limbic system.

Page: 84

Topic: Digging Below the Cortex

162. Which structure is NOT part of the limbic system?

- A) amygdala
- B) hippocampus
- C) medulla
- D) thalamus

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Figure 2.10 The Limbic System

Learning Objective: LO 15 Distinguish the structures and functions of the limbic system.

Page: 84

Topic: Digging Below the Cortex

163. A neuroscientist finds that as compared to civilian college students, veterans of the wars in Iraq and Afghanistan show higher activation in a certain brain area when they are shown intense, emotional pictures. This brain area is MOST likely the:

- A) thalamus.
- B) hypothalamus.
- C) hippocampus.

D) amygdala.

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Learning Objective: LO 15 Distinguish the structures and functions of the limbic system.

Page: 84

Topic: Digging Below the Cortex

164. Darnell underwent surgery to control his severe epilepsy. Now, however, Darnell cannot form new memories of his experiences, although he does remember events in the past. Most likely, the surgery destroyed a portion of the \_\_\_\_\_ in Darnell's brain.

A) hypothalamus

B) hippocampus

C) amygdala

D) thalamus

Ans: B

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Learning Objective: LO 15 Distinguish the structures and functions of the limbic system.

Page: 84

Topic: Digging Below the Cortex

165. The amygdala is to emotion as the hippocampus is to:

A) problem solving.

B) motivation.

C) arousal.

D) memory.

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 15 Distinguish the structures and functions of the limbic system.

Page: 84

Topic: Digging Below the Cortex

166. The \_\_\_\_ may be considered the brain's sensory relay station.

- A) amygdala
- B) hippocampus
- C) thalamus
- D) hypothalamus

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 15 Distinguish the structures and functions of the limbic system.

Page: 85

Topic: Digging Below the Cortex

167. Pizza! Beer! Sex! Our motivation or drive for such things is based in part on the activity of the brain structure known as the:

- A) hypothalamus.
- B) hippocampus.
- C) thalamus.
- D) pons.

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Learning Objective: LO 15 Distinguish the structures and functions of the limbic system.

Page: 85

Topic: Digging Below the Cortex

168. The hypothalamus is located immediately \_\_\_\_\_ the thalamus.

- A) below
- B) above



- C) in front of
- D) behind

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.10 The Limbic System

Learning Objective: LO 15 Distinguish the structures and functions of the limbic system.

Page: 85

Topic: Digging Below the Cortex

169. Which function is correctly matched with its corresponding limbic system structure?

- A) sensation – amygdala
- B) emotion – hippocampus
- C) motivation – hypothalamus
- D) memory – thalamus

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 15 Distinguish the structures and functions of the limbic system.

Page: 84-85

Topic: Digging Below the Cortex

170. Which limbic system structure is correctly matched with the potential effects of damage to that structure?

- A) amygdala – unusual emotional or aggressive behavior
- B) hippocampus – difficulties in learning and memory
- C) hypothalamus – poor regulation of hunger and eating
- D) All of these structures are correctly matched.

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Learning Objective: LO 15 Distinguish the structures and functions of the limbic system.

Page: 84-85

Topic: Digging Below the Cortex

WebQuiz: WebQuiz 2

171. The reticular activating system is located in the \_\_\_\_\_. It regulates \_\_\_\_\_.

- A) midbrain; arousal
- B) forebrain; movement
- C) forebrain; arousal
- D) hindbrain; movement

Ans: A

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Learning Objective: LO 16 Distinguish the structures and functions of the brainstem and cerebellum.

Page: 85

Topic: Digging Below the Cortex

172. The pons serves to:

- A) regulate arousal.
- B) relay sensory information.
- C) coordinate movement.
- D) consolidate memories.

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 16 Distinguish the structures and functions of the brainstem and cerebellum.

Page: 85

Topic: Digging Below the Cortex

173. The hindbrain includes each of the following structures EXCEPT the:

- A) medulla.
- B) pons.
- C) cerebellum.
- D) thalamus.

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Figure 2.11 The Brainstem and the Cerebellum

Learning Objective: LO 16 Distinguish the structures and functions of the brainstem and cerebellum.

Page: 85-86

Topic: Digging Below the Cortex

174. Which choice correctly identifies the structures in the brainstem?

- A) medulla, thalamus, amygdala
- B) reticular formation, thalamus, amygdala
- C) pons, reticular formation, amygdala
- D) medulla, pons, reticular formation

Ans: D

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Figure 2.11 The Brainstem and the Cerebellum

Learning Objective: LO 16 Distinguish the structures and functions of the brainstem and cerebellum.

Page: 85

Topic: Digging Below the Cortex

175. The part of brainstem closest to the spinal cord is the \_\_\_\_; it is important for such functions as \_\_\_\_.

- A) pons; breathing and heart rate
- B) pons; movement
- C) medulla; breathing and heart rate
- D) medulla; movement

Ans: C  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Understanding  
Difficulty: Medium  
Feature: Figure 2.11 The Brainstem and the Cerebellum  
Learning Objective: LO 16 Distinguish the structures and functions of the brainstem and cerebellum.  
Page: 85-86  
Topic: Digging Below the Cortex

176. The word cerebellum means little brain. Where in the brain is the cerebellum located in relation to the brainstem?

- A) in front of
- B) beneath
- C) behind
- D) above

Ans: C  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Understanding  
Difficulty: Medium  
Feature: Figure 2.11 The Brainstem and the Cerebellum  
Learning Objective: LO 16 Distinguish the structures and functions of the brainstem and cerebellum.  
Page: 86  
Topic: Digging Below the Cortex  
WebQuiz: WebQuiz 1

177. Yves has been drinking. He has difficulty walking a straight line when asked to do so by a police officer. Apparently, Yves's \_\_\_\_\_ is functioning poorly.

- A) cerebellum
- B) thalamus
- C) medulla
- D) amygdala

Ans: A  
APA 2.0: 1.2; 5.3

APA Outcome: 1.2; 4.4

Bloom's Taxonomy: Applying

Difficulty: Challenging

Feature: Figure 2.11 The Brainstem and the Cerebellum

Learning Objective: LO 16 Distinguish the structures and functions of the brainstem and cerebellum.

Page: 86

Topic: Digging Below the Cortex

178. Kira seems uncoordinated, often tripping or stumbling. In addition, she sometimes displays emotional reactions that do not fit the situation. Kira's \_\_\_\_\_ may be damaged.

A) medulla

B) pons

C) cerebellum

D) hippocampus

Ans: C

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Feature: Figure 2.11 The Brainstem and the Cerebellum

Learning Objective: LO 16 Distinguish the structures and functions of the brainstem and cerebellum.

Page: 86

Topic: Digging Below the Cortex

WebQuiz: WebQuiz 1

True/False

179. Neuroscience is the same thing as biological psychology.

Ans: False

APA 2.0: 1.1

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 1 Define neuroscience and explain its contributions to our understanding of behavior.

Page: 51

Topic: Biology and Behavior: Studying the Last Frontier

180. Neurons are the fundamental building blocks of the nervous system.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 1 Define neuroscience and explain its contributions to our understanding of behavior.

Page: 52

Topic: Biology and Behavior: Studying the Last Frontier

181. Axons receive signals from other neurons.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Figure 2.1 The Neuron; Infographic 2.1

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

Page: 53

Topic: Just the Basics

182. Receiving is to sending as axons are to dendrites.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.1 The Neuron; Infographic 2.1

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

Page: 53

Topic: Just the Basics

183. Myelin insulates dendrites.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Figure 2.1 The Neuron; Infographic 2.1

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

Page: 53

Topic: Just the Basics

184. Glial cells outnumber neurons.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

Page: 53

Topic: Just the Basics

185. Glial cells called Schwann cells help guard the brain from inflammation and infection.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

Page: 54

Topic: Just the Basics

186. The potential of a nerve cell at rest is about -70 mV.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

Page: 54

Topic: Communication Within and Between

187. Threshold potential is to action potential as -70 mV is to -55 mV.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

Page: 56

Topic: Communication Within and Between

188. During an action potential, potassium ions rush into a neuron.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

Page: 56

Topic: Communication Within and Between



189. Some action potentials are stronger than others.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

Page: 56-57

Topic: Communication Within and Between

190. Action potentials travel more quickly in myelinated than in unmyelinated axons.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

Page: 57

Topic: Communication Within and Between

191. One disease that reflects a breakdown in myelin is cystic fibrosis.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

Page: 57

Topic: Communication Within and Between

192. The process whereby neurotransmitters are reabsorbed by the sending neuron is called reuptake.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.2

Learning Objective: LO 3 Illustrate how neurons communicate with each other.

Page: 57

Topic: Communication Within and Between

193. Neurons are physically connected at a place called a synapse.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Infographic 2.2

Learning Objective: LO 3 Illustrate how neurons communicate with each other.

Page: 57

Topic: Communication Within and Between

194. Nicotine is an acetylcholine agonist.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Feature: Infographic 2.2

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

Page: 59

Topic: Communication Within and Between

195. GABA sends inhibitory messages to a receiving neuron.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

Page: 58

Topic: Major League Players: Neurotransmitters

196. Glutamate and GABA have similar effects on neural activity.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

Page: 58

Topic: Major League Players: Neurotransmitters

197. Despite their different roles in behavior, all neurotransmitters are excitatory in their effects.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

Page: 58-60

Topic: Major League Players: Neurotransmitters

198. Ellie lives with depression. Her medication probably elevates the activity of acetylcholine.

Ans: False

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

Page: 58

Topic: Major League Players: Neurotransmitters

199. Dopamine is involved in learning through reinforcement.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

Page: 58

Topic: Major League Players: Neurotransmitters

200. Endorphins are the brain's own morphine.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

Page: 60

Topic: Major League Players: Neurotransmitters

201. After a long run, Aaron sometimes experiences a feeling of euphoria, a “runners’ high” reflecting the activity of a neurotransmitters called adenosine.

Ans: False

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.4

Bloom's Taxonomy: Applying

Difficulty: Challenging

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

Page: 60

Topic: Major League Players: Neurotransmitters

202. Caffeine enhances the activity of the neurotransmitter adenosine.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

Page: 60

Topic: Major League Players: Neurotransmitters

203. The somatic nervous system is a division of the central nervous system.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.2 Overview of the Nervous System

Learning Objective: LO 5 Recognize the connections between the central and peripheral nervous systems.

Page: 61

Topic: The Supporting Systems

204. The sympathetic nervous system is a branch of the autonomic nervous system.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2  
Bloom's Taxonomy: Understanding  
Difficulty: Medium  
Feature: Figure 2.2 Overview of the Nervous System  
Learning Objective: LO 5 Recognize the connections between the central and peripheral nervous systems.  
Page: 61  
Topic: The Supporting Systems

205. Sensory neurons carry information to the brain.

Ans: True  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Remembering  
Difficulty: Easy  
Feature: Figure 2.3 The Spinal Cord and Reflex Arc  
Learning Objective: LO 5 Recognize the connections between the central and peripheral nervous systems.  
Page: 62  
Topic: The Spinal Cord and Simple Reflexes

206. Interneurons connect sensory neurons to motor neurons.

Ans: True  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Remembering  
Difficulty: Easy  
Feature: Figure 2.3 The Spinal Cord and Reflex Arc  
Learning Objective: LO 5 Recognize the connections between the central and peripheral nervous systems.  
Page: 62  
Topic: The Spinal Cord and Simple Reflexes

207. Reflexes are controlled by the peripheral nervous system.

Ans: False  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Understanding  
Difficulty: Challenging  
Learning Objective: LO 5 Recognize the connections between the central and peripheral nervous systems.  
Page: 62-63  
Topic: The Spinal Cord and Simple Reflexes

208. Afferent is to efferent as motor is to sensory.

Ans: False  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Understanding  
Difficulty: Medium  
Learning Objective: LO 5 Recognize the connections between the central and peripheral nervous systems.  
Page: 63  
Topic: The Spinal Cord and Simple Reflexes

209. The somatic nervous system controls the body's internal responses.

Ans: False  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Remembering  
Difficulty: Easy  
Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.  
Page: 63-64  
Topic: What Lies Beyond: The Peripheral Nervous System

210. Kate's racing heart suggests that her sympathetic nervous system is active.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Feature: Figure 2.4 The Sympathetic and Parasympathetic Nervous Systems

Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.

Page: 64

Topic: What Lies Beyond: The Peripheral Nervous System

211. The parasympathetic nervous system controls the fight-or-flight response.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.

Page: 64

Topic: What Lies Beyond: The Peripheral Nervous System

212. Women are more likely than men to show a "tend-and-befriend" response to stress.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2; 5.5; 8.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.

Page: 65

Topic: What Lies Beyond: The Peripheral Nervous System

213. Men earn a majority of the bachelors' degrees in the United States.

Ans: False



APA 2.0: 1.1

APA Outcome: 10.3; 5.5; 8.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Figure 2.5 Bachelors' Degrees Awarded in the United States; Think Again

Learning Objective: LO 6 Describe the organization and function of the peripheral nervous system.

Page: 66

Topic: What Lies Beyond: The Peripheral Nervous System

214. Some chemicals act as both neurotransmitters and hormones.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 7 Evaluate the role of the endocrine system and how it influences behavior.

Page: 66

Topic: The Endocrine System and its Slow-Poke Messengers

215. The adrenal gland is the endocrine system's "CEO."

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 7 Evaluate the role of the endocrine system and how it influences behavior.

Page: 66-67

Topic: The Endocrine System and its Slow-Poke Messengers

216. The pineal gland secretes the hormone melatonin.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 7 Evaluate the role of the endocrine system and how it influences behavior.

Page: 67

Topic: The Endocrine System and its Slow-Poke Messengers

217. Thyroxin is to insulin as the thyroid gland is to the pituitary gland.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 7 Evaluate the role of the endocrine system and how it influences behavior.

Page: 67

Topic: The Endocrine System and its Slow-Poke Messengers

218. The cerebrum contains the brainstem.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 8 Describe the functions of the two brain hemispheres and how they communicate.

Page: 69

Topic: Right Brain, Left Brain: The Two Hemispheres

219. The bundle of nerve fibers joining the two hemisphere is called the corpus callosum.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2  
Bloom's Taxonomy: Remembering  
Difficulty: Easy  
Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.  
Page: 69  
Topic: Split Brain

220. The split-brain operation is used to treat severe schizophrenia.

Ans: False  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Remembering  
Difficulty: Easy  
Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.  
Page: 69-70  
Topic: Split Brain

221. Wilder Penfield conducted ground-breaking split brain studies.

Ans: False  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Remembering  
Difficulty: Easy  
Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.  
Page: 69-70  
Topic: Split Brain

222. Will is a split-brain patient. When an object's image is flashed in his left-visual field, he cannot name the object.

Ans: True  
APA 2.0: 1.2  
APA Outcome: 1.2  
Bloom's Taxonomy: Applying  
Difficulty: Challenging

Feature: Figure 2.7 The Split-Brain Experiment

Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.

Page: 70-71

Topic: Split Brain

223. Left brain is to language processing as right brain is to visual and spatial tasks.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.

Page: 71-72

Topic: Split Brain

224. Some people are left-brained and others are right-brained.

Ans: False

APA 2.0: 1.1

APA Outcome: 3.1

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 9 Explain lateralization and how split-brain operations affect it.

Page: 71

Topic: Split Brain

225. Abbie is right-handed. There is a 25% chance that language is right-lateralized in her brain.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Applying

Difficulty: Medium

Learning Objective: LO 10 Identify areas in the brain responsible for language production and comprehension.

Page: 72

Topic: Language and the Left

226. Wernicke's area is in the right frontal lobe.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Figure 2.8 Language Areas of the Brain; Infographic 2.4

Learning Objective: LO 10 Identify areas in the brain responsible for language production and comprehension.; LO 14 Recognize the association areas and identify their functions.

Page: 72

Topic: Language and the Left

227. Broca's and Wernicke's areas process music and gestures as well as language.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 10 Identify areas in the brain responsible for language production and comprehension.; LO 14 Recognize the association areas and identify their functions.

Page: 72

Topic: Language and the Left

228. The right hemisphere's role in language processing is negligible.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 10 Identify areas in the brain responsible for language production and comprehension.

Page: 72

Topic: The Role of the Right

229. We are born with all the brain cells we will ever have.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2; 3.1

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 11 Define neuroplasticity and recognize when it is evident in brains.

Page: 73

Topic: Neuroplasticity

230. Neuroplasticity is apparent even when an entire hemisphere is lost.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 11 Define neuroplasticity and recognize when it is evident in brains.

Page: 73-74

Topic: Neuroplasticity

231. The evidence relating musical training to cognitive performance is mainly correlational.

Ans: True

APA 2.0: 1.2; 2.4

APA Outcome: 1.2; 3.1

Bloom's Taxonomy: Understanding

Difficulty: Challenging

Feature: Across the World

Learning Objective: LO 11 Define neuroplasticity and recognize when it is evident in brains.

Page: 74-75

Topic: Neuroplasticity

232. Embryonic stem cells have helped treat Parkinson's disease in humans.

Ans: False

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 11 Define neuroplasticity and recognize when it is evident in brains.

Page: 74

Topic: Neuroplasticity

233. PET scans can be expensive and time-consuming.

Ans: True

APA 2.0: 1.2; 2.4

APA Outcome: 1.2; 2.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.3; Table 2.2 Tools for Studying the Brain

Learning Objective: LO 12 Compare and contrast tools scientists use to study the brain.

Page: 76

Topic: From Bumps to Brain Scans: We've Come a Long Way

234. A psychologist is using EEG when she uses scalp electrodes to measure the electrical activity in a participant's brain.

Ans: True

APA 2.0: 1.2; 2.4

APA Outcome: 1.2; 2.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Infographic 2.3; Table 2.2 Tools for Studying the Brain

Learning Objective: LO 12 Compare and contrast tools scientists use to study the brain.

Page: 76-78

Topic: From Bumps to Brain Scans: We've Come a Long Way

235. Computerized axial tomography (CAT) measures blood flow to the different areas of the brain.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2; 2.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.3; Table 2.2 Tools for Studying the Brain

Learning Objective: LO 12 Compare and contrast tools scientists use to study the brain.

Page: 76-78

Topic: From Bumps to Brain Scans: We've Come a Long Way

236. After a stroke, Mrs. Williamson has difficulty understanding what is said to her. The stroke probably damaged her temporal lobe.

Ans: True

APA 2.0: 1.2; 51.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Applying

Difficulty: Medium

Feature: Infographic 2.4

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 79

Topic: The Cortex: A Peek Beneath the Skull

237. The processing of touch, pain, and pressure sensations occurs in the temporal lobe.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.4

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 79

Topic: The Cortex: A Peek Beneath the Skull



238. In the cortex, incoming information is linked with stored knowledge in regions termed association areas.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 14 Recognize the association areas and identify their functions.

Page: 79

Topic: The Cortex: A Peek Beneath the Skull

239. The case of Phineas Gage provided early knowledge regarding the role of the occipital lobe in thought and behavior.

Ans: False

APA 2.0: 1.2; 2.4

APA Outcome: 1.2; 2.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.4

Learning Objective: LO 14 Recognize the association areas and identify their functions.

Page: 80

Topic: The Cortex: A Peek Beneath the Skull

240. Phineas Gage is to Albert Einstein as the parietal lobe is to the frontal lobe.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Infographic 2.4

Learning Objective: LO 14 Recognize the association areas and identify their functions.

Page: 81-82

Topic: The Cortex: A Peek Beneath the Skull

241. Motor cortex is to visual cortex as the frontal lobe is to the occipital lobe.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Infographic 2.4

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 80-83

Topic: The Cortex: A Peek Beneath the Skull

242. The auditory cortex is located in the parietal lobe.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.4

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 83

Topic: The Cortex: A Peek Beneath the Skull

243. Autopsy studies of Einstein's brain suggested that the size of the parietal lobe may be negatively correlated with mathematical and spatial intelligence.

Ans: False

APA 2.0: 1.2; 5.2

APA Outcome: 1.2; 2.3

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 14 Recognize the association areas and identify their functions.

Page: 80-82

Topic: The Cortex: A Peek Beneath the Skull

244. The different body parts are equally represented in the somatosensory cortex.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Feature: Figure 2.9 The Motor and Somatosensory Cortex

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 82-83

Topic: The Cortex: A Peek Beneath the Skull

245. When a stroke damages a portion of Mrs. Schexnayder's auditory cortex, it destroys cells in the temporal lobe.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Feature: Infographic 2.4

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 83

Topic: The Cortex: A Peek Beneath the Skull

246. Evolutionarily, the cortex is the oldest part of the brain.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 83

Topic: The Cortex: A Peek Beneath the Skull

247. The limbic system contains the pons and medulla.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Easy

Feature: Figure 2.10 The Limbic System

Learning Objective: LO 15 Distinguish the structures and functions of the limbic system.

Page: 84

Topic: Digging Below the Cortex

248. People with epilepsy have sometimes had portions of their limbic system removed. Subsequent memory problems may reflect damage to the thalamus.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 15 Distinguish the structures and functions of the limbic system.

Page: 84

Topic: Digging Below the Cortex

249. Information travels from our sensory receptors to the thalamus in the brain, which relays it to higher association areas.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Learning Objective: LO 15 Distinguish the structures and functions of the limbic system.

Page: 85

Topic: Digging Below the Cortex

250. Anjelica is becoming increasingly hungry during a long late-afternoon class. Certain cells

in her hypothalamus are probably becoming especially active.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Applying

Difficulty: Challenging

Learning Objective: LO 15 Distinguish the structures and functions of the limbic system.

Page: 85

Topic: Digging Below the Cortex

251. Heart rate and respiration are controlled by the medulla in the brainstem.

Ans: True

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 16 Distinguish the structures and functions of the brainstem and cerebellum.

Page: 85-86

Topic: Digging Below the Cortex

252. The cerebellum is part of the limbic system.

Ans: False

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Understanding

Difficulty: Easy

Learning Objective: LO 16 Distinguish the structures and functions of the brainstem and cerebellum.

Page: 86

Topic: Digging Below the Cortex

253. An individual with damage to the cerebellum would have trouble regulating attention and arousal.

Ans: False

APA 2.0: 1.2; 5.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 16 Distinguish the structures and functions of the brainstem and cerebellum.

Page: 86

Topic: Digging Below the Cortex

### Essay

254. Draw a typical neuron, labeling its major parts accurately. In several sentences, briefly identify the functions of the parts labeled on your diagram.

Ans: The drawing should contain: (a) dendrites, which should appear as clusters of branchlike extensions from the cell body; (b) the cell body, which should appear as a roundish structure in the center of the diagram; (c) the axon, which should appear as a long tube extending from the cell body; (d) terminal buds, which should appear as extensions projecting from the axon; and (e) myelin, which should appear bracketing portions of the axon.

These functions should be described. Dendrites—receive information from other neurons.

Axon—sends messages to terminal buds. Myelin—insulates one axon from another and speeds neural transmission. Terminal buds—send messages to other neurons.

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Feature: Figure 2.1 The Neuron; Infographic 2.1

Learning Objective: LO 2 Label the parts of a neuron and explain an action potential.

Page: 53

Topic: Just the Basics

255. Outline in as much detail as you can the sequence of events that occurs at the synapse when a neural message is communicated.

Ans: The answer should include the following steps in the sequence: (1) an action potential

reaches the end of the axon, or the terminal bud; (2) the potential stimulates the release of neurotransmitter molecules from vesicles within the terminal bud; (3) the neurotransmitter molecules float passively across the gap between the terminal bud of the sending neuron and the dendrites of the receiving neuron; (4) the molecules fit into specialized receptor sites on the dendrites of the receiving neuron; making (5) the receiving neuron either more or less likely to produce its own action potential, depending on the neurotransmitter.

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Feature: Infographic 2.2

Learning Objective: LO 3 Illustrate how neurons communicate with each other.

Page: 57, 59

Topic: Communication Within and Between

256. Identify three neurotransmitters and describe their roles in thought and behavior. Where possible, use specific examples to illustrate their contributions to your own behavior.

Ans: The answer should include three of these neurotransmitters. At least one of the functions or domains listed for each of the three neurotransmitters should be mentioned, ideally along with a personalized example.

Acetylcholine—enables movement; involved in memory. Acetylcholine allows me to move my fingers so that I may text a friend on my phone.

Glutamate—plays a role in learning and memory. Glutamate helps me learn the material in my textbooks and to remember it for tests.

GABA— an inhibitory neurotransmitter.

Norepinephrine—helps prepare the body for stressful situations, such as giving an oral presentation in class.

Dopamine—involved in movement, attention, learning and reinforcement. Dopamine contributes to the pleasure I take in meeting a friend for lunch or coffee.

Serotonin—regulates sleep, mood, and eating. Serotonin may help regulate my feelings of hunger throughout a long day on campus.

Endorphins—the brain's natural painkiller; may produce euphoric feelings. Endorphins lessen the discomfort of working out, allowing me to extend my training.

APA 2.0: 1.2; 5.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Applying

Difficulty: Medium

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

Page: 58

Topic: Major League Players: Neurotransmitters

257. Identify how abnormal levels of specific neurotransmitters may be involved in each of these disorders: Alzheimer's disease, depression, Parkinson's disease, and schizophrenia.

Ans: The answer should include:

Alzheimer's disease—low levels of acetylcholine

depression—abnormally low levels of serotonin

Parkinson's disease—deterioration of neurons that produce dopamine

Schizophrenia—underactivity of glutamate

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Learning Objective: LO 4 Summarize various neurotransmitters and the roles they play in human behavior.

Page: 58

Topic: Major League Players: Neurotransmitters

258. Mandy visits her doctor for her annual physical checkup. The doctor taps Mandy's knee with a rubber mallet; Mandy's knee jerks immediately. Explain how Mandy's response demonstrates the reflex arc in action.

Ans: The reflex arc describes the process whereby a sensory stimulus elicits an automatic response. When the doctor taps Mandy's knee, sensory neurons carry the signal to Mandy's spinal cord. In her spinal cord, the signal from the sensory neurons is received by interneurons. The interneurons immediately activate motor neurons. The motor neurons instruct muscles in Mandy's knee to contract, resulting in the knee jerk.

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.4

Bloom's Taxonomy: Applying

Difficulty: Challenging

Feature: Figure 2.3 The Spinal Cord and Reflex Arc

Learning Objective: LO 5 Recognize the connections between the central and peripheral nervous systems.

Page: 62-63

Topic: The Spinal Cord and Simple Reflexes

259. Distinguish between the sympathetic and parasympathetic divisions of the autonomic nervous system. For each division, provide an example of a situation in which the division would



become active. Describe the effects of the activity of each division on several bodily processes.

Ans: The answer should contain the following information:

Sympathetic nervous system—acts to prepare the body for action in stressful situations by mobilizing the organism's resources to "fight" or "flee."

Parasympathetic nervous system—acts to calm the body once a stressful situation or emergency has ended. Allows the body to store energy.

The sympathetic nervous system—becomes active in such "fight or flight" situations as spotting a threatening stranger in a desolate parking garage, being involved in a near-accident on the road, and so on.

The parasympathetic nervous system—becomes active in calm, restful situations such as relaxing after dinner or resting in bed before falling asleep.

Signs of sympathetic nervous system activity—increased heart rate, inhibited digestion, dilated pupils, shallow breathing.

Signs of parasympathetic nervous system activity—decreased heart rate, facilitated digestion, constricted pupils, slowed respiration.

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.4

Bloom's Taxonomy: Applying

Difficulty: Challenging

Feature: Figure 2.4 The Sympathetic and Parasympathetic Nervous Systems

Learning Objective: LO 6 Describe the organization and function of the peripheral nervous systems.

Page: 64-65

Topic: What Lies Beyond: The Peripheral Nervous System

260. Identify several components of the endocrine system. State the hormone(s) each component produces. Identify the functions of the hormones you mention.

Ans: The answer should mention several of these:

Adrenal gland—involved in responses to stress and in regulating salt balance.

Pancreas—produces insulin.

Pituitary gland—the endocrine system's "master" or "chief executive" gland.

Pineal gland—produces melatonin, which regulates daily rhythms.

Thyroid gland—produces thyroxin, which regulates metabolism.

Testes and ovaries—male and female sex hormones.

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Learning Objective: LO 7 Evaluate the role of the endocrine system and how it influences behavior.

Page: 66-67

Topic: The Endocrine System and its Slow-Poke Messengers

261. To what extent is the brain capable of continued development during adulthood? Distinguish between neuroplasticity and neurogenesis. Discuss the potential implications of these processes for the treatment of disorders of the nervous system. Identify at least one controversial issue in the application of neuroplasticity to the treatment of disorders.

Ans: The answer should contain the following elements:

The brain undergoes substantial development during adulthood. The interconnections between neurons become more complex throughout life, and new neurons are created in certain parts of the brain during adulthood.

*Neuroplasticity*—the process whereby the brain continually reorganizes itself.

*Neurogenesis*—the creation of new neurons during adulthood.

Treatment of nervous system disorders—stem cells may be used in the treatment of Parkinson's disease and spinal cord injuries. This work is controversial, however, because the main source of stem cells is human embryos. It is possible, though, that stem cells may be used from adult sources like bone marrow.

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Understanding

Difficulty: Medium

Learning Objective: LO 11 Define neuroplasticity and recognize when it is evident in brains.

Page: 73-74

Topic: Neuroplasticity

262. Define the cerebral cortex. Draw a simple diagram of the brain. Label the brain's lobes on your drawing and briefly identify the function of each lobe.

Ans: Cerebral cortex—the wrinkled, outermost layer of the cerebrum, responsible for higher mental functions.

Usually, the front of the brain will be at the left of the diagram. This portion should be labeled the frontal lobe. The parietal and temporal lobes should be in the center of the brain diagram, with the parietal lobe above the temporal lobe. Finally, the rear portion of the brain should be labeled the occipital lobe.

Functions:

Frontal—higher-level cognitive functions, like thinking and planning; personality characteristics.

Parietal—touch, temperature information.

Temporal—hearing; language comprehension.

Occipital—visual processing.

APA 2.0: 1.2;

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Feature: Infographic 2.4

Learning Objective: LO 13 Identify the lobes of the cortex and explain their functions.

Page: 79-80

Topic: The Cortex: A Peek Beneath the Skull

263. Name two structures in the limbic system. For each structure you name, write a brief case study of an individual demonstrating the effects of damage to the structure.

Ans: Two of these structures should be mentioned: amygdala, hippocampus, thalamus, and hypothalamus.

Vignettes will vary but should focus on deficits in these functions:

Amygdala—emotion

Hippocampus—memory

Thalamus—sensory processing

Hypothalamus—homeostasis; regulation of sleep/wake cycles, sexual arousal, and appetite

APA 2.0: 1.2; 1.3

APA Outcome: 1.2; 4.2

Bloom's Taxonomy: Applying

Difficulty: Medium

Feature: Figure 2.10 The Limbic System

Learning Objective: LO 15 Distinguish the structures and functions of the limbic system.

Page: 84-85

Topic: Digging Below the Cortex

264. Describe the cerebellum and identify its function. Identify two brainstem structures and describe their functions.

Ans: The cerebellum sits behind the brainstem; it looks like a small version of the brain itself.

The cerebellum primarily controls body balance and coordinates movement, but it also influences such higher cognitive processes as reasoning and language production.

Two of the following structures should be mentioned and described:

Medulla—regulates breathing and heart rate.

Pons—regulates sleep; coordinates movement between the right and left sides of the body.

Reticular formation—regulates alertness; produces arousal to outside stimulation and filters out distracting background stimuli.

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Easy

Learning Objective: LO 16 Distinguish the structures and functions of the brainstem and cerebellum.

Page: 85-86

Topic: Digging Below the Cortex

265. Autopsy studies, case studies, and electrical stimulation work in the 19th and 20th centuries helped lay the foundation for the contemporary understanding of brain structure and function. Select three of the following figures and describe their contributions to our knowledge of the brain: (1) Pierre Broca, (2) Karl Wernicke, (3) Wilder Penfield, or (4) Gustav Fritsch and Edvard Hitzig.

Ans:

**Figure**

Pierre Broca

**Contribution**

French surgeon; performed autopsies on two patients who had lost the ability to talk; found damage to the left frontal lobe, a speech-production area now called Broca's area

Karl Wernicke

German doctor; pinpointed role of the left temporal lobe in language comprehension; area now called Wernicke's area

Wilder Penfield

North American neurosurgeon; used electrical stimulation to create a map showing the correspondence between various body parts and points in the somatosensory and motor cortices

Gustav Fritsch and Edvard Hitzig

used electrical stimulation on dogs to show the involvement of the rear frontal lobes—the motor cortex—in producing voluntary movements

APA 2.0: 1.2

APA Outcome: 1.2

Bloom's Taxonomy: Remembering

Difficulty: Medium

Learning Objective: LO 10 Identify areas in the brain responsible for language production and comprehension.; LO 14 Recognize the association areas and identify their functions.

Page: 72; 81-83

Topic: Language and the Left; The Cortex: A Peek Beneath the Skull

