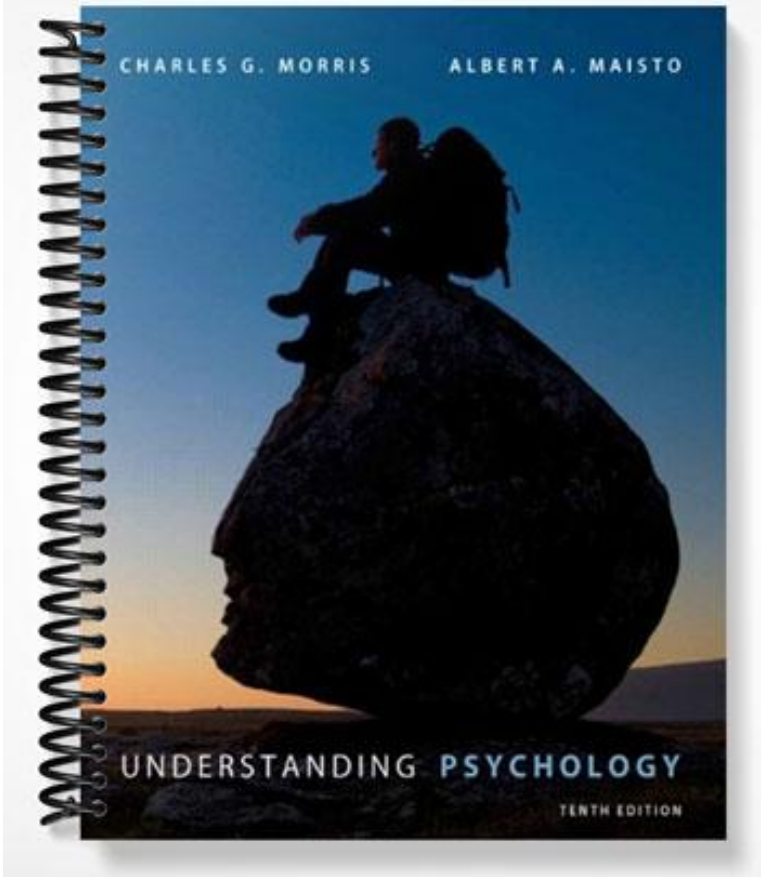
TEST BANK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UNDERSTANDING PSYCHOLOGY
TENTH EDITION

Chapter 2: The Biological Basis of Behavior

Multiple-Choice

1. The human brain has, on average, _____ cells.
a. 100 million
b. 10 billion
c. 1 billion
d. 100 billion

Answer: d
Difficulty: 1
Page Reference: 41
Topic: Introduction
Skill: F

2. In the example of 5-year old Nico presented in your chapter, the young boy had half of his brain surgically removed. Although very unusual, the outcome of this procedure was that Nico _____.
a. retained most of his normal abilities
b. died in the weeks following the surgery
c. regenerated the missing half of his brain
d. was left with permanent disabilities

Answer: a
Difficulty: 3
Page Reference: 41
Topic: Introduction
Skill: F

3. In regards to the brain, the term "plasticity" refers to _____.
a. easily broken or "cracked"
b. ability to adapt to new conditions
c. level of complexity
d. brittleness, or rigidity

Answer: b
Difficulty: 3
Page Reference: 41
Topic: Introduction
Skill: F

4. The field of psychobiology explores the _____.
a. evolution has shaped our instincts, drives, urges, and needs
b. biological foundations of behavior and mental processes.
c. our mental state affects our physical health
d. behavioral patterns affect biological development

Answer: b
Difficulty: 2
Page Reference: 41
Topic: Introduction
Skill: F

5. Psychobiology overlaps with a much larger disciplinary field called _____, which specifically focuses on the study of the brain and the nervous system.
a. behavioral genetics
b. neuroscience
Correct: *Psychobiology overlaps with neuroscience, which focuses specifically on the brain and the nervous system.*

c. endocrinology
Incorrect: *Endocrinology is the study of the glands and hormones in the body, not the study of the brain and the nervous system.*
d. neuroimmunology

Answer: b
Difficulty: 2
Page Reference: 41
Topic: Introduction
Skill: C

Neurons: The Messengers

Learning Objectives

- Describe a typical neuron. Distinguish between afferent, efferent, and association neurons.
- Describe how neurons transmit information including the concepts of resting potential, polarization, action potential, graded potential, threshold of excitation, and the all-or-none law.
- Describe the parts of the synapse and the role of neurotransmitters in the synapse.
- Explain “neural plasticity” and “neurogenesis.”

6. The smallest unit in the nervous system is called the _____.
a. neuron
b. dendrite
c. axon
d. nerve

Answer: a
Difficulty: 1 4 yr.: 88% r = .10; 2 yr.: 86% r = .28
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

7. There are approximately _____ neurons in the brain of an average human being.
a. 100 trillion
b. 100 billion
c. 100 million
d. 100 thousand

Answer: b
Difficulty: 2
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

8. The brain of the average human being contains approximately 100 billion _____.
a. neurons
b. lobes
c. glands
d. nerves

Answer: a
Difficulty: 1
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

9. The part of a neuron which contains the nucleus and has a complete set of the neuron's chromosomes and genes is the _____.
a. cell membrane
b. axon
c. dendrite
d. cell body

Answer: d
Difficulty: 2
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

10. The cell body is enclosed by the _____.
a. dendrite
b. myelin sheath
c. cell membrane
d. axon

Answer: c
Difficulty: 1
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

11. The short fibers that extend from the cell body, allowing it to receive messages from other neurons are _____.
a. dendrites
b. synapses
c. axons
d. nerve bundles

Answer: a
Difficulty: 1
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

12. The function of the neuron's dendrite is to _____.
a. receive messages from neighboring neurons
Correct: *Dendrites are like antennae, in that they are there to receive information.*
b. regulate the neuron's life processes
c. insulate against leakage of electrical impulses
d. conduct electrical impulses toward other neurons
Incorrect: *Axons, not dendrites, are responsible for taking messages toward other neurons.*

Answer: a
Difficulty: 1
Page Reference: 42
Topic: Neurons: The Messengers
Skill: C

13. The part of the neuron that carries outgoing messages either to another neuron or to a muscle or gland is the _____.
a. cell body
b. dendrite
c. axon
d. myelin sheath

Answer: c
Difficulty: 2
Page Reference: 42

Topic: Neurons: The Messengers
Skill: F

14. The function of the neuron's axon is to _____.
a. conduct electrical electrochemical impulses toward other neurons, muscles, or glands
Correct: *The axon takes messages away from the cell body toward other neurons, muscles, or glands.*
b. receive messages from neighboring neurons
Incorrect: *The part of the neuron responsible for receiving incoming messages is a dendrite.*
c. regulate the neuron's life processes
d. insulate against leakage of electrical impulses

Answer: a
Difficulty: 1
Page Reference: 42
Topic: Neurons: The Messengers
Skill: C

15. The length of an axon can range from 1 or 2 millimeters all the way up to up to _____ feet.
a. two
b. three
c. four
d. five

Answer: b
Difficulty: 2
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

16. Each neuron has _____ axon(s).
a. one
b. two
c. four
d. eight

Answer: a
Difficulty: 1
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

17. Neurons typically have _____.
a. many axons and one dendrite
b. one axon and many dendrites
c. one axon and one dendrite
d. many axons and many dendrites

Answer: b
Difficulty: 1
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

18. A group of axons bundled together is called a _____.
a. nerve
b. synaptic vesicle
c. primary cluster
d. myelinated pathway

Answer: a
Difficulty: 2
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

19. A group of axons bundled together is called a _____.
a. myelinated pathway
b. synaptic vesicle
Incorrect: *A synaptic vesicle is a pocket that stores neurotransmitters, and is found in the terminal buttons at the end of an axon.*
c. primary cluster
d. tract
Correct: *A tract is another term for a nerve, which refers to a group of axons that are bundled together.*

Answer: d
Difficulty: 2
Page Reference: 42
Topic: Neurons: The Messengers
Skill: C

20. A nerve is really a(n) _____.
a. cell nucleus
b. group of axons bundled together
c. group of dendrites bundled together
d. afferent neuron

Answer: b
Difficulty: 2 4 yr.: 89% r = .27
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

21. A nerve is a group of _____ bundled together.
a. dendrites
b. axons
c. glial cells
d. interneurons

Answer: b
Difficulty: 2
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

22. A nerve is composed of _____.
a. a bundle of synapses
b. elongated glial cells
c. a bundle of axons
d. a neuron and its synapses

Answer: c
Difficulty: 2
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

23. Within a neuron, information always flows from _____.

a. axon to cell body to dendrite
b. cell body to dendrite to axon
c. cell body to axon to dendrite
d. dendrite to cell body to axon

Answer: d
Difficulty: 3 4 yr.: 69% r = .28; 4 yr.: 76% r = .29
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

24. The white, fatty covering that surrounds some axons is _____.
a. the myelin sheath
b. the cell membrane
c. the synaptic cleft
d. glial tissue

Answer: a
Difficulty: 1
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

25. The primary purpose of the myelin sheath is to _____.
a. insulate the neuron so it can transmit information more efficiently
Correct: *The myelin sheath protects and insulates the neuron, and helps to speed up the process of neural communication.*
b. receive messages from outside the neuron and carry them to the cell nucleus
c. provide a place for neural respiration and cell metabolism to occur
d. provide a soft covering to hold axons in place
Incorrect: *While the myelin is a covering that surrounds the axon, it is not there to hold the axon in a particular place.*

Answer: a
Difficulty: 3
Page Reference: 42
Topic: Neurons: The Messengers
Skill: C

26. The term “white matter” refers to _____.
a. white blood cells
b. neurons and unmyelinated axons
c. interneurons
d. glial cells and myelinated axons

Answer: d
Difficulty: 3
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

27. The term “gray matter” refers to _____.
a. interneurons
b. myelinated axons
c. unmyelinated axons
d. glial cells

Answer: c
Difficulty: 3
Page Reference: 42
Topic: Neurons: The Messengers

Skill: F

28. Terminal buttons are located _____.
a. at the end of the axon
b. in the cell body
c. at the end of the dendrite
d. in the nodes of the myelin sheath

Answer: a
Difficulty: 1
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

29. Terminal buttons release chemicals called _____.
a. hormones
b. neurotransmitters
c. antibodies
d. antigens

Answer: b
Difficulty: 1
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

30. The myelin sheath _____ of neural messages.
a. increases the speed
b. redirects the flow
c. lessens the speed
d. blocks the flow

Answer: a
Difficulty: 2
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

31. Neurons that collect messages from sense organs and carry those messages to the spinal cord or the brain are called _____.
a. motor neurons
b. primary neurons
c. sensory neurons
d. interneurons

Answer: c
Difficulty: 3
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

32. Neurons that collect messages from sense organs and carry those messages to the spinal cord or the brain are called _____ neurons.
a. association
b. afferent
c. primary
d. efferent

Answer: b
Difficulty: 3

Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

33. Neurons that carry messages from the spinal cord or the brain to the muscles and glands are called _____.
a. primary neurons
b. motor neurons
c. sensory neurons
d. interneurons

Answer: b
Difficulty: 3
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

34. Neurons that carry messages from the spinal cord or the brain to the muscles and glands are called _____ neurons.
a. efferent
b. afferent
c. association
d. primary

Answer: a
Difficulty: 3
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

35. Neurons that carry messages from one neuron to another are called _____ neurons.
a. efferent
b. afferent
c. association
d. primary

Answer: c
Difficulty: 3
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

36. Neurons that carry messages from one neuron to another are called _____.
a. efferent neurons
b. afferent neurons
c. interneurons
d. primary neurons

Answer: c
Difficulty: 3
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

37. Cells that form the myelin sheath are called _____.
a. adipose tissues
b. interactive neurons
c. epidermal cells
d. glial cells

Answer: d
Difficulty: 3
Page Reference: 43
Topic: Neurons: The Messengers
Skill: F

38. You are a cell in the human nervous system. Your primary function is to provide support for neurons, hold them together, and help remove waste products and other substances, which could otherwise harm them. You are a(n) _____ cell.
a. adipose
Incorrect: *These functions are carried out by glial cells, not by adipose cells.*
b. epidermal
c. glial
Correct: *Glial cells perform all of these functions, and are also the substance that make up the myelin sheath.*
d. lymph

Answer: c
Difficulty: 2
Page Reference: 43
Topic: Neurons: The Messengers
Skill: A

39. Recent evidence suggests that glial cells and astrocytes may play an important role in _____.
a. learning and memory
b. endocrine functioning
c. maturation and aging
d. growth and metabolic regulation

Answer: a
Difficulty: 3
Page Reference: 43
Topic: Neurons: The Messengers
Skill: F

40. The language used by neurons to communicate _____.
a. involves simple "yes-no," "on-off" electrochemical impulses
Correct: *This is sometimes referred to as the "all or none" principle.*
b. is not yet known, despite years of research
c. is extremely flexible and complex, similar to human spoken language
d. involves neurons transitioning from one of four different electrochemical states to another
Incorrect. *Neurons really only have two "solid" states, on or off.*

Answer: a
Difficulty: 1
Page Reference: 44
Topic: Neurons: The Messengers
Skill: C

41. Electrically charged particles found both inside and outside the neuron are _____.
a. ions
b. free radicals
c. nodes
d. follicles

Answer: a
Difficulty: 2
Page Reference: 44
Topic: Neurons: The Messengers
Skill: F

42. A resting potential is the electrical charge across a neural membrane when _____ ions concentrate on the outside and _____ ions concentrate on the inside.
a. excess positive; excess negative
b. not enough negative; excess positive
c. excess negative; excess positive
d. not enough positive; excess negative

Answer: a
Difficulty: 3
Page Reference: 44
Topic: Neurons: The Messengers
Skill: F

43. During its resting state, the electrical charge inside the neuron is _____ the electrical charge outside the neuron.
a. smaller than
b. positive compared to
c. negative compared to
d. larger than

Answer: c
Difficulty: 2
Page Reference: 44
Topic: Neurons: The Messengers
Skill: F

44. An electrical charge occurs across the neural membrane when positive ions concentrate on the outside and negative ions concentrate on the inside, is known as _____.
a. the resting potential
b. flux
c. depolarization
d. the action potential

Answer: a
Difficulty: 3
Page Reference: 44
Topic: Neurons: The Messengers
Skill: F

45. Organisms or fluids attempting to enter the cell body of a neuron must first pass through the _____.
a. cell membrane
Correct: *The cell membrane is a semi-permeable barrier that surrounds the neuron's cell body.*
b. dendrite
c. axon
d. myelin sheath
Incorrect: *The myelin sheath surrounds the neuron's axon, not the cell body.*

Answer: a
Difficulty: 2
Page Reference: 44
Topic: Neurons: The Messengers
Skill: C

46. When the electrical charge inside a neuron is negative in relation to the outside, the neuron is said to be in a state of _____.
a. shock
b. polarization
c. equilibrium

d. depolarization

Answer: b
Difficulty: 2
Page Reference: 44
Topic: Neurons: The Messengers
Skill: F

47. When a neuron is polarized, _____.
a. both positive and negative ions are concentrated inside the neural membrane
b. positive ions are concentrated outside the neural membrane while negative ions are concentrated inside the membrane
c. negative ions are concentrated outside the neural membrane while positive ions are concentrated inside the membrane
d. both positive and negative ions are concentrated outside the neural membrane

Answer: b
Difficulty: 2
Page Reference: 44
Topic: Neurons: The Messengers
Skill: F

48. When a neuron is polarized, _____.
a. it cannot fire
b. the electrical charge inside is positive relative to the outside
c. sodium ions pass freely through the cell membrane
d. the electrical charge inside is negative relative to the outside

Answer: d
Difficulty: 2
Page Reference: 44
Topic: Neurons: The Messengers
Skill: F

49. When sodium ions flow into a neuron and depolarize it, they create _____.
a. an action potential
Correct: *The action potential is caused by a depolarization resulting from the influx of sodium ions through the neuron's cellular membrane.*
b. breakdown of the cell nucleus
c. a relative refractory period
Incorrect: *A refractory period refers to a period after an action potential when another action potential is more difficult to achieve.*
d. internal combustion

Answer: a
Difficulty: 2 4 yr.: 84% r = .31
Page Reference: 44
Topic: Neurons: The Messengers
Skill: C

50. When enough sodium atoms have entered the neuron to make the inside positively charged relative to the outside, the neuron is said to be _____.
a. depolarized
Correct: *The changing of overall electrical potential from a negative to a positive state is called depolarization.*
b. resting
c. diffusing
d. polarized
Incorrect: *A polarized state exists when the inside of the neuron has a negative charge compared to the outside of the neuron.*

Answer: a

Difficulty: 2
Page Reference: 44
Topic: Neurons: The Messengers
Skill: C

51. Another term for a neural impulse is a(n) _____ potential.
a. resting
b. kinetic
c. graded
d. action

Answer: d
Difficulty: 2
Page Reference: 44
Topic: Neurons: The Messengers
Skill: F

52. The process by which a neuron is depolarized in a surge running down the length of an axon is called a(n)_____ potential.
a. action
b. graded
c. kinetic
d. resting

Answer: a
Difficulty: 3
Page Reference: 44
Topic: Neurons: The Messengers
Skill: F

53. When sodium ions flow into a neuron and depolarize it, we say the neuron has _____.
a. reached equilibrium
Incorrect: *A depolarization does not indicate a state of equilibrium, but rather a firing of a neural impulse.*
b. been neutralized
c. refracted
d. fired
Correct: *Another way of saying this is that the neuron has experienced an action potential, which can be thought of as its "firing" state.*

Answer: d
Difficulty: 1 2 yr.: 81% r = .11
Page Reference: 44
Topic: Neurons: The Messengers
Skill: C

54. Which of the following statements is true?
a. A neuron fires in response to every message it receives.
b. Signals above the threshold of excitation will prevent a neuron from firing.
c. Impulses in myelinated neurons may reach speeds of nearly 400 feet per second.
d. The strength (intensity) of a neuron's action potential depends on the strength of its excitation.

Answer: c
Difficulty: 2
Page Reference: 44
Topic: Neurons: The Messengers
Skill: F

55. If an incoming message is not strong enough to cause a neuron to fire, it may cause a shift in the electrical charge of just a tiny area of the neuron. This shift, which quickly fades away, is called a(n) _____.
a. resting potential
b. action potential
Incorrect: *An action potential refers to a state where a neuron has already fired, while graded potentials are usually not adequate to cause a neural impulse on their own.*
c. transitional polarization
d. graded potential
Correct: *The sum of many graded potentials are what usually cause a neuron to fire, not a single graded potential from one other neuron.*

Answer: d
Difficulty: 3
Page Reference: 45
Topic: Neurons: The Messengers
Skill: C

56. A neuron will fire _____.
a. in response to every impulse it receives
b. only when the incoming message is stronger than the neuron's threshold of excitation
c. only when the incoming messages are weaker than the neuron's threshold of excitation
d. only when it receives two incoming messages at the same time

Answer: b
Difficulty: 1 4 yr.: 81% r = .51; 4 yr.: 81% r = .28
Page Reference: 45
Topic: Neurons: The Messengers
Skill: F

57. The level a neural impulse must exceed to cause a neuron to fire is called the _____.
a. threshold of excitation
b. kinetic potential
c. kinetic ceiling
d. polarization limit

Answer: a
Difficulty: 1
Page Reference: 45-46
Topic: Neurons: The Messengers
Skill: F

58. A frog muscle is stimulated with an electric current but the muscle doesn't twitch. This probably happens because _____.
a. ionic balance has been restored
b. the synapses are underactive
c. the threshold of excitation was not reached
Correct: *The threshold of excitation must be reached or exceeded for a neuron to respond.*
d. the graded potential is too great
Incorrect: *If the graded potential is "too great," then the neuron will fire. If the muscle doesn't twitch, than the graded potential is too weak.*

Answer: c
Difficulty: 2
Page Reference: 45-46
Topic: Neurons: The Messengers
Skill: A

59. "Depolarization," "absolute refractory period," and "threshold of excitation" are terms that apply most directly to _____.
a. brain wave patterns (EEGs)

b. neural synapses
Incorrect: *Synapses refer to microscopic gaps that separate two different neurons. These terms do not apply to synapses.*
c. computerized axial tomography
d. action potentials
Correct: *These are all terms that apply to the neural impulse, also called the action potential.*

Answer: d
Difficulty: 1
Page Reference: 44-46
Topic: Neurons: The Messengers
Skill: C

60. Which of the following is NOT true of neural impulses?
a. The incoming message must be above a certain threshold to cause a neural impulse.
b. The neuron fires in response to every impulse it receives.
c. Neural impulses travel at speeds ranging from 3 feet per second to 400 feet per second.
d. The neuron may fire during the relative refractory period.

Answer: b
Difficulty: 1
Page Reference: 44-46
Topic: Neurons: The Messengers
Skill: F

61. The "all or none law" is the principle stating that _____.
a. a neuron fires at full strength or not at all
b. all neurons in an area fire at the same intensity or not at all
c. a neuron must be receiving only "fire" messages through its dendrites or it will not fire at all
d. all the neurons in a particular area of the brain fire simultaneously or not at all

Answer: a
Difficulty: 2
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

62. The "all or none law" refers to the fact that _____.
a. all the dendrites on a neuron must receive messages telling the neuron to fire or it will not fire at all
b. all the neurons in a particular area of the brain fire simultaneously or not at all
c. a neuron fires at full strength or not at all
d. all the neurons in a single nerve fire simultaneously or not at all

Answer: c
Difficulty: 2 4 yr.: 97% r = .27
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

63. A teacher grading papers opens the door of the room in which she has been working and becomes aware of loud rock music coming from her son's radio. When she asks him to turn it off, he asks why she is just noticing it now when he's had it on for over 20 minutes. Which of the following psychological explanations is the *least* plausible explanation of what occurred after she opened the door?
a. The volume of the music reached the threshold needed to fire her neurons.
b. The number of neurons firing increased considerably, bringing the music to her conscious awareness.
Incorrect: *The increase in stimulation causes more neurons to fire, and to fire more rapidly. If these are sensory neurons, the teacher will suddenly become aware of the stimulus.*
c. The neurons involved began to fire more quickly than they had before.

d. The strength of the neural impulses in each of the firing neurons increased markedly, bringing the music to her conscious awareness.
Correct: *The strength of a neural impulse is a fixed event. It does not change in response to an increase in a stimulus.*

Answer: d
Difficulty: 3
Page Reference: 46
Topic: Neurons: The Messengers
Skill: A

64. A young man is taking an important test in a large room. He is progressing nicely when, about ten minutes into the exam, the proctor opens the window and he becomes distracted by the noise of the traffic outside. Which of the following psychological explanations is the *least* plausible explanation for what occurred when the window was opened?
a. The neurons involved went into their absolute refractory period.
Correct: *The absolute refractory period does not explain why he suddenly became aware of a stimulus. It refers to a period when an action potential cannot be generated following a neural impulse.*
b. The volume of the traffic sounds reached the threshold needed to fire many of his neurons.
Incorrect: *The increase in volume causing the threshold of excitation to be exceeded would be a good explanation for this event.*
c. The number of neurons firing increased considerably, bringing the noise of the traffic into his conscious awareness.
d. The neurons involved began to fire more quickly than they had before.

Answer: a
Difficulty: 3 4 yr.: 53% r = .22
Page Reference: 46
Topic: Neurons: The Messengers
Skill: A

65. The cell membrane of a neuron is _____.
a. completely permeable
b. translucent
c. semipermeable
d. impermeable

Answer: c
Difficulty: 3
Page Reference: 45
Topic: Neurons: The Messengers
Skill: F

66. A neuron is likely to fire _____ when stimulated by a strong signal.
a. in a coded sequence
b. for a longer period of time
c. more often
d. more intensely

Answer: c
Difficulty: 3
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

67. Which of the following is true of neural impulses in a single neuron?
a. The strength of the neural impulse decreases as the strength of the incoming message increases.
b. The neuron may fire during the absolute refractory period.

c. The strength of the neural impulse increases as the strength of the incoming message increases.
d. The strength of the neural impulse is the same each time the neuron fires.

Answer: d
Difficulty: 2 2 yr.: 53% r = .21
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

68. Which of the following statements is true of the activity of neurons?
a. The nerve impulse fades in strength as it travels through the neuron.
b. The size and speed of the action potential is the same for a particular axon regardless of the strength of the stimulus that sets it off.
c. Transmission of information at synapses occurs by means of direct physical contact between the nerve cells.
d. None of the above are true.

Answer: b
Difficulty: 3 4 yr.: 73% r = .14
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

69. Immediately after firing, a neuron cannot fire again no matter how strong the incoming messages may be. This period is called the _____ period.
a. relative refractory
b. primary refractory
c. polarization
d. absolute refractory

Answer: d
Difficulty: 3
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

70. The period after firing in which a neuron is returning to its normal polarized state and will fire again only if the incoming message is extremely powerful is the _____ period.
a. absolute refractory
b. relative refractory
c. recovery
d. secondary refractory

Answer: b
Difficulty: 3
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

71. How can the nervous system represent increases in the intensity of a stimulus?
a. By increasing the number of neurons firing and the frequency of firing in each neuron.
Correct: *When a stimulus is stronger, it can cause more neurons to fire, and to fire at an accelerated rate.*
b. Only by an increase in the number of neurons being fired.
c. Only by an increase in the frequency of firing in each neuron.
d. Only by an increase in the size of the action potential in each neuron that fires.
Incorrect: *The action potential of each neuron is a fixed event. It does not get stronger in response to a stronger stimulus.*

Answer: a

Difficulty: 3 4 yr.: 72% r = .22
Page Reference: 46
Topic: Neurons: The Messengers
Skill: C

72. The tiny space between the axon terminal of one neuron and the dendrite of another neuron is called the _____.
a. synaptic cleft
b. synaptic knob
c. synaptic vesicle
d. synapse

Answer: a
Difficulty: 1 4 yr.: 83% r = .32; 4 yr.: 86% r = .19
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

73. The entire area composed of the axon terminal of one neuron, the synaptic cleft, and the dendrite or cell body of the next neuron is called the _____.
a. synapse
b. synaptic knob
c. synaptic vesicle
d. synaptic space

Answer: a
Difficulty: 2 2 yr.: 81% r = .34
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

74. The action potential causes neurotransmitters to be released into the _____.
a. cell membrane
b. synaptic space
c. axon
d. myelin sheath

Answer: b
Difficulty: 1
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

75. At the end of each branch of an axon, there is a tiny swelling called a _____.
a. synaptic knob
b. receptor site
c. synaptic vesicle
d. synaptic cleft

Answer: a
Difficulty: 1
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

76. At the end of each branch of an axon, there is a tiny knob called the _____.
a. synaptic cleft
b. receptor site
c. terminal button
d. synaptic vesicle

Answer: c
Difficulty: 1
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

77. Tiny sacs in a synaptic knob that release chemicals into the synapse are called _____.
a. synaptic nodes
b. synaptic knobs
c. synaptic vesicles
d. synaptic clefts

Answer: c
Difficulty: 2
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

78. When a neural impulse reaches the end of an axon, it causes tiny oval sacs at the end of the axon to release chemicals called _____.
a. hormones
b. neurotransmitters
c. antioxidants
d. electrolytes

Answer: b
Difficulty: 1
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

79. Chemicals released by the synaptic vesicles that travel across the synaptic space and affect adjacent neurons are called _____.
a. pathogens
b. androgens
c. neurotransmitters
d. ions

Answer: c
Difficulty: 1
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

80. The term "neurotransmitter" refers to _____.
a. the DNA contained in the nucleus of every neuron
b. the chemical substance which is produced when a nerve impulse moves through the cell body of a neuron
c. a chemical released from the axon terminal into the synapse
Correct: *Neurotransmitters send, or "transmit," a message from one neuron to another.*
d. any one of a number of chemical compounds that increases the activity of the endocrine system
Incorrect: *Chemicals that increase (or decrease) functioning of the endocrine system are hormones, not neurotransmitters.*

Answer: c
Difficulty: 1
Page Reference: 46
Topic: Neurons: The Messengers
Skill: C

81. When a neural impulse crosses the synaptic space, it does so _____.
a. via direct contact between the axon and the dendrite
Incorrect: *Neurons do not come into contact with each other, but are separated by a microscopic gap called a synaptic space.*
b. through some, as yet, unknown process
c. through chemicals
Correct: *Messages are sent from one neuron to another by chemicals called neurotransmitters.*
d. like an electric spark

Answer: c
Difficulty: 1
Page Reference: 46
Topic: Neurons: The Messengers
Skill: C

82. Locations on a neuron into which a specific neurotransmitter fits like a key into a lock are called _____.
a. response terminals
b. neural chiasms
c. receptor sites
d. synaptic vesicles

Answer: c
Difficulty: 2
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

83. _____ plays a critical role as a transmitter where neurons meet skeletal muscles.
a. Serotonin
b. Endorphin
c. Acetylcholine
d. Dopamine

Answer: c
Difficulty: 3
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

84. An elderly male is diagnosed as having Alzheimer's disease. His physician tells him the disorder involves a deficiency of _____.
a. acetylcholine
Correct: *Alzheimer's disease has been linked to a deficit of acetylcholine (ACh) in the brain.*
b. serotonin
c. norepinephrine
d. dopamine
Incorrect: *There is no current research that has found an association between dopamine and Alzheimer's disease.*

Answer: a
Difficulty: 2
Page Reference: 46
Topic: Neurons: The Messengers
Skill: A

85. Which of the following neurotransmitters is *most* like a "master key" that opens many locks and attaches to as many as a dozen receptor sites?
a. dopamine

Incorrect: *Dopamine is related to several functions, but the correct answer is serotonin.*
b. norepinephrine
c. acetylcholine
d. serotonin
Correct: *Serotonin is a neurotransmitter that appears to be involved in many functions, and this is sometimes thought of as a master key.*

Answer: d
Difficulty: 1
Page Reference: 46
Topic: Neurons: The Messengers
Skill: C

86. The neurotransmitter known as the "mood molecule" is _____.
a. dopamine
b. norepinephrine
Incorrect: *The correct answer is serotonin, not norepinephrine.*
c. acetylcholine
d. serotonin
Correct: *Serotonin is known as a mood molecule because if its implication in many mood-related disorders.*

Answer: d
Difficulty: 2
Page Reference: 46
Topic: Neurons: The Messengers
Skill: C

87. Which of the following is *not* true of all neurotransmitters?
a. They are released into the synaptic cleft.
b. They are stored in synaptic vesicles.
c. They increase the likelihood that the next neuron will fire.
Correct: *Some neurotransmitters are inhibitors of neural firing, which means that they prevent a neuron from generating an action potential.*
d. They are chemicals.
Incorrect: *All neurotransmitters are chemicals that send messages from one neuron to another.*

Answer: c
Difficulty: 2 4 yr.: 66% r = .18; 2 yr.: 61% r = .16
Page Reference: 47-48
Topic: Neurons: The Messengers
Skill: C

88. An elderly person with Parkinson's disease is *most* likely to have a problem with which of the following neurotransmitters?
a. dopamine
Correct: *A deficit of dopamine is associated with Parkinson's disease, while an excess is associated with schizophrenia.*
b. serotonin
c. acetylcholine
Incorrect: *Acetylcholine is associated with Alzheimer's disease, not Parkinson's disease.*
d. norepinephrine

Answer: a
Difficulty: 2 4 yr.: 50% r = .23
Page Reference: 47
Topic: Neurons: The Messengers
Skill: A

89. Which of the following neurotransmitters is known for its role in schizophrenia and Parkinson's disease?

a. norepinephrine
b. serotonin
c. dopamine
d. acetylcholine

Answer: c
Difficulty: 2
Page Reference: 47-48
Topic: Neurons: The Messengers
Skill: F

90. Which of the following is *not* true of all neurotransmitters?
a. They are released into the synaptic space.
b. They are chemicals.
c. They either increase or decrease the likelihood the next neuron will fire.
Incorrect: *There are both inhibitory and excitatory neurotransmitters that communicate messages between neurons.*
d. They are destroyed by chemicals in the synapse.
Correct: *Some neurotransmitters are metabolized by enzymes in the synapse, but this is not true of all neurotransmitters.*

Answer: d
Difficulty: 2 4 yr.: 88% r = .26
Page Reference: 48
Topic: Neurons: The Messengers
Skill: C

91. Endorphins _____.
a. are less powerful than enkaphalins
b. reduce pain messages in the brain
c. are radically different in function from neurotransmitters
d. are found where neurons meet skeletal muscles

Answer: b
Difficulty: 1 4 yr.: 86% r = .22; 2 yr.: 78% r = .39
Page Reference: 47-48
Topic: Neurons: The Messengers
Skill: F

92. Pain-reducing chemicals that occur naturally in the brain are called _____.
a. androgens
b. endorphins
c. histamines
d. globulins

Answer: b
Difficulty: 1
Page Reference: 47-48
Topic: Neurons: The Messengers
Skill: F

93. One painkilling drug that locks into the same receptor sites as endorphins is _____.
a. barbiturates
b. neuroleptics
c. beta-blockers
d. morphine

Answer: d
Difficulty: 1
Page Reference: 48
Topic: Neurons: The Messengers

Skill: F

94. Because they have similar chemical structures, morphine and other narcotics are able to lock into receptor sites for _____.
a. dopamine
b. serotonin
c. endorphins
d. acetylcholine

Answer: c
Difficulty: 1 4 yr.: 85% r = .14; 2 yr.: 88% r = .23
Page Reference: 48
Topic: Neurons: The Messengers
Skill: F

95. A middle-aged person who is depressed *most* likely has a problem with which of the following neurotransmitters?
a. serotonin
Correct: *Hypoactive serotonin levels have been found to be associated with the symptoms of depression.*
b. GABA
Incorrect: *Your text does not discuss gamma aminobutyric acid as having a role in mood disorders.*
c. dopamine
d. acetylcholine

Answer: a
Difficulty: 2
Page Reference: 46-48
Topic: Neurons: The Messengers
Skill: A

96. Depression is linked to an _____.
a. oversupply of serotonin and an undersupply of norepinephrine
b. undersupply of serotonin and an oversupply of norepinephrine
c. undersupply of serotonin and norepinephrine
d. oversupply of serotonin and norepinephrine

Answer: c
Difficulty: 2
Page Reference: 48
Topic: Neurons: The Messengers
Skill: F

97. A person with schizophrenia is *most* likely to have a problem with which of the following neurotransmitters?
a. norepinephrine
b. acetylcholine
c. dopamine
Correct: *Excesses of dopamine in the brain are associated with the psychotic symptoms of schizophrenia.*
d. serotonin
Incorrect: *Serotonin has been implicated in both anxiety and mood disorders, but has not been shown to be related to schizophrenia.*

Answer: c
Difficulty: 2 4 yr.: 29% r = .20
Page Reference: 47- 48
Topic: Neurons: The Messengers
Skill: A

98. The ability of the brain to change in response to experience is called _____.
a. neural plasmosis
b. reticular formation
c. neurogenesis
d. neural plasticity

Answer: d
Difficulty: 1
Page Reference: 48
Topic: Neurons: The Messengers
Skill: F

99. M. R. Rosenzweig examined rats by studying the _____.
a. behavioral effects of lesions in different parts of their brains
b. sexual orientation effects of prenatal exposure to maternal hormones
c. effects on their brains of electrical stimulation to the frontal and parietal lobes
d. effects on their brains of exposure to impoverished or enriched environments

Answer: d
Difficulty: 3
Page Reference: 48
Topic: Neurons: The Messengers
Skill: F

100. Rosenzweig's study found that when compared to rats raised in an impoverished environment, rats raised in an enriched environment had _____ neurons with _____ synaptic connections.
a. smaller; more
b. larger; more
c. smaller; fewer
d. larger; fewer

Answer: b
Difficulty: 3
Page Reference: 48
Topic: Neurons: The Messengers
Skill: F

101. In recent research, Rosenweig found that a stimulating environment results in larger neurons with more synaptic connections _____.
a. in rats of any age
b. only in infant rats
c. only in adolescent rats
d. only in mature rats

Answer: a
Difficulty: 3
Page Reference: 48
Topic: Neurons: The Messengers
Skill: F

102. Each of the following is true *except* _____.
a. the brains of female mammals change in response to hormonal changes that occur during pregnancy
b. experience causes changes in the strength of communication across synapses
c. in deaf people, an area of the brain usually responsible for hearing rewires itself to read lips and sign language
d. plasticity in the brain is limited to changes that affect only motor behaviors

Answer: d

Difficulty: 3
Page Reference: 48, 50
Topic: Neurons: The Messengers
Skill: F

103. The toxin produced by the micro-organism that causes botulism prevents the release of _____.
a. dopamine
b. acetylcholine
c. endorphins
d. serotonin

Answer: b
Difficulty: 3
Page Reference: 49
Topic: Box: Applying Psychology: Drugs and Behavior
Skill: F

104. Antipsychotic medications help reduce schizophrenic hallucinations by _____.
a. preventing dopamine from binding to receptor sites
b. helping dopamine bind to receptor sites
c. stimulating the release of dopamine
d. preventing the release of dopamine

Answer: a
Difficulty: 2
Page Reference: 49
Topic: Box: Applying Psychology: Drugs and Behavior
Skill: F

105. The poison of the black widow spider works by causing an outpouring of _____.
a. endorphins
b. acetylcholine
c. serotonin
d. dopamine

Answer: b
Difficulty: 2
Page Reference: 49
Topic: Box: Applying Psychology: Drugs and Behavior
Skill: F

106. Caffeine arouses people by blocking the receptors for _____.
a. norepinephrine
b. thyroxin
c. adenosine
d. acetylcholine

Answer: c
Difficulty: 2
Page Reference: 49
Topic: Box: Applying Psychology: Drugs and Behavior
Skill: F

107. After drinking several cups of strong coffee, a person develops “coffee nerves” or “jitters.” This probably is due to the ability of caffeine to _____.
a. block adenosine receptor sites
Correct: *Caffeine blocks the receptor sites for adenosine, which in turn leads to the release of stimulating neurotransmitters such as epinephrine.*
b. cause neurotransmitters to leak out of the synaptic vesicles and be destroyed by enzymes

c. cause an increase in the release of excitatory neurotransmitters
Incorrect: *Caffeine does not directly cause an increase in excitatory neurotransmitters. In fact, it blocks the depression of such mechanisms.*
d. inhibit enzymes which break down excitatory neurotransmitters

Answer: a
Difficulty: 3
Page Reference: 49
Topic: Box: Applying Psychology: Drugs and Behavior
Skill: A

108. Despite its dangers, a young man continues to take cocaine because of the feelings of euphoria it produces for him. This powerful arousal of his nervous system is probably due to cocaine's ability to _____.
a. inhibit enzymes that break down neurotransmitters
b. block the receptor sites for neurotransmitters
c. increase the release of neurotransmitters
Incorrect: *Cocaine does not increase the release of neurotransmitters; rather, it blocks their reabsorption by the neuron that released them.*
d. prevent neurotransmitters from being reabsorbed into the synaptic vesicles
Correct: *The lack of reabsorption, or reuptake, of neurotransmitters causes a stimulated euphoric feeling.*

Answer: d
Difficulty: 3
Page Reference: 49
Topic: Box: Applying Psychology: Drugs and Behavior
Skill: A

109. Undifferentiated precursor cells that, under the right conditions, can give rise to any specialized cell in the body are called _____ cells.
a. stem
b. receptor
c. glial
d. T-cells

Answer: a
Difficulty: 2
Page Reference: 50
Topic: Neurons: The Messengers
Skill: F

110. Before birth, human embryos have a large supply of cells known as _____ cells, which are capable of becoming neurons.
a. Schwann
b. glial
c. mast
d. stem

Answer: d
Difficulty: 1
Page Reference: 50
Topic: Neurons: The Messengers
Skill: F

111. In tests with animals, stem cells transplanted into a brain or spinal cord _____.
a. functioned for a while, but slowly died off
b. died almost immediately
c. survived but did not function or replace damaged cells
d. migrated to damaged areas and began to generate specialized neurons for replacement

Answer: d
Difficulty: 2
Page Reference: 50
Topic: Neurons: The Messengers
Skill: F

112. In research with human patients suffering from Parkinson's disease, fetal nerve cell transplants _____.
a. resulted in only sporadic, temporary improvements in motor control
b. improved motor control for periods of only 1 to 4 years
c. improved motor control for periods of 5 to 10 years
d. resulted in no improvement in motor control

Answer: c
Difficulty: 2
Page Reference: 50
Topic: Neurons: The Messengers
Skill: F

113. Research on human brain tissue has found that human brains are _____.
a. capable of neurogenesis only during early childhood
b. capable of neurogenesis only through adolescence
c. capable of neurogenesis even in adulthood
d. not capable of neurogenesis after birth

Answer: c
Difficulty: 3
Page Reference: 50
Topic: Neurons: The Messengers
Skill: F

The Central Nervous System

Learning Objectives

- Identify the parts of the brain and their function. Explain what is meant by "hemispheric specialization" and the functional differences between the two cerebral hemispheres.
- Discuss how microelectrode techniques, macroelectrode techniques, structural imaging, and functional imaging provide information about the brain.
- Explain how the spinal cord works.

114. The nervous system is comprised of two major parts - the _____.
a. central nervous system and the peripheral nervous system
b. brain and the spinal cord
c. afferent nervous system and the efferent nervous system
d. sympathetic nervous system and the parasympathetic nervous system

Answer: a
Difficulty: 1 2 yr.: 73% r = .29
Page Reference: 52
Topic: The Central Nervous System
Skill: F

115. The two main components of the human nervous system are the _____ nervous system and the _____ nervous system.
a. central; peripheral
b. spinal; endocrine
c. sympathetic; parasympathetic
d. somatic; autonomic

Answer: a
Difficulty: 1 4 yr.: 93% r = .17
Page Reference: 52
Topic: The Central Nervous System
Skill: F

116. The division of the nervous system that consists of the brain and spinal cord is the _____ system.
a. peripheral nervous
b. primary nervous
c. endocrine
d. central nervous

Answer: d
Difficulty: 1
Page Reference: 52
Topic: The Central Nervous System
Skill: F

117. The central nervous system contains about _____ percent of the body's neurons.
a. 70
b. 10
c. 30
d. 90

Answer: d
Difficulty: 2
Page Reference: 52
Topic: The Central Nervous System
Skill: F

118. The brain and spinal cord contain about _____ percent of the body's neurons.
a. 40
b. 65
c. 15
d. 90

Answer: d
Difficulty: 2
Page Reference: 52
Topic: The Central Nervous System
Skill: F

119. The peripheral nervous system contains about _____ percent of the body's neurons.
a. 70
b. 10
c. 30
d. 90

Answer: b
Difficulty: 3
Page Reference: 52
Topic: The Central Nervous System
Skill: F

120. The division of the nervous system that connects the brain and spinal cord to the rest of the body is the _____ system.
a. central nervous
b. endocrine
c. peripheral nervous

d. secondary nervous

Answer: c
Difficulty: 1
Page Reference: 52
Topic: The Central Nervous System
Skill: F

121. The central nervous system consists of _____.
a. the brain and spinal cord
b. muscles and glands
c. sense organs and sensory neurons
d. the parasympathetic and sympathetic divisions

Answer: a
Difficulty: 1 4 yr.: 83% r = .25
Page Reference: 52
Topic: The Central Nervous System
Skill: F

122. The central nervous system consists of _____.
a. all the nerves in the center of the body that take messages from the environment and send them to the brain and spinal cord
b. the somatic and autonomic nervous systems
c. the sympathetic and parasympathetic divisions, which control the inner or central part of the body
d. the brain and the spinal cord

Answer: d
Difficulty: 1
Page Reference: 52
Topic: The Central Nervous System
Skill: F

123. All nerve cells and fibers that are *not* in the brain or spinal cord make up the _____ nervous system.
a. sympathetic
b. autonomic
c. central
Incorrect: *The central nervous system consists of the brain and the spinal cord.*
d. peripheral
Correct: *The brain and spinal cord are the central nervous system. All nervous tissue anywhere else in the body is the peripheral nervous system.*

Answer: d
Difficulty: 2
Page Reference: 52
Topic: The Central Nervous System
Skill: C

124. The brain can be divided into _____ layers that evolved in different stages of evolution.
a. four
b. two
c. five
d. three

Answer: d
Difficulty: 1
Page Reference: 52
Topic: The Central Nervous System
Skill: F

125. Which of the following is *not* one of the layers of the brain that evolved in different stages of evolution?
a. the central core
b. the executive core
c. the limbic system
d. the cerebral hemispheres

Answer: b
Difficulty: 2
Page Reference: 52
Topic: The Central Nervous System
Skill: F

126. At the point where the spinal cord enters the skull, it becomes the _____.
a. forebrain
b. midbrain
c. limbic system
d. hindbrain

Answer: d
Difficulty: 2
Page Reference: 52
Topic: The Central Nervous System
Skill: F

127. The _____ is believed to be the earliest part of the brain to evolve.
a. midbrain
b. hindbrain
Correct: *The hindbrain controls our basic, primitive functions, yet it is essential to our survival.*
c. forebrain
Incorrect: *This is the most recent level of brain development in human beings.*
d. limbic system

Answer: b
Difficulty: 2
Page Reference: 52
Topic: The Central Nervous System
Skill: C

128. The part of the brain containing the medulla, the pons, and the cerebellum is the _____.
a. cortex
Incorrect: *The cerebral cortex is part of the forebrain, while these three structures are located in the hindbrain.*
b. corpus callosum
c. hindbrain
Correct: *These structures are part of the primitive hindbrain.*
d. limbic system

Answer: c
Difficulty: 3
Page Reference: 52-53
Topic: The Central Nervous System
Skill: C

129. The part of the hindbrain that controls such functions as breathing, heart rate, and blood pressure is the _____.
a. cerebral cortex
b. medulla
c. cerebellum

d. pons

Answer: b
Difficulty: 2 4 yr.: 79% r = .33; 4 yr.: 84% r = .40
Page Reference: 53
Topic: The Central Nervous System
Skill: F

130. The point at which the nerves from the left side of the body cross over into the right side of the brain, and vice versa, is the _____.
a. amygdala
b. pons
c. cerebellum
d. medulla

Answer: d
Difficulty: 3
Page Reference: 53
Topic: The Central Nervous System
Skill: F

131. A college student is having difficulty staying awake during the day and sleeping through the night. Her difficulties are *most* likely due to problems in the _____.
a. cerebellum
Incorrect: *The cerebellum is part of the hindbrain, like the pons, but it is not responsible for regulating our sleep-wake cycle.*
b. basal ganglia
c. pons
Correct: *The pons is the part of the hindbrain that regulates our sleep-wake cycle.*
d. substantia nigra

Answer: c
Difficulty: 2 2 yr.: 75% r = .32
Page Reference: 53
Topic: The Central Nervous System
Skill: A

132. The part of the hindbrain sometimes called the “little brain” is the _____.
a. cerebellum
b. cerebrum
c. medulla
d. limbic system

Answer: a
Difficulty: 1
Page Reference: 53
Topic: The Central Nervous System
Skill: F

133. A young woman recovering from a blow to her head finds she has great difficulty maintaining her balance and coordinating her movements. Injury to which part of her brain is likely to be causing her difficulties?
a. cerebral cortex
b. cerebellum
Correct: *The cerebellum is responsible for helping to coordinate fine motor control and balance.*
c. medulla
Incorrect: *The medulla is responsible for essential functions like breathing and regulating blood pressure, not for balance and motor control.*
d. thalamus

Answer: b

Difficulty: 2 4 yr.: 51% r = .42
Page Reference: 53-54
Topic: The Central Nervous System
Skill: A

134. The _____ is located to the rear of the brain stem; it coordinates certain reflexes and controls balance.
a. limbic system
b. cerebellum
c. medulla
d. cerebrum

Answer: b
Difficulty: 2
Page Reference: 53-54
Topic: The Central Nervous System
Skill: F

135. Susan has a degenerative disease that causes her to lose her balance easily and to move in a jerky and uncoordinated way. She cannot drink from a glass without spilling it or touch her toes without falling over. This disease is probably affecting her _____.
a. hypothalamus
Incorrect: *The hypothalamus is indeed important for many kinds of drives, including sex and hunger, but it is not related to coordination and balance*.
b. cerebellum
Correct: *The cerebellum is the part of the hindbrain that helps control balance and coordination.*
c. midbrain
d. reticular formation

Answer: b
Difficulty: 2
Page Reference: 53-54
Topic: The Central Nervous System
Skill: A

136. The cerebellum _____.
a. controls blood pressure
b. relays messages from the sensory receptors
c. coordinates actions so that movements are efficient
d. is involved in emotional behavior

Answer: c
Difficulty: 2 4 yr.: 61% r = .28; 2 yr.: 64% r = .38
Page Reference: 53-54
Topic: The Central Nervous System
Skill: F

137. The part of the hindbrain involved in emotional control, attention, memory, and coordinating sensory information is the _____.
a. cerebrum
b. midbrain
c. medulla
d. cerebellum

Answer: d
Difficulty: 2
Page Reference: 54
Topic: The Central Nervous System
Skill: F

138. The part of the brain where pain is registered and which is important in hearing and sight is the _____.
a. reticular formation
b. medulla
c. hypothalamus
d. midbrain

Answer: d
Difficulty: 3
Page Reference: 54
Topic: The Central Nervous System
Skill: F

139. The midbrain is largely involved in each of the following functions *except* _____.
a. hearing
b. perception of pain
c. regulation of hunger and thirst
d. sight

Answer: c
Difficulty: 2
Page Reference: 54
Topic: The Central Nervous System
Skill: F

140. The structure directly over the brain stem that relays and translates sensory information is the _____.
a. thalamus
b. amygdala
c. hypothalamus
d. hippocampus

Answer: a
Difficulty: 2
Page Reference: 54
Topic: The Central Nervous System
Skill: F

141. The part of the brain that acts as a switchboard or relay station, sending incoming messages to the appropriate areas of the brain, is the _____.
a. thalamus
b. pons
c. medulla
d. hypothalamus

Answer: a
Difficulty: 2
Page Reference: 54
Topic: The Central Nervous System
Skill: F

142. The part of the brain that acts like a "thermostat," regulating hunger, thirst, sexual drive, and body temperature, is the _____.
a. thalamus
b. amygdala
c. hypothalamus
d. hippocampus

Answer: c
Difficulty: 2

Page Reference: 54
Topic: The Central Nervous System
Skill: F

143. The part of the brain responsible for emotional behavior such as experiencing rage, terror, or pleasure is the _____.
a. amygdala
b. hippocampus
c. thalamus
d. hypothalamus

Answer: d
Difficulty: 3 4 yr.: 54% r = .37; 4 yr.: 64% r = .10
Page Reference: 54
Topic: The Central Nervous System
Skill: F

144. Eating, drinking, sexual behavior, sleeping, and temperature control are most strongly influenced by the _____.
a. medulla
b. pons
c. hypothalamus
d. amygdala

Answer: c
Difficulty: 2 4 yr.: 83% r = .31; 4 yr.: 87% r = .20
Page Reference: 54
Topic: The Central Nervous System
Skill: F

145. Garfield is having great difficulty controlling his appetite. All he wants to do is eat, and no matter how much he eats, he is still hungry. His weight is approaching 400 pounds and he still constantly wants to eat. His physician says the problem is due to a disorder in a specific center of the brain. That brain center is *most* likely to be the _____.
a. hippocampus
Incorrect: *The hippocampus plays an important role in memory and certain emotions, but is not involved in the regulation of hunger*.
b. hypothalamus
Correct: *The hypothalamus controls, among other functions, our hunger drive.*
c. thalamus
d. amygdala

Answer: b
Difficulty: 2
Page Reference: 54
Topic: The Central Nervous System
Skill: A

146. After his last class, Carlos went out to his car to get some books to return to the library. He found that during the day someone had badly smashed his rear bumper. He was furious and began pounding on the hood and shouting obscenities. What area of the brain was guiding his behavior?
a. the hypothalamus
Correct: *The hypothalamus controls many functions, and has been found to regulate emotions including rage, terror, and pleasure.*
b. the medulla
Incorrect: *The medulla may have helped increase Carlos's blood pressure, circulation, and respiration, but it was not directly responsible for Carlos's rage behavior.*
c. the thalamus
d. the midbrain

Answer: a
Difficulty: 2 2 yr.: 70% r = .35
Page Reference: 54
Topic: The Central Nervous System
Skill: A

147. Darlene just found out that she made the dean's list, and she's in ecstasy -- singing and dancing down the hallway near her dorm room. Which area of the brain is directing her emotional reaction?
a. the hypothalamus
Correct: *The hypothalamus controls many functions, and has been found to regulate emotions including rage, terror, and pleasure.*
b. the reticular formation
c. the cingulate gyrus
d. the thalamus
Incorrect: *The thalamus may have helped Darlene dance around without falling over, but it did not inspire her emotional reaction of pleasure.*

Answer: a
Difficulty: 2
Page Reference: 54
Topic: The Central Nervous System
Skill: A

148. The network of neurons in the hindbrain, midbrain, and part of the forebrain whose primary function is to alert and arouse the higher parts of the brain is the _____.
a. endocrine system
b. temporal lobe
c. limbic system
d. reticular formation

Answer: d
Difficulty: 3
Page Reference: 54
Topic: The Central Nervous System
Skill: F

149. The part of the brain that sends “alert” messages to the higher brain structures is the _____.
a. endocrine system
b. temporal lobe
c. limbic system
d. reticular formation

Answer: d
Difficulty: 2
Page Reference: 54
Topic: The Central Nervous System
Skill: F

150. Anesthetics work primarily by shutting down the _____.
a. endocrine system
b. reticular formation
c. limbic system
d. dopamine receptor sites

Answer: b
Difficulty: 2
Page Reference: 54
Topic: The Central Nervous System
Skill: F

151. Permanent damage to the reticular formation can cause _____.
a. a coma
b. problems with equilibrium
c. nightmares
d. hyperactive behavior

Answer: a
Difficulty: 3
Page Reference: 54
Topic: The Central Nervous System
Skill: F

152. The part of the brain most people think of when they talk about the brain is the _____.
a. pons
b. medulla
c. cerebellum
d. cerebrum

Answer: d
Difficulty: 1
Page Reference: 54
Topic: The Central Nervous System
Skill: F

153. The outer surface of the two cerebral hemispheres that regulate most complex behavior is called the _____.
a. cerebral cortex
b. cerebellum
c. corpus callosum
d. substantia nigra

Answer: a
Difficulty: 3
Page Reference: 54
Topic: The Central Nervous System
Skill: F

154. The most recent part of the nervous system to evolve is the _____.
a. cerebellum
b. cerebral cortex
c. limbic system
d. midbrain

Answer: b
Difficulty: 1 4 yr.: 70% r = .31; 2 yr.: 61% r = .14
Page Reference: 54
Topic: The Central Nervous System
Skill: F

155. The cerebral cortex contains about _____ percent of the neurons in the human central nervous system.
a. 30
b. 50
c. 90
d. 70

Answer: d
Difficulty: 2
Page Reference: 54

Topic: The Central Nervous System
Skill: F

156. The cerebral cortex accounts for about _____ percent of the weight of the human brain.
a. 20
b. 60
c. 80
d. 40

Answer: c
Difficulty: 1
Page Reference: 54
Topic: The Central Nervous System
Skill: F

157. The intricate network of folds that line the outer surface of the cerebral cortex, allowing it to fit inside the skull, are called _____.
a. convolutions
b. sensory projection areas
c. association areas
d. motor projections

Answer: a
Difficulty: 1 4 yr.: 39% r = .30
Page Reference: 54
Topic: The Central Nervous System
Skill: F

158. The association areas are to _____ as the cerebellum is to _____.
a. interconnection between hemispheres; aggressive behavior
b. thinking; motor coordination
Correct: *The association areas are part of the cerebrum and help us think about sensory input and motor output. The cerebellum helps to regulate balance and motor coordination.*
c. temperature regulation; motor coordination
Incorrect: *The association areas are not involved with temperature regulation, even though the cerebellum does help to regulate balance and motor coordination.*
d. precise perception; aggressive behavior

Answer: b
Difficulty: 3
Page Reference: 54
Topic: The Central Nervous System
Skill: C

159. Incoming messages are combined into meaningful impressions in the _____ areas.
a. motor projection
b. association
c. convolution
d. sensory projection

Answer: b
Difficulty: 1 4 yr.: 48% r = .29
Page Reference: 54
Topic: The Central Nervous System
Skill: F

160. Messages from separate senses are combined and integrated in the _____.
a. motor projection areas
b. midbrain
c. association areas

d. sensory projection areas

Answer: c
Difficulty: 2
Page Reference: 54
Topic: The Central Nervous System
Skill: F

161. The _____ lobe accounts for about one-half the volume of the human brain.
a. temporal
b. frontal
c. occipital
d. parietal

Answer: b
Difficulty: 1
Page Reference: 54
Topic: The Central Nervous System
Skill: F

162. The lobe of the brain that serves as the "executive control center" for the brain is the _____ lobe.
a. occipital
b. frontal
c. parietal
d. temporal

Answer: b
Difficulty: 2
Page Reference: 54
Topic: The Central Nervous System
Skill: F

163. The primary motor cortex is located in the _____ lobe.
a. frontal
b. parietal
c. occipital
d. temporal

Answer: a
Difficulty: 2
Page Reference: 54
Topic: The Central Nervous System
Skill: F

164. The lobe of the cerebral cortex that receives and coordinates messages from the other three lobes of the cortex is the _____ lobe.
a. parietal
b. temporal
c. occipital
d. frontal

Answer: d
Difficulty: 2
Page Reference: 54
Topic: The Central Nervous System
Skill: F

165. The section of the frontal lobe responsible for voluntary movement is the _____.
a. primary motor cortex

Correct: *The primary motor cortex sends messages to glands and muscles. Some of those messages are related to voluntary movement.*
b. association areas
Incorrect: *The association areas are responsible for interpreting various types of sensory input, not controlling voluntary movement.*
c. primary somatosensory cortex
d. sensory projection areas

Answer: a
Difficulty: 1
Page Reference: 54
Topic: The Central Nervous System
Skill: C

166. The lobe of the brain most involved in motivation, persistence, emotional responses, character, and moral decision making is the _____ lobe.
a. occipital
b. parietal
c. frontal
d. temporal

Answer: c
Difficulty: 2
Page Reference: 54
Topic: The Central Nervous System
Skill: F

167. Messages from the brain to the various muscles and glands in the body begin their journey in the _____.
a. primary motor cortex
b. sensory projection areas
c. primary somatosensory cortex
d. association areas

Answer: a
Difficulty: 3
Page Reference: 55
Topic: The Central Nervous System
Skill: F

168. Phineas Gage was a foreman on a railroad crew who suffered brain damage in a blasting accident. After the accident, he lost interest in his job and had difficulty maintaining any goal-directed behaviors. He seemed apathetic and capable of only shallow emotions. The damaged part of his brain was probably the _____ lobe.
a. parietal
Incorrect: *The frontal lobe controls the functions that were impaired in Gage after his accident.*
b. temporal
c. occipital
d. frontal
Correct: *The frontal lobe is responsible for many of these functions. In the case of Gage, emotional regulation was severely impaired by damage to his frontal lobe.*

Answer: d
Difficulty: 1 4 yr.: 94% r = .24
Page Reference: 55
Topic: The Central Nervous System
Skill: A

169. After an industrial accident in which George fell from a scaffold and hit his head, he has had trouble following directions or completing his normal work tasks. He is also apathetic,

although he has periods of boastfulness and silliness. The damaged part of his brain is probably the _____ lobes.
a. occipital
Incorrect: *The symptoms George experienced are consistent with damage to the frontal, not the occipital, lobe.*
b. parietal
c. temporal
d. frontal
Correct: *George's symptoms are similar to those of Phineas Gage, who probably suffered severe damage to his frontal lobe and suffered from the same symptoms.*

Answer: d
Difficulty: 1
Page Reference: 55
Topic: The Central Nervous System
Skill: A

170. Loss of motivation and ability to concentrate is the major outcome of damage to the _____ lobe.
a. occipital
b. parietal
c. temporal
d. frontal

Answer: d
Difficulty: 2
Page Reference: 55
Topic: The Central Nervous System
Skill: F

171. The part of the brain that receives and interprets visual information is the _____ lobe.
a. frontal
b. temporal
Incorrect: *The temporal lobe, located at the sides of the brain, is responsible for processing auditory information.*
c. occipital
Correct: *The occipital lobe, located at the back of the brain, is responsible for processing visual information.*
d. parietal

Answer: c
Difficulty: 2
Page Reference: 56
Topic: The Central Nervous System
Skill: C

172. After a head injury a person reports that she is unable to see, although her eyes are uninjured. A doctor would suspect an injury in the _____ lobe.
a. occipital
Correct: *The occipital lobe, located at the back of the brain, is responsible for processing visual information.*
b. parietal
c. frontal
d. temporal
Incorrect: *The temporal lobe, located at the sides of the brain, is responsible for processing auditory information.*

Answer: a
Difficulty: 2
Page Reference: 56
Topic: The Central Nervous System
Skill: A

173. The part of the cerebral cortex that receives sensory information from throughout the body from sense receptors in the skin, muscles, joints and internal organs is the _____ lobe.
a. parietal
b. frontal
c. occipital
d. temporal

Answer: a
Difficulty: 2
Page Reference: 56
Topic: The Central Nervous System
Skill: F

174. Corey was in an automobile accident that resulted in an injury to her brain. She now has difficulty reading road maps and telling other people how to get somewhere. She has most likely suffered an injury to her _____ lobe.
a. occipital
Incorrect: *The occipital lobe is responsible for visual perception, but spatial skills like those that are impaired in Corey are controlled in the parietal lobe of the cerebrum.*
b. temporal
c. frontal
d. parietal
Correct: *Spatial recognition skills, like reading a map and following/giving directions, are controlled in the parietal lobe of the cerebrum.*

Answer: d
Difficulty: 3
Page Reference: 56
Topic: The Central Nervous System
Skill: A

175. Messages from the sense receptors are registered in those areas of the brain called the _____.
a. hemispheric lateralization areas
b. primary somatosensory cortex
c. motor projection areas
d. association areas

Answer: b
Difficulty: 2
Page Reference: 56
Topic: The Central Nervous System
Skill: F

176. The primary somatosensory cortex is located in the _____ lobe.
a. temporal
b. frontal
c. parietal
d. occipital

Answer: c
Difficulty: 2
Page Reference: 56
Topic: The Central Nervous System
Skill: F

177. Corey was in an automobile accident that resulted in an injury to her brain. She now has difficulty maintaining her balance and normal body positions. Her ability to understand and

comprehend language has also been injured. The part of her brain *most* likely injured was her _____ lobe.
a. parietal
b. temporal
Correct: *These important functions, including language comprehension, are most significantly controlled in the temporal lobe of the cerebrum.*
c. occipital
d. frontal
Incorrect: *The frontal lobe plays some part in language comprehension, but the temporal lobe is the best answer.*

Answer: b
Difficulty: 3
Page Reference: 56
Topic: The Central Nervous System
Skill: A

178. Corey was in an automobile accident that resulted in an injury to her brain. She now has difficulty with her hearing and her ability to recognize faces. The part of her brain *most* likely injured was her _____ lobe.
a. frontal
Incorrect: *The frontal lobes control many different functions in the brain, but facial recognition and auditory reception are handled by the temporal lobes.*
b. temporal
Correct: *Facial recognition and auditory reception are controlled by the temporal lobes of the cerebrum.*
c. occipital
d. parietal

Answer: b
Difficulty: 2 4 yr.: 76% r = .45
Page Reference: 56
Topic: The Central Nervous System
Skill: A

179. The part of the brain that helps regulate hearing, balance and equilibrium, certain emotions and motivation, and recognizing faces is the _____ lobe.
a. parietal
b. temporal
c. frontal
d. occipital

Answer: b
Difficulty: 1
Page Reference: 56
Topic: The Central Nervous System
Skill: F

180. The lobe of the brain that regulates emotions and motivations such as anxiety, pleasure, and anger is the _____ lobe.
a. occipital
b. frontal
c. parietal
d. temporal

Answer: d
Difficulty: 3
Page Reference: 56
Topic: The Central Nervous System
Skill: F

181. The limbic system is fully developed only in _____.

a. mammals and reptiles
b. vertebrates
c. reptiles
d. mammals

Answer: d
Difficulty: 1
Page Reference: 57
Topic: The Central Nervous System
Skill: F

182. The loosely connected ring of structures between the central core and the cerebral hemispheres that control emotion and is involved in the formation of new memories is the _____.
a. endocrine system
b. limbic system
Correct: *The limbic system is sometimes referred to as our "emotional control center," and contains structures like the hippocampus that are important in memory.*
c. reticular formation
Incorrect: *The reticular formation, generally thought to be part of the midbrain, is not involved in emotional control or the formation of new memories.*
d. pons

Answer: b
Difficulty: 1
Page Reference: 57
Topic: The Central Nervous System
Skill: C

183. The limbic system is responsible for _____.
a. controlling learning and emotional behavior
b. connecting the brain to the rest of the body
c. filtering incoming messages to the brain
d. fighting disease organisms that attempt to infect the brain

Answer: a
Difficulty: 2
Page Reference: 57
Topic: The Central Nervous System
Skill: F

184. George was in an automobile accident several years ago in which he suffered severe head injuries. Since the mishap, he has been unable to form new memories. He can remember everything he did before the accident but he cannot remember what he just said five minutes ago. The part of George's brain the was injured was probably the _____.
a. reticular formation
b. spinal cord
Incorrect: *The spinal cord, though part of the central nervous system, is not an accurate answer. It has nothing to do with the formation of new memories.*
c. brain stem
d. hippocampus
Correct: *The hippocampus is a part of the limbic system, and is responsible for the formation of new memories.*

Answer: d
Difficulty: 1
Page Reference: 57
Topic: The Central Nervous System
Skill: A

185. The limbic system structures that seem especially important to emotions related to self-preservation and when stimulated cause fear or panic reactions or attack behaviors are the _____.
a. septum and the cingulate gyrus
b. amygdala and the hippocampus
c. hippocampus and the cingulate gyrus
d. reticular formation and the amygdala

Answer: b
Difficulty: 1
Page Reference: 57
Topic: The Central Nervous System
Skill: F

186. Imagine that you believe that increased neural activity in the human limbic system produces increases in aggressive behavior. Which of the following findings would *not* provide support for your theory?
a. The limbic system is stimulated electrically and aggression increases.
b. Portions of the limbic system are destroyed and aggression increases.
Correct: *If the limbic system controls aggressive behavior, than destroying this brain structure would decrease aggression.*
c. A depressant drug is administered to an area of the brain that inhibits the limbic system and aggression increases.
Incorrect: *Depressing the function of a limbic system inhibitor would, in fact, lead to increased aggression.*
d. An area of the brain that inhibits the limbic system is destroyed and aggression increases.

Answer: b
Difficulty: 3 4 yr.: 43% r = .22
Page Reference: 57
Topic: The Central Nervous System
Skill: A

187. Our ability to read the facial expressions of emotion in other people is registered primarily in the _____.
a. corpus callosum
b. limbic system
c. thalamus
d. hypothalamus

Answer: b
Difficulty: 2
Page Reference: 57
Topic: The Central Nervous System
Skill: F

188. The thick bundle of nerves connecting the two cerebral hemispheres which coordinates their activities is the _____.
a. reticular formation
b. corpus callosum
c. substantia nigra
d. caudate nucleus

Answer: b
Difficulty: 1 4 yr.: 78% r = .31; 4 yr.: 93% r = .05; 2 yr.: 81% r = .37
Page Reference: 57
Topic: The Central Nervous System
Skill: F

189. “Split brain” patients are patients who have had _____.
a. their cerebellum split in the middle

b. their brain stem cut down the middle
c. their corpus callosum cut
d. a prefrontal lobotomy

Answer: c
Difficulty: 2 4 yr.: 88% r = .19
Page Reference: 57
Topic: The Central Nervous System
Skill: F

190. A "split-brain" patient is asked to stare at a spot on a screen. When a picture of an object is shown to the *right* of the spot, the patient can _____.
a. pick the object out of a group of hidden objects using her right hand, but cannot identify it verbally
b. identify the object verbally and pick it out of a group of hidden objects using her left hand
Incorrect: *The information in the right side of the right visual field can be identified by the right hand, not the left hand.*
c. identify the object verbally and pick it out of a group of hidden objects using her right hand
Correct: *The information in the right side of the right visual field can be identified by the right hand.*
d. pick the object out of a group of hidden objects using her left hand, but cannot identify it verbally

Answer: c
Difficulty: 3 4 yr.: 28% r = .25
Page Reference: 58-59
Topic: The Central Nervous System
Skill: A

191. A "split brain" patient is asked to stare at a spot on a screen. When a picture of an object is shown to the *left* of the spot, the patient can _____.
a. pick the object out of a group of hidden objects using her right hand, but cannot identify it verbally
b. identify the object verbally and pick it out of a group of hidden objects using her right hand
c. identify the object verbally and pick it out of a group of hidden objects using her left hand
Incorrect: *Verbal identification and physical selection require the functions of both hemispheres. In this case, only the right hemisphere is active so verbal identification would be unlikely.*
d. pick the object out of a group of hidden objects using her left hand, but cannot identify it verbally
Correct: *Most people process verbal recognition of objects in their left hemispheres. This object is processed in the right hemisphere, so it can be picked out physically but not identified verbally.*

Answer: d
Difficulty: 3 4 yr.: 19% r = .15
Page Reference: 58-59
Topic: The Central Nervous System
Skill: A

192. Split-brain patients who are shown objects in such a way that the visual information goes only to the right hemisphere of the brain _____.
a. can name the objects and can point to them with their right hand
b. can neither name the objects nor point to them with their right hand
c. cannot name the objects, but can point to them with their right hand
d. can name the objects, but cannot point to them with their right hand

Answer: c
Difficulty: 3 4 yr.: 82% r = .22 4 yr.: 80% r = .22
Page Reference: 58-59
Topic: The Central Nervous System
Skill: F

193. Split-brain patients who are shown objects in such a way that the visual information goes only to the left hemisphere of the brain _____.
a. cannot name the objects, but can point to them with their left hand
b. can neither name the objects nor point to them with their left hand
c. can name the objects, but cannot point to them with their left hand
d. can name the objects and can point to them with their left hand

Answer: c
Difficulty: 3
Page Reference: 58-59
Topic: The Central Nervous System
Skill: F

194. Which hemisphere of the cerebral cortex is usually dominant in language tasks?
a. the front hemisphere
b. the right hemisphere
c. the rear hemisphere
d. the left hemisphere

Answer: d
Difficulty: 2 4 yr.: 81% r = .24; 2 yr.: 58% r = .30
Page Reference: 59
Topic: The Central Nervous System
Skill: F

195. The fact that language is usually related most closely to the left hemisphere explains why _____.
a. damage to the left hemisphere may cause language disorders
b. the right hemisphere is usually larger than the left
c. the left hemisphere is usually larger than the right
d. stroke victims with paralysis on the left side of the body may have severe speech problems

Answer: a
Difficulty: 1 4 yr.: 50% r = .13
Page Reference: 59
Topic: The Central Nervous System
Skill: F

196. Language is processed primarily in the left hemisphere _____.
a. only in right-handers
b. in the majority of right-handers and left-handers
c. in most right-handers but only a few left-handers
d. only in left-handers

Answer: b
Difficulty: 1
Page Reference: 59
Topic: The Central Nervous System
Skill: F

197. Which hemisphere of the cerebral cortex is usually dominant in spatial tasks?
a. the rear hemisphere
b. the left hemisphere
c. the front hemisphere
d. the right hemisphere

Answer: d
Difficulty: 2 4 yr.: 71% r = .35
Page Reference: 59
Topic: The Central Nervous System

Skill: F

198. A baby is born with an impairment of his left cerebral hemisphere, but it is not discovered until years later, when certain clues are pieced together. Which of the following is *most* likely to be one of those clues?
a. He has difficulty with geometry.
b. He has difficulty perceiving concepts and spatial relationships.
Incorrect: *Spatial skills are usually the responsibility of the right cerebral hemisphere.*
c. He has difficulty learning to read.
Correct: *The left cerebral hemisphere, in most people, is responsible for language abilities, including reading skills.*
d. He has difficulty recognizing people's faces.

Answer: c
Difficulty: 3 2 yr.: 45% r = .34
Page Reference: 59
Topic: The Central Nervous System
Skill: A

199. A baby is born with an impairment of her right cerebral hemisphere, but it is not discovered until years later, when certain clues are pieced together. Which of the following is *least* likely to be one of those clues?
a. She has trouble picking up objects with her left hand.
b. She has trouble understanding the meaning of a story that is read to her.
c. She has difficulty perceiving spatial relationships.
Incorrect: *Spatial skills are usually the responsibility of the right cerebral hemisphere.*
d. She has severe language problems.
Correct: *The left cerebral hemisphere, in most people, is responsible for language abilities, including reading skills.*

Answer: d
Difficulty: 2
Page Reference: 59
Topic: The Central Nervous System
Skill: A

200. Each of the following statements about differences in hemispheric functioning is true *except* _____.
a. normally, the two hemispheres communicate with each other and work together in an integrated, coordinated way
b. differences in the hemispheres appear to be greater in women than in men
c. not everyone shows the same pattern of difference in functioning between the left and right hemispheres
d. both hemispheres have the potential to perform a wide range of tasks

Answer: b
Difficulty: 1
Page Reference: 59
Topic: The Central Nervous System
Skill: F

201. The hemisphere that specializes in holistic processing is the _____ hemisphere.
a. left
b. front
c. right
d. rear

Answer: c
Difficulty: 3
Page Reference: 59
Topic: The Central Nervous System

Skill: F

202. The notion that human language is primarily controlled by the left hemisphere was first set forth by _____.
a. Wernicke
b. Gall
c. Broca
d. Korsakoff

Answer: c
Difficulty: 1
Page Reference: 59
Topic: The Central Nervous System
Skill: F

203. The area of the frontal lobe that is crucial in our ability to talk is _____ area.
a. Gall's
b. Broca's
c. Korsakoff's
d. Wernicke's

Answer: b
Difficulty: 2
Page Reference: 59
Topic: The Central Nervous System
Skill: F

204. The area at the back of the temporal lobe that is crucial in our ability to listen, process, and understand what others are saying is _____ area.
a. Gall's
b. Korsakoff's
c. Broca's
d. Wernicke's

Answer: d
Difficulty: 2
Page Reference: 59
Topic: The Central Nervous System
Skill: F

205. Simply put, Broca's area is important for _____, and Wernicke's area is important for _____.
a. talking; listening
b. listening; talking
c. listening; listening
d. talking; talking

Answer: a
Difficulty: 1
Page Reference: 59
Topic: The Central Nervous System
Skill: F

206. Broca and Wernicke are most well known for studying how the brain processes _____.
a. spatial information
b. pain
c. abstract information
d. language

Answer: d

Difficulty: 2
Page Reference: 59
Topic: The Central Nervous System
Skill: F

207. Language difficulties that often result from strokes or other brain injuries are called _____.
a. anosmias
b. aphasias
c. occlusions
d. hematomas

Answer: b
Difficulty: 1
Page Reference: 59-60
Topic: The Central Nervous System
Skill: F

208. Amy has suffered damage to Broca's area in her brain. She is most likely to exhibit _____ aphasia.
a. expressive
Correct: *Broca's area is essential to our ability to talk, or express ourselves, so damage to this area results in expressive aphasia.*
b. receptive
Incorrect: *Wernicke's area is the part of the brain associated with the reception and comprehension of language. Broca's area deals with expressive language skills.*
c. inclusive
d. occlusive

Answer: a
Difficulty: 2
Page Reference: 60
Topic: The Central Nervous System
Skill: A

209. Amy has suffered damage to Wernicke's area in her brain. She is most likely to exhibit _____ aphasia.
a. inclusive
b. receptive
Correct: *Wernicke's area is the part of the brain associated with the reception and comprehension of language. Damage to this area would result in receptive aphasia.*
c. occlusive
d. expressive
Incorrect: *Broca's area is essential to our ability to talk, or express ourselves, so damage to this area results in expressive aphasia.*

Answer: b
Difficulty: 2
Page Reference: 60
Topic: The Central Nervous System
Skill: A

210. Approximately _____ percent of humans are right-handed.
a. 90
b. 60
c. 80
d. 70

Answer: a
Difficulty: 1
Page Reference: 60

Topic: The Central Nervous System
Skill: F

211. Males are _____ likely than females to be left-handed.
a. much less
b. slightly more
c. much more
d. slightly less

Answer: b
Difficulty: 2
Page Reference: 60
Topic: The Central Nervous System
Skill: F

212. _____ techniques are used to study the functions of single neurons.
a. Structural imaging
b. Macroelectrode
c. Microelectrode
d. Functional imaging

Answer: c
Difficulty: 2
Page Reference: 61
Topic: The Central Nervous System
Skill: F

213. A technique in which a tiny quartz or glass pipette (smaller in diameter than a human hair) that is filled with conducting fluid and placed on the surface of a neuron so that scientists can study changes in the electrical conditions of that particular neuron is called _____.
a. structural imaging
b. a macroelectrode technique
c. a microelectrode recording technique
d. functional imaging

Answer: c
Difficulty: 1
Page Reference: 61
Topic: The Central Nervous System
Skill: F

214. Microelectrode techniques are used to _____.
a. study overall activity in particular regions of the brain
b. study single neurons
c. observe neural activity as it reacts to sensory stimuli
d. map structures in the living brain

Answer: b
Difficulty: 2
Page Reference: 61
Topic: The Central Nervous System
Skill: F

215. _____ techniques are used to obtain an overall picture of activity in particular regions of the brain.
a. Microelectrode
b. Macroelectrode
c. Functional imaging
d. Structural imaging

Answer: b
Difficulty: 2
Page Reference: 61
Topic: The Central Nervous System
Skill: F

216. Macroelectrode techniques are used to _____.
a. observe neural activity as it reacts to sensory stimuli
b. study single neurons
c. study overall activity in particular regions of the brain
d. map structures in the living brain

Answer: c
Difficulty: 2
Page Reference: 61
Topic: The Central Nervous System
Skill: F

217. Which of the following is a type of macroelectrode technique?
a. CT scanning
b. MEG
c. MRI
d. EEG

Answer: d
Difficulty: 3
Page Reference: 61
Topic: The Central Nervous System
Skill: F

218. If you wanted to measure various brain waves, which of the following techniques should you use?
a. a macroelectrode technique
b. structural imaging
c. a microelectrode technique
d. functional imaging

Answer: a
Difficulty: 3
Page Reference: 61
Topic: The Central Nervous System
Skill: F

219. A technique in which more than two dozen electrodes are placed at important locations on the scalp and they then record the brain's electrical activity in a way that is converted by a computer into colored images on a TV screen and used to detect abnormal cortical activity such as that occurring during an epileptic seizure is _____.
a. magnetoencephalography (MEG)
b. the electroencephalograph (EEG)
c. positron emission tomography (PET) scanning
d. magnetic resonance imaging (MRI)

Answer: b
Difficulty: 3
Page Reference: 61
Topic: The Central Nervous System
Skill: F

220. When brain researchers want to map the structures in a living human brain, they turn to _____.

a. structural imaging
b. macroelectrode techniques
c. functional imaging
d. microelectrode techniques

Answer: a
Difficulty: 2
Page Reference: 61
Topic: The Central Nervous System
Skill: F

221. Structural imaging techniques are used to _____.
a. study overall activity in particular regions of the brain
b. map structures in the living brain
c. study single neurons
d. observe neural activity as it reacts to sensory stimuli

Answer: b
Difficulty: 1
Page Reference: 61
Topic: The Central Nervous System
Skill: F

222. A technique in which an X-ray photography unit rotates around a patient, moving from the top of the head to the bottom, creating a series of images that are combined by a computer to produce pictures of the inner regions of the brain is called _____.
a. magnetic resonance imaging (MRI)
b. computerized axial tomography scanning (CT scanning)
c. magnetic source imaging (MSI)
d. EEG imaging

Answer: b
Difficulty: 3
Page Reference: 61
Topic: The Central Nervous System
Skill: F

223. When brain researchers want to map the structures in a living human brain, they use _____.
a. an EEG
b. MEG or MSI
c. a CAT scan or an MRI
d. EEG imaging

Answer: c
Difficulty: 2
Page Reference: 61-62
Topic: The Central Nervous System
Skill: F

224. Which of the following would provide the best map of physical structures in the brains of living human beings?
a. magnetoencephalography (MEG)
b. positron emission tomography (PET) scanning
c. electroencephalography (EEG) imaging
d. magnetic resonance imaging (MRI)

Answer: d
Difficulty: 1
Page Reference: 61-62
Topic: The Central Nervous System

Skill: F

225. Functional imaging techniques are used to _____.
a. observe the brain's activity as it reacts to sensory stimuli
b. study single neurons
c. study overall activity in particular regions of the brain
d. map structures in the living brain

Answer: a
Difficulty: 2
Page Reference: 62
Topic: The Central Nervous System
Skill: F

226. Each of the following is a functional imaging technique *except* _____.
a. magnetic source imaging (MSI)
b. magnetoencephalogaphy (MEG)
c. magnetic resonance imaging (MRI)
d. positron emission tomography (PET) scanning

Answer: c
Difficulty: 2
Page Reference: 62
Topic: The Central Nervous System
Skill: F

227. A brain imaging technique that uses radioactive energy to map brain activity is _____.
a. magnetic resonance imaging (MRI)
b. magnetic source imaging (MSI)
c. magnetoencephalogaphy (MEG)
d. positron emission tomography (PET) scanning

Answer: d
Difficulty: 1
Page Reference: 62
Topic: The Central Nervous System
Skill: F

228. A brain imaging technique that measures the movement of blood molecules in the brain is _____.
a. magnetic resonance imaging (MRI)
b. magnetoencephalogaphy (MEG)
c. positron emission tomography (PET) scanning
d. functional magnetic resonance imaging (fMRI)

Answer: d
Difficulty: 2
Page Reference: 62
Topic: The Central Nervous System
Skill: F

229. An imaging technique that has been useful in helping researchers discover the biological origins of attention-deficit hyperactivity disorder is _____.
a. magnetoencephalogaphy (MEG)
b. positron emission tomography (PET) scanning
c. functional magnetic resonance imaging (fMRI)
d. magnetic source imaging (MSI)

Answer: c
Difficulty: 3

Page Reference: 63
Topic: The Central Nervous System
Skill: F

230. The cable of nerves that connects the brain to the rest of the body is called the _____.
a. caudate nucleus
b. substantia nigra
c. spinal cord
d. reticular formation

Answer: c
Difficulty: 1 4 yr.: 94% r = .23; 2 yr.: 92% r = .33
Page Reference: 63
Topic: The Central Nervous System
Skill: F

231. The spinal cord is made up of soft, jellylike bundles of long _____.
a. ligaments
b. axons
c. dendrites
d. tendons

Answer: b
Difficulty: 1
Page Reference: 63
Topic: The Central Nervous System
Skill: F

232. The spinal cord contains _____ major neural pathway(s).
a. one
b. two
c. three
d. four

Answer: b
Difficulty: 1
Page Reference: 63
Topic: The Central Nervous System
Skill: F

233. The spinal cord contains each of the following *except* _____.
a. endocrine glands to regulate hormonal functions
b. sensory neurons that carry information from the internal organs to the brain
c. motor neurons that control internal organs and muscles
d. neural circuits that produce reflex movements

Answer: a
Difficulty: 1
Page Reference: 63
Topic: The Central Nervous System
Skill: F

234. When you pull your hand away rapidly after burning it on a hot pan, the sequence of neural activation is _____.
a. motor neurons, interneurons, sensory neurons
b. interneurons, sensory neurons, motor neurons
c. sensory neurons, interneurons, motor neurons
d. sensory neurons, motor neurons, interneurons

Answer: c

Difficulty: 1
Page Reference: 63-64
Topic: The Central Nervous System
Skill: F

235. Allan gingerly puts his fingertips on the hot handle of the skillet in which he's cooking supper, but he instantly pulls his hand away. His reaction is due to the functioning of the _____.
a. medulla
Incorrect: *The medulla would not be involved in the withdrawal reaction to a hot surface.*
b. limbic system
c. spinal cord
Correct: *The spinal cord allows for rapid communication between sensory neurons, interneurons, and motor neurons that allow such a reflex to occur.*
d. hypothalamus

Answer: c
Difficulty: 2
Page Reference: 63-64
Topic: The Central Nervous System
Skill: A

The Peripheral Nervous System

Learning Objectives

- Identify the peripheral nervous system and contrast the functions of the somatic and autonomic nervous systems.
- Explain the differences between the sympathetic and the parasympathetic nervous systems.

236. The _____ nervous system links the brain and spinal cord to the rest of the body.
a. peripheral
b. generic
c. central
d. tertiary

Answer: a
Difficulty: 1
Page Reference: 64
Topic: The Peripheral Nervous System
Skill: F

237. The peripheral nervous system is composed of _____ neurons.
a. neither afferent nor efferent
b. both afferent and efferent
c. afferent, but not efferent
d. efferent, but not afferent

Answer: b
Difficulty: 1
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: F

238. Neurons that carry messages from the sense organs to the spinal cord or the brain are called _____ neurons.
a. afferent
b. sensory
c. inter-

d. efferent

Answer: a
Difficulty: 2
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: F

239. Neurons that carry messages from the spinal cord or the brain to the muscles and glands are called _____ neurons.
a. inter-
b. sensory
c. efferent
d. afferent

Answer: c
Difficulty: 1
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: F

240. A young woman returns from a day at the beach to find she has developed severe sunburn. Which neurons are sending messages from her burned skin to her brain informing her of the pain from the burn?
a. motor neurons
b. interaction neurons
c. afferent neurons
Correct: *Afferent, or sensory, neurons take messages to the central nervous system from the sensory organs.*
d. efferent neurons
Incorrect: *Efferent, or motor, neurons take messages from the central nervous system to muscles and glands.*

Answer: c
Difficulty: 2
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: A

241. Neurons that send messages from the spinal cord to the foot do so through _____ neurons.
a. sensory
b. efferent
c. secondary
d. afferent

Answer: b
Difficulty: 2
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: F

242. A young man reads in a letter that he has just won $1,000 in a statewide lottery and he literally jumps for joy. Which neurons are sending messages from his brain to the muscles in his legs causing him to jump?
a. sensory neurons
b. interactive neurons
c. efferent neurons
Correct: *Efferent, or motor, neurons take messages from the central nervous system to muscles and glands.*
d. afferent neurons

Incorrect: *Afferent, or sensory, neurons take messages to the central nervous system from the sensory organs.*

Answer: c
Difficulty: 1
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: A

243. The peripheral nervous system consists of the _____ and the _____ nervous systems.
a. central; reflex
b. afferent; efferent
c. somatic; autonomic
d. sympathetic; parasympathetic

Answer: c
Difficulty: 1 4 yr.: 41% r = .22; 2 yr.: 53% r = .41
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: F

244. The somatic and autonomic nervous systems are two major divisions of the _____ nervous system.
a. parasympathetic
b. central
c. sympathetic
d. peripheral

Answer: d
Difficulty: 1 4 yr.: 73% r = .48
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: F

245. All the things that we can sense (sights, sounds, smells, temperature, taste, and pressure) have their origins in the _____ nervous system.
a. secondary
b. peripheral
c. central
d. autonomic

Answer: b
Difficulty: 2
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: F

246. Every deliberate action you make, from pedaling a bike to scratching a toe, involves neurons in the _____ nervous system.
a. secondary
b. somatic
c. sympathetic
d. parasympathetic

Answer: b
Difficulty: 2
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: F

247. The _____ nervous system is composed of all the neurons that carry messages between your central nervous system and all of the internal organs of your body.
a. somatic
b. secondary
c. central
d. autonomic

Answer: d
Difficulty: 2
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: F

248. The branch of the autonomic nervous system that prepares the body for quick action in an emergency is the _____ division.
a. sympathetic
b. central
c. secondary
d. parasympathetic

Answer: a
Difficulty: 1
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: F

249. The autonomic nervous system consists of _____.
a. sense organs and sensory neurons
b. the parasympathetic and sympathetic divisions
c. the brain and spinal cord
d. muscles and glands

Answer: b
Difficulty: 2
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: F

250. The sympathetic and parasympathetic divisions are part of the _____ nervous system.
a. autonomic
b. central
c. tertiary
d. somatic

Answer: a
Difficulty: 2
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: F

251. You're walking all alone down a dark street when suddenly you hear a scream and then footsteps coming closer and closer. Your heart begins to pound, you're scared stiff, and you feel like running. Which part of the nervous system causes your body's reaction?
a. the somatic nervous system
Incorrect: *The somatic nervous system generally controls voluntary functions, while the autonomic nervous system controls the automatic functions that are taking place when you are ready to run from a threat like this.*
b. the autonomic nervous system
Correct: *The autonomic nervous system includes the sympathetic branch, which helps to speed our body up in a crisis or emergency.*

c. the midbrain
d. the hippocampus

Answer: b
Difficulty: 2 4 yr.: 72% r = .25
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: A

252. It's midnight and you are alone in your room studying. You hear a loud crash outside your room and your whole body reacts instantly. Your pupils dilate, your heart rate increases, your blood pressure rises, adrenaline surges through your body, and your senses sharpen as you begin anxiously looking for whatever caused the crash. These reactions are produced by the _____.
a. parasympathetic division
Incorrect: *The autonomic nervous system includes the parasympathetic branch, which helps to slow our body back down after a crisis has ended.*
b. central nervous system
c. sympathetic division
Correct: *The autonomic nervous system includes the sympathetic branch, which helps to speed our body up in a crisis or emergency.*
d. somatic nervous system

Answer: c
Difficulty: 2 4 yr.: 69% r = .31; 2 yr.: 83% r = .35
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: A

253. It's midnight and you are alone in your room studying. You hear a loud crash outside your room. Your body instantly reacts to this potential threat as you feel your heart pounding and your senses sharpening. Then you see your lumbering English sheep dog walking around the hallway corner and realize that the crash was undoubtedly from something he knocked over. Recovering from your alarm, your body now relaxes and you return to normal. The body system helping you to return to normal is the _____.
a. somatic nervous system
b. sympathetic division
Incorrect: *The autonomic nervous system includes the sympathetic branch, which helps to speed our body up in a crisis or emergency.*
c. parasympathetic division
Correct: *The autonomic nervous system includes the parasympathetic branch, which helps to slow our body back down after a crisis has ended.*
d. spinal cord

Answer: c
Difficulty: 2
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: A

254. The heavy footsteps on the stairs get closer and closer. Slowly, the door to the bedroom creaks open. As a strange man with a knife in his hand lunges in, you let out an ear-piercing scream. Which of the following most accurately describes your nervous system at this point?
a. Your parasympathetic nervous system is more active than your sympathetic nervous system.
Incorrect: *The parasympathetic nervous system is what decreases and slows our various physiological functions when a crisis or emergency has been resolved.*
b. Neither your sympathetic nor your parasympathetic nervous systems are unusually active.
c. Both your sympathetic and your parasympathetic nervous systems are extremely active.
d. Your sympathetic nervous system is more active than your parasympathetic nervous system.
Correct: *The sympathetic nervous system is what stimulates and activates various physiological functions when we are faced with a crisis or emergency.*

Answer: d

Difficulty: 2 4 yr.: 76% r = .36; 4 yr.: 79% r = .48
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: A

255. The branch of the autonomic nervous system that calms and relaxes the body is the _____ division.
a. parasympathetic
b. secondary
c. sympathetic
d. central

Answer: a
Difficulty: 1
Page Reference: 66
Topic: The Peripheral Nervous System
Skill: F

The Endocrine System

Learning Objective

- Describe the endocrine glands and the way their hormones affect behavior.

256. Regarding the two communication systems that integrate and coordinate behavior, the nervous system and the endocrine system, _____.
a. the nervous system can influence the activity of the hormonal system
b. these systems influence each other's activities
Correct: *The endocrine system is largely under the control of the hypothalamus, which is part of the nervous system.*
c. these systems work independently of one another; one uses neurons, the other the bloodstream
d. the hormonal system can influence the activity of the nervous system
Incorrect: *While this may be correct, it is not the most accurate answer option given.*
Answer: b
Difficulty: 1 4 yr.: 72% r = .17
Page Reference: 66-67
Topic: The Endocrine System
Skill: C

257. The system which coordinates and integrates behavior by secreting chemicals into the bloodstream is called the _____ system.
a. somatic
b. limbic
c. autonomic
d. endocrine

Answer: d
Difficulty: 1
Page Reference: 66-67
Topic: The Endocrine System
Skill: F

258. Chemical substances released by the endocrine glands to help regulate bodily functions are _____.
a. neurotransmitters
b. enzymes
c. antigens
d. hormones

Answer: d

Difficulty: 1
Page Reference: 67
Topic: The Endocrine System
Skill: F

259. The messages in the nervous system are carried through nerves; the messages in the endocrine system are carried through _____.
a. the somatic system
b. the bloodstream
Correct: *Hormones are released directly into the bloodstream, and that is how the impact behaviors.*
c. ducts
d. glands
Incorrect: *Hormones are released by glands, but they are carried through the bloodstream.*

Answer: b
Difficulty: 1 4 yr.: 70% r = .25
Page Reference: 67
Topic: The Endocrine System
Skill: C

260. Endocrine glands are glands that secrete _____.
a. enzymes
b. excitory neurotransmitters
c. hormones
d. inhibitory neurotransmitters

Answer: c
Difficulty: 1
Page Reference: 67
Topic: The Endocrine System
Skill: F

261. The glands that secrete hormones directly into the bloodstream are called _____ glands.
a. hippocampal
b. endocrine
c. lymph
d. exocrine

Answer: b
Difficulty: 1
Page Reference: 67
Topic: The Endocrine System
Skill: F

262. Which of the following statements about the endocrine system is *false*?
a. It plays an important role in the body's response to stressful situations.
b. Its messages stimulate only a limited number of cells at a time.
c. It communicates its messages at a slower speed than the nervous system.
d. It relays information through chemical messengers called hormones.

Answer: b
Difficulty: 2 4 yr.: 67% r = .19; 4 yr.: 68% r = .19; 4 yr.: 65% r = .27
Page Reference: 67
Topic: The Endocrine System
Skill: F

263. The endocrine gland that is often called the “master gland” because it affects the output of the other endocrine glands is the _____ gland.
a. pituitary

Correct: *The pituitary gland is often referred to as the master gland.*
b. pineal
Incorrect: *The pineal gland is important in our sleep functions, but it is not the "master gland."*
c. thyroid
d. adrenal

Answer: a
Difficulty: 1
Page Reference: 67-68
Topic: The Endocrine System
Skill: C

264. The gland that produces the largest number of different hormones and has the widest range of effects on the body's functions is the _____ gland.
a. thyroid
b. pineal
c. adrenal
d. pituitary

Answer: d
Difficulty: 1 4 yr.: 61% r = .24; 2 yr.: 76% r = .23; 2 yr.: 79% r = .47
Page Reference: 67-68
Topic: The Endocrine System
Skill: F

265. Which of the following does not belong biologically with the other four?
a. pineal
b. adrenal cortex
c. thalamus
Correct: *The thalamus is a structure in the brain. The other answers are all endocrine glands.*
d. pituitary
Incorrect: *The pituitary gland is sometimes referred to as the master gland, and it controls the other glands in the body, including the pineal and adrenal glands.*

Answer: c
Difficulty: 2 4 yr.: 80% r = .27
Page Reference: 68
Topic: The Endocrine System
Skill: C

266. The _____ influences blood pressure, thirst, milk production, sexual behavior, and body growth.
a. pancreas
b. thyroid gland
c. pituitary gland
d. pineal gland

Answer: c
Difficulty: 2
Page Reference: 68
Topic: The Endocrine System
Skill: F

267. The hormone melatonin is produced by the _____ gland.
a. pituitary
b. pineal
c. adrenal
d. thyroid

Answer: b
Difficulty: 1

Page Reference: 68
Topic: The Endocrine System
Skill: F

268. The hormone released by the pineal gland that reduces body temperature and prepares you for sleep is _____.
a. HGH
b. parathormone
c. melatonin
d. DHEA

Answer: c
Difficulty: 2
Page Reference: 68
Topic: The Endocrine System
Skill: F

269. The hormone that regulates the body's metabolic rate, affecting people's weight and energy levels, is _____.
a. insulin
b. thyroxin
c. glucagon
d. parathormone

Answer: b
Difficulty: 2 4 yr.: 88% r = .08
Page Reference: 68
Topic: The Endocrine System
Skill: F

270. The endocrine gland located below the voice box that produces the hormone for regulating the body's rate of metabolism is the _____ gland.
a. adrenal
b. thyroid
c. pituitary
d. parathyroid

Answer: b
Difficulty: 2
Page Reference: 68
Topic: The Endocrine System
Skill: F

271. Gloria's friends have recently noticed a startling change in her behavior. She eats everything in sight but gains little, if any, weight. She speeds around the room as if she were taking amphetamines. She seems constantly tense and agitated, and has trouble sleeping. She has become impulsive and lately she seems to be upset by even the slightest stress. The source of Gloria's problems is probably an _____ gland.
a. overactive pituitary
b. overactive thyroid
Correct: *An overactive thyroid (hyperthyroidism) can lead to such symptoms as irritability, insomnia, and difficulty sleeping.*
c. underactive pituitary
d. underactive thyroid
Incorrect: *An underactive thyroid (hypothyroidism) ordinarily leads to fatigue and excessive sleepiness.*

Answer: b
Difficulty: 1
Page Reference: 68
Topic: The Endocrine System

Skill: A

272. Andrew's friends have noticed that lately he sleeps constantly but is always tired and complains of feeling too hot or too cold. Although Andrew had formerly been very athletic, lately his muscle tone has been greatly reduced. The source of Andrew's problem is probably an _____ gland.
a. underactive thyroid
Correct: *An underactive thyroid (hypothyroidism) ordinarily leads to fatigue and excessive sleepiness.*
b. overactive thyroid
Incorrect: *An overactive thyroid (hyperthyroidism) can lead to such symptoms as irritability, insomnia, and difficulty sleeping.*
c. overactive pituitary
d. underactive pituitary

Answer: a
Difficulty: 2 4 yr.: 98% r = .25; 2 yr.: 77% r = .23
Page Reference: 68
Topic: The Endocrine System
Skill: A

273. The four tiny glands that secrete the hormone that controls and balances tissue fluids and levels of calcium and phosphate in the blood are the _____.
a. adrenal glands
b. parathyroid glands
c. lymph glands
d. gonads

Answer: b
Difficulty: 2
Page Reference: 68
Topic: The Endocrine System
Skill: F

274. The two hormones which keep the blood-sugar level properly balanced are _____.
a. growth hormone and ACTH
b. thyroxin and parathormone
c. insulin and glucagon
d. epinephrine and norepinephrine

Answer: c
Difficulty: 1
Page Reference: 68
Topic: The Endocrine System
Skill: F

275. Insulin and glucagon are secreted by the _____.
a. adrenal gland
b. hypothalamus
c. pancreas
d. pituitary gland

Answer: c
Difficulty: 2 2 yr.: 82% r = .31
Page Reference: 68
Topic: The Endocrine System
Skill: F

276. The organ lying between the stomach and small intestine that secretes insulin and glucagon to regulate blood-sugar levels is the _____.

a. kidney
b. liver
c. pancreas
d. adrenal gland

Answer: c
Difficulty: 2
Page Reference: 68
Topic: The Endocrine System
Skill: F

277. Hypoglycemia results from secretion problems in the _____.
a. kidneys
b. thyroid gland
c. pancreas
d. liver

Answer: c
Difficulty: 2
Page Reference: 68
Topic: The Endocrine System
Skill: F

278. Oversecretion of insulin by the pancreas results in _____.
a. cirrhosis
b. diabetes
c. hypoglycemia
d. muscle spasms

Answer: c
Difficulty: 2
Page Reference: 68
Topic: The Endocrine System
Skill: F

279. Undersecretion of insulin by the pancreas results in _____.
a. diabetes
b. cirrhosis
c. hypoglycemia
d. muscle spasms

Answer: a
Difficulty: 2
Page Reference: 68
Topic: The Endocrine System
Skill: F

280. The endocrine glands located just above the kidneys that release hormones important for dealing with stress are the _____.
a. pituitary glands
b. gonads
c. parathyroid glands
d. adrenal glands

Answer: d
Difficulty: 1 4 yr.: 82% r = .38; 2 yr.: 67% r = .29
Page Reference: 68
Topic: The Endocrine System
Skill: F

281. The adrenal glands are important in your body's reaction to _____.
a. digestion
b. pleasurable fantasy
c. sleep
d. stress

Answer: d
Difficulty: 1
Page Reference: 68
Topic: The Endocrine System
Skill: F

282. Each adrenal gland has _____ part(s).
a. one
b. two
c. three
d. four

Answer: b
Difficulty: 1
Page Reference: 68
Topic: The Endocrine System
Skill: F

283. The outer covering of the two adrenal glands that releases hormones important for dealing with stress is the adrenal _____.
a. simplex
b. medulla
c. ganglia
d. cortex

Answer: d
Difficulty: 3
Page Reference: 68
Topic: The Endocrine System
Skill: F

284. The inner core of the two adrenal glands that releases hormones important for dealing with stress is the adrenal _____.
a. simplex
b. cortex
c. medulla
d. ganglia

Answer: c
Difficulty: 3
Page Reference: 68
Topic: The Endocrine System
Skill: F

285. The hormone that activates the sympathetic nervous system causing the heart to beat faster, digestion to stop, the pupils of the eyes to enlarge, and more sugar to flow into the bloodstream is _____.
a. dopamine
b. norepinephrine
c. epinephrine
d. acetylcholine

Answer: c
Difficulty: 1
Page Reference: 68

Topic: The Endocrine System
Skill: F

286. The hormone that causes the anterior pituitary gland to release hormones that prolong responses to stress, thus causing you to remain aroused for some time after extreme emotional excitement is _____.
a. epinephrine
b. acetylcholine
c. norepinephrine
d. dopamine

Answer: c
Difficulty: 2
Page Reference: 68
Topic: The Endocrine System
Skill: F

287. Masculine sex hormones are called _____.
a. androgens
b. endorphins
c. estrogens
d. testosterone

Answer: a
Difficulty: 2
Page Reference: 68
Topic: The Endocrine System
Skill: F

288. Feminine sex hormones are called _____.
a. estrogens
b. androgens
c. enkaphalins
d. endorphins

Answer: a
Difficulty: 1
Page Reference: 68
Topic: The Endocrine System
Skill: F

289. The testes and the ovaries are _____.
a. adrenal glands
b. gonads
c. thyroid glands
d. pineal glands

Answer: b
Difficulty: 1
Page Reference: 68
Topic: The Endocrine System
Skill: F

290. _____ has long been linked to aggressive behavior.
a. Thyroxin
b. Progesterone
c. Testosterone
d. Melatonin

Answer: c

Difficulty: 1
Page Reference: 68
Topic: The Endocrine System
Skill: F

291. Violence is greatest among males between the ages of _____.
a. 5 and 15
b. 15 and 25
c. 25 and 35
d. 35 and 45

Answer: b
Difficulty: 2
Page Reference: 68
Topic: The Endocrine System
Skill: F

Genes, Evolution, and Behavior

Learning Objectives

- Distinguish among genetics, behavior genetics, and evolutionary psychology.
- Differentiate between genes, chromosomes, DNA, and the human genome. Describe what is meant by dominant and recessive genes, polygenic inheritance, and genotype vs. phenotype.
- Compare and contrast strain studies, selection studies, family studies, twin studies, and adoption studies as sources of information about the effects of heredity.
- Identify the key ethical issues that arise as society gains more control over genetics.
- Describe how evolutionary psychologists view the influence of natural selection on human social behavior.

292. The study of the relationship between heredity and behavior is _____.
a. psychobiology
b. behavior genetics
c. evolutionary psychology
d. psychoneuroendocrinology

Answer: b
Difficulty: 2
Page Reference: 70
Topic: Genes, Evolution, and Behavior
Skill: F

293. The subfield of psychology concerned with the roots of behaviors and mental processes is _____.
a. psychoneuroendocrinology
b. evolutionary psychology
c. behavior genetics
d. psychobiology

Answer: b
Difficulty: 1
Page Reference: 70
Topic: Genes, Evolution, and Behavior
Skill: F

294. The study of how plants, animals, and people pass traits from one generation to the next is called _____.
a. genetics
b. trait theory

c. heredity
d. epidemiology

Answer: a
Difficulty: 1
Page Reference: 70
Topic: Genes, Evolution, and Behavior
Skill: F

295. The most basic elements of heredity that control the transmission of traits are _____.
a. cells
b. genes
c. proteins
d. chromosomes

Answer: b
Difficulty: 1
Page Reference: 70
Topic: Genes, Evolution, and Behavior
Skill: F

296. Pairs of tiny threadlike bodies that carry genes are _____.
a. riboplasts
b. vesicles
c. proteins
d. chromosomes

Answer: d
Difficulty: 1
Page Reference: 70
Topic: Genes, Evolution, and Behavior
Skill: F

297. Human beings have _____ pairs of chromosomes in every normal cell.
a. 12
b. 23
c. 17
d. 46

Answer: b
Difficulty: 2 4 yr.: 95% r = .19; 2 yr.: 86% r = .31
Page Reference: 70
Topic: Genes, Evolution, and Behavior
Skill: F

298. At fertilization, the chromosomes from the father's sperm unite with the chromosomes from the mother's egg, creating a new cell called a(n) _____.
a. zygote
b. blastocyst
c. genome
d. embryo

Answer: a
Difficulty: 2
Page Reference: 70
Topic: Genes, Evolution, and Behavior
Skill: F

299. A zygote contains _____ chromosomes in normal circumstances.
a. 36

b. 46
c. 23
d. 13

Answer: b
Difficulty: 2
Page Reference: 70
Topic: Genes, Evolution, and Behavior
Skill: F

300. The main ingredient found in chromosomes and genes is _____.
a. RNA
b. water
c. plasma
d. DNA

Answer: d
Difficulty: 1
Page Reference: 70
Topic: Genes, Evolution, and Behavior
Skill: F

301. The complex molecule that forms the code for all genetic information is _____.
a. RNA
Incorrect: *Ribonucleic acid, or RNA, is an important part of heredity, but the best answer is DNA.*
b. messenger RNA
c. monoamine oxidase
d. DNA
Correct: *The basic unit of heredity, the gene, is composed mostly of deoxyribonucleic acid, or DNA.*

Answer: d
Difficulty: 2
Page Reference: 70
Topic: Genes, Evolution, and Behavior
Skill: C

302. The only known molecule that can replicate or reproduce itself is _____.
a. messenger RNA
b. monoamine oxidase
c. RNA
d. DNA

Answer: d
Difficulty: 2
Page Reference: 70
Topic: Genes, Evolution, and Behavior
Skill: F

303. A member of a gene pair that can control the appearance of a certain trait only if it is paired with another, similar type gene is a _____ gene.
a. recombinant
b. mutated
c. dominant
d. recessive

Answer: d
Difficulty: 1
Page Reference: 71
Topic: Genes, Evolution, and Behavior

Skill: F

304. A member of a gene pair that controls the appearance of a certain trait, no matter what other type of gene it is paired with is called a _____ gene.
a. recombinant
b. mutated
c. recessive
d. dominant

Answer: d
Difficulty: 1
Page Reference: 71
Topic: Genes, Evolution, and Behavior
Skill: F

305. Jessica's mother has blue eyes, with two recessive genes for blue eyes. Her father has brown eyes, with two dominant genes for brown eyes. What are the chances that Jessica has blue eyes?
a. 50 percent
Incorrect: *In order for Jessica to have a 50 percent chance of having blue eyes, her father would need to have at least one recessive gene for blue eyes.*
b. 75 percent
c. 25 percent
d. 0 percent
Correct: *Because Jessica's father is certain to pass on at least one dominant gene for brown eyes, Jessica has zero chance of having blue eyes.*

Answer: d
Difficulty: 2
Page Reference: 71-72
Topic: Genes, Evolution, and Behavior
Skill: A

306. Jessica's mother has blue eyes, with two recessive genes for blue eyes. Her father has brown eyes, with a dominant gene for brown eyes and a recessive gene for blue eyes. What are the chances that Jessica has blue eyes?
a. 0 percent
Incorrect: *In order for Jessica to have no chance of having blue eyes, her father would need to have two dominant genes for brown eyes.*
b. 75 percent
c. 50 percent
Correct: *Because of Jessica's parents' genetic codes, she has a 50 percent chance of having brown eyes and a 50 percent chance of having blue eyes.*
d. 25 percent

Answer: c
Difficulty: 2
Page Reference: 71-72
Topic: Genes, Evolution, and Behavior
Skill: A

307. Jessica's mother has brown eyes, with a dominant gene for brown eyes and a recessive gene for blue eyes. Her father also has brown eyes, with a dominant gene for brown eyes and a recessive gene for blue eyes. What are the chances that Jessica has blue eyes?
a. 0 percent
Incorrect: *In order for Jessica to have no chance of having blue eyes, her father or mother would need to have two dominant genes for brown eyes.*
b. 50 percent
c. 25 percent
Correct: *Because of Jessica's parents' genetic codes, she has a 75 percent chance of having brown eyes and a 25 percent chance of having blue eyes.*
d. 75 percent

Answer: c
Difficulty: 2
Page Reference: 71-72
Topic: Genes, Evolution, and Behavior
Skill: A

308. Jessica's mother has brown eyes, with a dominant gene for brown eyes and a recessive gene for blue eyes. Her father also has brown eyes, with a dominant gene for brown eyes and a recessive gene for blue eyes. What are the chances that Jessica has brown eyes?
a. 25 percent
b. 75 percent
Correct: *Because of Jessica's parents' genetic codes, she has a 75 percent chance of having brown eyes and a 25 percent chance of having blue eyes.*
c. 50 percent
d. 0 percent
Incorrect: *In order for Jessica to have no chance of having blue eyes, her father or mother would need to have two dominant genes for brown eyes.*

Answer: b
Difficulty: 2
Page Reference: 71-72
Topic: Genes, Evolution, and Behavior
Skill: A

309. A process that controls our most important traits in which many genes interact to produce a certain specific trait is called _____.
a. genetic dominance
b. monogenetic inheritance
c. polygenic inheritance
d. natural selection

Answer: c
Difficulty: 1
Page Reference: 71
Topic: Genes, Evolution, and Behavior
Skill: F

310. In many important psychological characteristics, a number of genes make a small contribution to the trait in question. This process is known as _____.
a. polygenic inheritance
Correct: *When multiple genes contribute to a trait or characteristic, it is called polygenetic inheritance.*
b. cumulative inheritance
c. genetic dominance
Incorrect: *Genetic dominance refers to one gene being expressed over another gene. The best answer is polygenetic inheritance.*
d. natural selection

Answer: a
Difficulty: 2
Page Reference: 71
Topic: Genes, Evolution, and Behavior
Skill: C

311. The sum total of all genes within a human cell is _____.
a. polygenetic inheritance
b. the human genome
c. the human phenotype
d. homogenetic inheritance

Answer: b
Difficulty: 2
Page Reference: 72
Topic: Genes, Evolution, and Behavior
Skill: F

312. The term that refers to the full complement of an organism's genetic material is _____.
a. polygenetic inheritance
b. heritability
c. genome
d. gender

Answer: c
Difficulty: 1
Page Reference: 72
Topic: Genes, Evolution, and Behavior
Skill: F

313. Experts believe that the average variation in the human genetic code for any two people is _____ percent.
a. less than 1
b. between 1 and 3
c. between 3 and 5
d. over 5

Answer: a
Difficulty: 3
Page Reference: 72
Topic: Genes, Evolution, and Behavior
Skill: F

314. The human genome contains about _____ genes.
a. 80,000 to 85,000
b. 60,000 to 65,000
c. 20,000 to 25,000
d. 40,000 to 45,000

Answer: c
Difficulty: 3
Page Reference: 72
Topic: Genes, Evolution, and Behavior
Skill: F

315. Humans share about _____ percent of their genes with chimpanzees.
a. 58.7
b. 98.7
c. 38.7
d. 78.7

Answer: b
Difficulty: 3
Page Reference: 72
Topic: Genes, Evolution, and Behavior
Skill: F

316. An organism's entire unique genetic makeup is called its _____.
a. phenotype
b. genotype
c. genetic imprint
d. polygenic inheritance

Answer: b
Difficulty: 1
Page Reference: 72-73
Topic: Genes, Evolution, and Behavior
Skill: F

317. The outward expression of a trait is known as its _____.
a. phenotype
b. genotype
c. genetic imprint
d. polygenic inheritance

Answer: a
Difficulty: 1
Page Reference: 72-73
Topic: Genes, Evolution, and Behavior
Skill: F

318. Intensive inbreeding of animals over many generations in order to create a group of animals that are genetically very similar to one another and different from other groups of animals is called _____ study.
a. strain
b. twin
c. family
d. selection

Answer: a
Difficulty: 2
Page Reference: 73
Topic: Genes, Evolution, and Behavior
Skill: F

319. Strain studies involve _____.
a. a single generation of animals
b. inbreeding of close relatives of animals over several generations
c. adopting children with similar traits
d. breeding animals which have a trait with other animals that share that trait

Answer: b
Difficulty: 2 4 yr.: 40% r = .16
Page Reference: 73
Topic: Genes, Evolution, and Behavior
Skill: F

320. Studies that estimate the heritability of a trait by breeding animals with other animals that have the same trait are called _____ studies.
a. twin
b. strain
c. family
d. selection

Answer: d
Difficulty: 2 2 yr.: 65% r = .27
Page Reference: 73
Topic: Genes, Evolution, and Behavior
Skill: F

321. Studies of heritability in humans that assume that if genes influence a certain trait, close relatives should be more similar with that trait than distant relatives are called _____ studies.

a. strain
Incorrect: *Strain studies are only conducted on animals, not on human beings.*
b. selection
c. family
Correct: *Family studies examine the commonality of certain genetic traits in relatives who share various levels of their genetic code.*
d. twin

Answer: c
Difficulty: 2
Page Reference: 73
Topic: Genes, Evolution, and Behavior
Skill: C

322. Each of the following is true of family study research designs in behavior genetics *except* they _____.
a. make it possible to rule out the role of the environment
Correct: *Family studies do examine the role of genetics in various traits and characteristics but they do not rule out the influence of environment on those phenomena.*
b. are designed for human research
Incorrect: *Family studies, unlike strain studies, are designed to be conducted on/with human beings.*
c. suggest a role for heredity in schizophrenia
d. assume a greater similarity of a trait among close relatives as opposed to distant relatives

Answer: a
Difficulty: 3
Page Reference: 73
Topic: Genes, Evolution, and Behavior
Skill: C

323. Which of the following have the *most* similar genetic composition?
a. identical twins
b. cousins
c. fraternal twins
d. siblings

Answer: a
Difficulty: 1 4 yr.: 92% r = .33; 2 yr.: 92% r = .35
Page Reference: 73
Topic: Genes, Evolution, and Behavior
Skill: F

324. Fraternal twins are _____ similar genetically than are other brothers and sisters.
a. much more
b. much less
c. no more
d. slightly more

Answer: c
Difficulty: 1
Page Reference: 73
Topic: Genes, Evolution, and Behavior
Skill: F

325. Twins that develop from two separate fertilized egg cells and are therefore different in genetic make-up are _____ twins.
a. fraternal
b. Siamese
c. symbiotic
d. identical

Answer: a
Difficulty: 1
Page Reference: 73
Topic: Genes, Evolution, and Behavior
Skill: F

326. Twins that develop from a single fertilized ovum are _____ twins.
a. symbiotic
b. fraternal
c. Siamese
d. identical

Answer: d
Difficulty: 1
Page Reference: 73
Topic: Genes, Evolution, and Behavior
Skill: F

327. Scientists studying behavior genetics in humans commonly use which of the following types of studies for their research on people?
a. Twin, family, and selection studies, but not strain studies.
b. Twin and family studies, but not selection or strain studies.
c. Twin, family, selection, and strain studies.
d. Twin studies, but not family, selection, or strain studies.

Answer: b
Difficulty: 3
Page Reference: 73
Topic: Genes, Evolution, and Behavior
Skill: F

328. Which of the following types of studies is least effective in ruling out environmental effects in the development of traits?
a. strain studies
b. family studies
Correct: *Family studies are designed to examine the influence of genetics, but do not rule out the effects of environmental influences.*
c. twin studies
Incorrect: *Twin studies do allow us to rule out the influence of environment to some extent, but not completely.*
d. selection studies

Answer: b
Difficulty: 3 4 yr.: 44% r = .30
Page Reference: 73
Topic: Genes, Evolution, and Behavior
Skill: C

329. An extremely useful research method for studying human behavior genetics is a _____.
a. twin study
b. strain study
c. selection study
d. selective breeding study

Answer: a
Difficulty: 2 4 yr.: 58% r = .32
Page Reference73
Topic: Genes, Evolution, and Behavior
Skill: F

330. Todd's identical twin brother suffers from schizophrenia. The odds are about one out of _____ that he, too, will develop this mental illness.
a. eight
b. two
c. four
d. six

Answer: b
Difficulty: 2 4 yr.: 64% r = .22
Page Reference: 73
Topic: Genes, Evolution, and Behavior
Skill: F

331. Todd's fraternal twin brother suffers from schizophrenia. The odds are _____ percent that he, too, will develop this mental illness.
a. 100
b. 25
c. 50
d. 15

Answer: d
Difficulty: 2
Page Reference: 73
Topic: Genes, Evolution, and Behavior
Skill: F

332. Research studies carried out on children adopted at birth by parents not related to them to determine the relative influence of heredity and environment on human behavior are called _____ studies.
a. selection
b. adoption
c. case
d. strain

Answer: b
Difficulty: 1
Page Reference: 74
Topic: Genes, Evolution, and Behavior
Skill: F

333. One process by which physicians can test a fetus, in the womb, for possible genetic abnormalities (defects) is called _____.
a. ultrasound
b. positron emission tomography scanning
c. amniocentesis
d. immunotherapy

Answer: c
Difficulty: 1 4 yr.: 88% r = .24
Page Reference: 74
Topic: Genes, Evolution, and Behavior
Skill: F

334. A procedure in which cells are collected from the membranes surrounding the fetus, then are tested for genetic abnormalities, is called _____.
a. intra-uterine probe testing
b. chorionic villus sampling
c. ultrasound
d. amniocentesis

Answer: b

Difficulty: 2
Page Reference: 74
Topic: Genes, Evolution, and Behavior
Skill: F

335. A procedure in which some of the cells that the fetus casts off into the fluid surrounding it in the womb are collected and tested for chromosomal or genetic defects is _____.
a. chorionic villus sampling
b. ultrasound
c. amniocentesis
d. intra-uterine probe testing

Answer: c
Difficulty: 2
Page Reference: 74
Topic: Genes, Evolution, and Behavior
Skill: F

336. Prenatal screening techniques such as amniocentesis detect genetic problems in _____ percent of pregnancies.
a. about 10
b. about 2
c. less than 1
d. about 5

Answer: b
Difficulty: 3
Page Reference: 74
Topic: Genes, Evolution, and Behavior
Skill: F

337. The mechanism proposed by Darwin in his theory of evolution stating that organisms best adapted to their environment tend to survive and transmit their genetic characteristics to their offspring, is called _____.
a. mutational transmosis
b. natural selection
c. behavior genetics
d. random adaptation

Answer: b
Difficulty: 1
Page Reference: 75
Topic: Genes, Evolution, and Behavior
Skill: F

338. The scientist who proposed the mechanism of natural selection to explain the process of evolution was _____.
a. Pasteur
b. Watson
c. Darwin
d. Freud

Answer: c
Difficulty: 1
Page Reference: 75
Topic: Genes, Evolution, and Behavior
Skill: F

339. From an evolutionary perspective, for mate selection in humans, it is most advantageous for _____.

a. both males and females to seek as many mates as possible
b. males to seek one long-term mate but for females to seek as many mates as possible
Incorrect: *According to evolutionary psychology, males may gain advantage by finding as many partners as possible because of their ability to replenish sperm in a short amount of time.*
c. both males and females to seek one mate for life
d. females to seek one long-term mate but for males to seek as many mates as possible
Correct: *Females gain advantage by finding one male mate to stay with for the long term, according to evolutionary psychology.*

Answer: d
Difficulty: 2
Page Reference: 76
Topic: Genes, Evolution, and Behavior
Skill: C

340. Each of the following is a current criticism of evolutionary psychology *except* _____.
a. it uses science to justify perpetuating unjust social policies
Incorrect: *This is a valid criticism of evolutionary psychology, as some of its findings tend to support social policies that are, for example, quite sexist.*
b. by saying a trait is adaptive, it implies that the trait is good
c. it too hastily explains behaviors from an evolutionary perspective rather than investigating other origins for them
d. it lacks the basic scientific methodology to properly study any of its claims
Correct: *A lack of scientific foundations to support the claims made by evolutionary psychology is not a valid criticism that has been made.*

Answer: d
Difficulty: 3
Page Reference: 76
Topic: Genes, Evolution, and Behavior
Skill: C

True/False

1. There are as many as 100 billion neurons in the brain of an average human being.
a. True
b. False

Answer: a
Difficulty: 1
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

2. The tiny fibers branching out from the cell body of a neuron are called axons.
a. True
b. False

Answer: b
Difficulty: 1
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

3. An axon is very thick and usually much shorter than dendrites.
a. True
b. False

Answer: b
Difficulty: 2

Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

4. The axon carries outgoing messages from the cell body.
a. True
b. False

Answer: a
Difficulty: 1
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

5. The axon of a neuron is often surrounded by a fatty covering called the myelin sheath.
a. True
b. False

Answer: a
Difficulty: 1
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

6. Electrically charged particles that are present inside and outside the neuron are called graded potentials.
a. True
b. False

Answer: b
Difficulty: 3
Page Reference: 44
Topic: Neurons: The Messengers
Skill: F

7. Neural impulses vary in strength according to the strength of the incoming signal to the neuron.
a. True
b. False

Answer: b
Difficulty: 2
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

8. The neuron cannot fire during the absolute refractory period.
a. True
b. False

Answer: a
Difficulty: 2
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

9. The neuron cannot fire during the relative refractory period.
a. True
b. False

Answer: b
Difficulty: 3
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

10. The tiny gap between the synaptic knob and the next neuron is called the synapse.
a. True
b. False

Answer: b
Difficulty: 2
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

11. A neural impulse causes the synaptic vesicles to release chemicals called neurotransmitters.
a. True
b. False

Answer: a
Difficulty: 3
Page Reference: 46
Topic: Neurons: The Messengers
Skill: F

12. Endorphins appear to increase sensitivity to pain.
a. True
b. False

Answer: b
Difficulty: 1
Page Reference: 48
Topic: Neurons: The Messengers
Skill: F

13. Schizophrenia seems to be associated with an overabundance of dopamine.
a. True
b. False

Answer: a
Difficulty: 2
Page Reference: 48
Topic: Neurons: The Messengers
Skill: F

14. Adult brains are not capable of neurogenesis.
a. True
b. False

Answer: b
Difficulty: 1
Page Reference: 50
Topic: Neurons: The Messengers
Skill: F

15. The nervous system is usually divided into two major parts: the central nervous system and the parasympathetic nervous system.

a. True
b. False

Answer: b
Difficulty: 2
Page Reference: 52
Topic: The Central Nervous System
Skill: F

16. The central nervous system carries messages to and from the brain.
a. True
b. False

Answer: b
Difficulty: 3
Page Reference: 52
Topic: The Central Nervous System
Skill: F

17. The oldest and most primitive of the brain's structures are the cerebral hemispheres.
a. True
b. False

Answer: b
Difficulty: 1
Page Reference: 52
Topic: The Central Nervous System
Skill: F

18. Breathing, heart rate, and blood pressure are controlled by the medulla.
a. True
b. False

Answer: a
Difficulty: 2
Page Reference: 53
Topic: The Central Nervous System
Skill: F

19. The reticular formation is located only in the hindbrain.
a. True
b. False

Answer: b
Difficulty: 2
Page Reference: 54
Topic: The Central Nervous System
Skill: F

20. Phineas Gage suffered personality changes as a result of damage to his temporal lobes.
a. True
b. False

Answer: b
Difficulty: 1
Page Reference: 55
Topic: The Central Nervous System
Skill: F

21. The two cerebral hemispheres are not really equivalent in their functions.
a. True
b. False

Answer: a
Difficulty: 1
Page Reference: 56
Topic: The Central Nervous System
Skill: F

22. The limbic system is important to motivation.
a. True
b. False

Answer: a
Difficulty: 3
Page Reference: 57
Topic: The Central Nervous System
Skill: F

23. The ribbon-like band that connects the two hemispheres of the brain is called the corpus callosum.
a. True
b. False

Answer: a
Difficulty: 1
Page Reference: 57
Topic: The Central Nervous System
Skill: F

24. The hemisphere of the brain most dominant in verbal tasks is the right hemisphere.
a. True
b. False

Answer: b
Difficulty: 3
Page Reference: 59
Topic: The Central Nervous System
Skill: F

25. Even left-handers tend to have their language functions controlled by the left hemisphere of the brain.
a. True
b. False

Answer: a
Difficulty: 2
Page Reference: 59
Topic: The Central Nervous System
Skill: F

26. Differences between hemispheres are greater in women than in men.
a. True
b. False

Answer: b
Difficulty: 2
Page Reference: 59
Topic: The Central Nervous System

Skill: F

27. Broca's area is important in listening and Wernicke's area is important in talking.
a. True
b. False

Answer: b
Difficulty: 2
Page Reference: 59
Topic: The Central Nervous System
Skill: F

28. Both CT scanning and MRI provide pictures of brain activity.
a. True
b. False

Answer: b
Difficulty: 3
Page Reference: 61-62
Topic: The Central Nervous System
Skill: F

29. The complex cable of nerves that connects the brain to the rest of the body is the spinal cord.
a. True
b. False

Answer: a
Difficulty: 1
Page Reference: 63
Topic: The Central Nervous System
Skill: F

30. Afferent neurons carry messages from the central nervous system.
a. True
b. False

Answer: b
Difficulty: 2
Page Reference: 63
Topic: The Central Nervous System
Skill: F

31. The somatic nervous system contains two branches: the sympathetic and the parasympathetic divisions.
a. True
b. False

Answer: b
Difficulty: 2
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: F

32. The sympathetic division carries messages to the body which tell it to prepare for an emergency.
a. True
b. False

Answer: a

Difficulty: 1
Page Reference: 65
Topic: The Peripheral Nervous System
Skill: F

33. You cannot gain conscious control over functions normally controlled by the autonomic nervous system.
a. True
b. False

Answer: b
Difficulty: 2
Page Reference: 66
Topic: The Peripheral Nervous System
Skill: F

34. Chemical substances called hormones are released into your bloodstream by the endocrine glands.
a. True
b. False

Answer: a
Difficulty: 1
Page Reference: 66-67
Topic: The Endocrine System
Skill: F

35. The thyroid gland helps to regulate your body's metabolism.
a. True
b. False

Answer: a
Difficulty: 2
Page Reference: 68
Topic: The Endocrine System
Skill: F

36. The two hormones secreted by the pancreas are insulin and adrenaline.
a. True
b. False

Answer: b
Difficulty: 3
Page Reference: 68
Topic: The Endocrine System
Skill: F

37. The adrenal glands play an important role in the body's reactions to stress.
a. True
b. False

Answer: a
Difficulty: 1
Page Reference: 68
Topic: The Endocrine System
Skill: F

38. Estrogen has been linked to aggressive behavior in both males and females.
a. True

b. False

Answer: a
Difficulty: 1
Page Reference: 68
Topic: The Endocrine System
Skill: F

39. The main ingredient of genes and chromosomes is glucagon.
a. True
b. False

Answer: b
Difficulty: 2
Page Reference: 70
Topic: Genes, Evolution, and Behavior
Skill: F

40. When a number of genes make small contributions to a trait, this is known as mixed dominance.
a. True
b. False

Answer: b
Difficulty: 2
Page Reference: 71
Topic: Genes, Evolution, and Behavior
Skill: F

41. The effects of genetics are not always immediate or fully apparent.
a. True
b. False

Answer: a
Difficulty: 1
Page Reference: 72
Topic: Genes, Evolution, and Behavior
Skill: F

42. Genes can directly cause human behavior.
a. True
b. False

Answer: b
Difficulty: 3
Page Reference: 72-73
Topic: Genes, Evolution, and Behavior
Skill: F

43. Strain studies involve intensive inbreeding of close relatives among animals.
a. True
b. False

Answer: a
Difficulty: 1
Page Reference: 73
Topic: Genes, Evolution, and Behavior
Skill: F

44. Family studies are usually based on families with identical twins.
a. True
b. False

Answer: b
Difficulty: 2
Page Reference: 73
Topic: Genes, Evolution, and Behavior
Skill: F

45. For ethical reasons, only strain and selection studies can be used to explore human genetics.
a. True
b. False

Answer: b
Difficulty: 2
Page Reference: 73
Topic: Genes, Evolution, and Behavior
Skill: F

46. Amniocentesis is a technique for detecting genetic defects in unborn children.
a. True
b. False

Answer: a
Difficulty: 1
Page Reference: 74
Topic: Genes, Evolution, and Behavior
Skill: F

47. Evolutionary psychologists are especially interested in social behaviors.
a. True
b. False

Answer: a
Difficulty: 2
Page Reference: 75
Topic: Genes, Evolution, and Behavior
Skill: F

Essay

1. Define neuron, axon, dendrite, cell body, and myelin sheath. In your definitions, be sure to describe the specific functions of each item.

Answer:
Difficulty: 2
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

2. Describe the process by which a neuron moves from a resting state to firing and then back to a resting state.

Answer:
Difficulty: 3
Page Reference: 44-46
Topic: Neurons: The Messengers
Skill: F

3. Explain the process of how a neural message is transmitted from the end of one neuron to the beginning of another. In your explanation, identify at least two neurotransmitters and describe their functions.

Answer:
Difficulty: 2
Page Reference: 46-48
Topic: Neurons: The Messengers
Skill: F

4. Specifically describe the effects of the neurotransmitters acetylcholine, dopamine, serotonin, norepinephrine, and endorphins.

Answer:
Difficulty: 3
Page Reference: 47-48
Topic: Neurons: The Messengers
Skill: F

5. Explain what plasticity and neurogenesis are. Briefly summarize the research regarding stem cells and the possibility of growing new neurons in the human brain.

Answer:
Difficulty: 3
Page Reference: 48-51
Topic: Neurons: The Messengers
Skill: F

6. Specifically discuss how cocaine, the venom of the black widow spider, caffeine, antidepressant medications, antipsychotic medications, and botulism block or disrupt neural communication.

Answer:
Difficulty: 3
Page Reference: 49
Topic: Neurons: The Messengers
Skill: F

7. Describe the location and functioning of the medulla, cerebellum, thalamus, hypothalamus, and cerebral cortex.

Answer:
Difficulty: 3
Page Reference: 53-57
Topic: The Central Nervous System
Skill: F

8. Briefly describe the functions of the reticular formation and the limbic system. Explain what problems can result from damage or destruction of these areas.

Answer:
Difficulty: 2
Page Reference: 54, 57
Topic: The Central Nervous System
Skill: F

9. Describe the functions of the frontal lobe, temporal lobe, occipital lobe, and parietal lobe. Also, briefly discuss the case of Phineas Gage in terms of which areas of his brain were damaged and the effects of that damage.

Answer:
Difficulty: 3
Page Reference: 54-57
Topic: The Central Nervous System
Skill: F

10. Compare and contrast the functions of the left and right hemispheres of the cerebral cortex. What role does the corpus callosum play in this functioning? Finally, what were the reasons for, and results of, split-brain operations?

Answer:
Difficulty: 3
Page Reference: 57-60
Topic: The Central Nervous System
Skill: F

11. Discuss how the brain controls language in humans, identifying the key structures involved in language processing and describing the effects of damage to these areas.

Answer:
Difficulty: 2
Page Reference: 59-60
Topic: The Central Nervous System
Skill: F

12. Summarize research findings about left-handedness and its causes.

Answer:
Difficulty: 2
Page Reference: 60
Topic: The Central Nervous System
Skill: F

13. Briefly discuss the purposes of and describe the procedure for studying the brain within each of the following general areas: microelectrode techniques, macroelectrode techniques, structural imaging, functional imaging.

Answer:
Difficulty: 2
Page Reference: 60-63
Topic: The Central Nervous System
Skill: F

14. Describe the functions of the spinal cord and explain how it works with the brain to sense events and act on them.

Answer:
Difficulty: 2
Page Reference: 63-64
Topic: The Central Nervous System
Skill: F

15. Compare and contrast the functions of the autonomic nervous system and the somatic nervous system.

Answer:
Difficulty: 2
Page Reference: 65-66
Topic: The Peripheral Nervous System
Skill: F

16. Compare and contrast the functions of the sympathetic and parasympathetic nervous system. What does the current scientific evidence indicate in regard to one's ability to consciously control functions normally controlled by the autonomic nervous system?

Answer:
Difficulty: 1
Page Reference: 65-66
Topic: The Peripheral Nervous System
Skill: F

17. Describe the basic functions of the endocrine system, including the specific functions of the thyroid gland, pancreas, pituitary gland, gonads, and adrenal glands.

Answer:
Difficulty: 2
Page Reference: 66-68
Topic: The Endocrine System
Skill: F

18. Define genes, chromosomes, and DNA and describe their role in the genetic transmission of traits.

Answer:
Difficulty: 3
Page Reference: 70
Topic: Genes, Evolution, and Behavior
Skill: C

19. Explain how dominant and recessive genes might influence the eye color of a child born to parents where the father has blue eyes and the mother has brown eyes. What color eyes are the grandchildren likely to have if the child marries a blue-eyed person? Why?

Answer:
Difficulty: 2
Page Reference: 71-72
Topic: Genes, Evolution, and Behavior
Skill: A

20. Explain what the human genome is, how many genes humans have, and discuss the social implications of research in this area.

Answer:
Difficulty: 3
Page Reference: 72-75
Topic: Genes, Evolution, and Behavior
Skill: F

21. Compare and contrast strain studies and selection studies. Why are they used and what has been learned from them? What are the limitations to these techniques?

Answer:
Difficulty: 1
Page Reference: 73

Topic: Genes, Evolution, and Behavior
Skill: C

22. Define and describe the uses for and limitations of family studies, twin studies, and adoption studies. What has been learned from these studies about the role of heredity in shaping human personality?

Answer:
Difficulty: 3
Page Reference: 73-74
Topic: Genes, Evolution, and Behavior
Skill: C

23. Explain what evolutionary psychology is and identify the types of human behaviors evolutionary psychologists are interested in. Also, briefly discuss the criticisms of evolutionary psychology and how evolutionary psychologists respond to those criticisms.

Answer:
Difficulty: 2
Page Reference: 75-76
Topic: Genes, Evolution, and Behavior
Skill: C