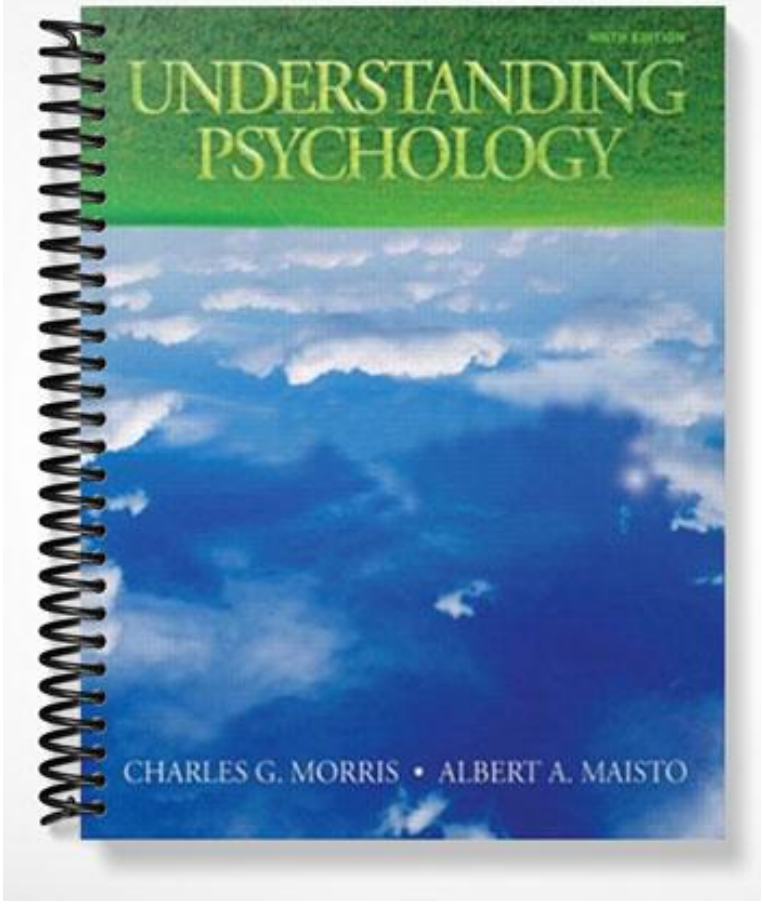
TEST BANK


NINTH EDITION
UNDERSTANDING PSYCHOLOGY
CHARLES G. MORRIS • ALBERT A. MAISTO

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. When young children have half their brain removed, _____.
a. they retain most of their normal abilities
b. it ultimately leads to their death
c. the missing half is eventually regenerated
d. it leads to permanent, severe 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
Correct: *When one part of the brain adapts and adjusts to the deficits caused by problems with another part of the brain, this is known as plasticity.*
c. level of complexity
Incorrect: *Plasticity refers to the ability of the brain to adapt and adjust, not to its different levels of complexity.*
d. brittleness, or rigidity

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

4. The field of psychobiology explores the ways in which _____.
a. evolution has shaped our instincts, drives, urges, and needs
b. biological processes affect our behavior
Correct: *Psychobiology deals with biological bases of behaviors and mental processes.*
c. our mental state affects our physical health
Incorrect: *Mental processes are part of psychobiology, but the emphasis is on the relationship between biology and mental events, not physical health.*
d. behavioral patterns affect biological development

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

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 smallest part of the nervous system is called a _____.
a. neuron
b. lobe
c. gland
d. nerve

Answer: a
Difficulty: 1

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

9. The cell which underlies the activity of the entire nervous system is the _____.
a. T-cell
b. neuron
c. glial cell
d. epidermal cell

Answer: b
Difficulty: 1 4 yr.: 96% r = .11
Page Reference: 42
Topic: Neurons: The Messengers
Skill: F

10. The part of a neuron which contains the nucleus, the largest amount of mass in the cell, and is where metabolism takes place, is the _____.
a. cell membrane
b. axon
c. dendrite
Incorrect: *The dendrite is the part of the neuron that receives incoming messages.*
d. cell body
Correct: *The cell body is the metabolic center of a neuron, and contains the neuron's nucleus.*

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

11. The short fibers which extend from the cell body, allowing it to receive messages from other neurons are _____.
a. dendrites
Correct: *Dendrites are responsible for receiving messages from other neurons.*
b. synapses
c. axons
Incorrect: *Axons are responsible for taking neural impulses away from, not toward, a cell body.*
d. nerve bundles

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

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
Incorrect: *Dendrites receive incoming messages, while axons take outgoing messages toward other neurons.*
c. axon
Correct: *The role of an axon is to take messages from the cell body toward other neurons.*
d. myelin sheath

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

14. The function of the neuron's axon is to _____.
a. conduct electrical impulses toward other neurons
Correct: *The axon takes messages away from the cell body toward other neurons.*
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
Correct: *A nerve is many axons bundled together, like twine bundled into rope.*
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. myelinated pathway

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

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
Correct: *A group of axons bundled together like wires in an electrical cable is called a nerve.*
c. group of dendrites bundled together
Incorrect: *A nerve is a clustered, bundled group of axons, not dendrites.*
d. afferent neuron

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

21. A nerve is a group of _____ bundled together.
a. dendrites
Incorrect: *A nerve is a clustered, bundled group of axons, not dendrites.*
b. axons
Correct: *A group of axons bundled together like wires in an electrical cable is called a nerve.*
c. glial cells
d. interneurons

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

22. A nerve is composed of _____.
a. a bundle of synapses
b. elongated glial cells
c. a bundle of axons
Correct: *A nerve is a grouped bundle of axons from many different neurons.*
d. a neuron and its synapses
Incorrect: *A nerve is made from the bundled axons of many neurons, not just a single neuron.*

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

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: 1 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
Correct: *Myelin is a coating that insulates and protects some axons.*
b. the cell membrane
c. the synaptic cleft
d. glial tissue
Incorrect: *Myelin is made of glial cells, but the correct answer is the myelin sheath.*

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

25. The primary purpose of the myelin sheath is to _____.
a. insulate the neuron so it can transmit information more efficiently
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

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

26. The term “white matter” refers to _____.
a. glial cells
b. unmyelinated axons
Incorrect: *Tissue made of unmyelinated axons is called gray matter.*
c. interneurons
d. myelinated axons
Correct: *Tissue made of myelinated axons is called white matter because of the white color of the myelin sheath.*

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

27. The term “gray matter” refers to _____.
a. interneurons
b. myelinated axons
Incorrect: *Tissue made up of myelinated axons is called white matter.*
c. unmyelinated axons
Correct: *Tissue made up of unmyelinated axons is called gray matter.*
d. glial cells

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

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
Incorrect: *Motor neurons are responsible for taking information from the central nervous system to muscles and glands.*
b. primary neurons
c. sensory neurons
Correct: *Sensory neurons are responsible for taking information from the sensory organs to the central nervous system.*
d. interneurons

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

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
Correct: *Afferent neuron is another term for sensory neuron, which is responsible for taking messages from the sensory organs to the central nervous system.*
c. primary
d. efferent
Incorrect: *Efferent neuron is another term for motor neuron, which is responsible for taking messages from the central nervous system to muscles and glands.*

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

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
Correct: *Motor neurons are responsible for communication between the central nervous system and muscles and glands.*
c. sensory neurons
Incorrect: *Sensory neurons are responsible for communication between sensory organs and the central nervous system.*
d. interneurons

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

34. Neurons that carry messages from the spinal cord or the brain to the muscles and glands are called _____ neurons.
a. efferent

Correct: *Efferent neuron is another term for motor neuron. Motor neurons are responsible for communication between the central nervous system and muscles and glands.*
b. afferent
Incorrect: *Afferent neuron is another term for sensory neuron, which is responsible for taking messages from the sensory organs to the central nervous system.*
c. association
d. primary

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

35. Neurons that carry messages from one neuron to another are called _____ neurons.
a. efferent
Incorrect: *Efferent neuron is another term for motor neuron. Motor neurons are responsible for communication between the central nervous system and muscles and glands.*
b. afferent
c. association
Correct: *Association neuron is another term for interneuron. It is responsible for taking messages from one neuron to another neuron.*
d. primary

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

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

Answer: c
Difficulty: 1
Page Reference: 42, 44
Topic: The Neural Impulse
Skill: F

37. Cells that form the myelin sheath are called _____.
a. adipose tissues
Incorrect: *Myelin is made of glial cells, not adipose cells.*
b. interactive neurons
c. epidermal cells
d. glial cells
Correct: *The myelin sheath is formed from glial cells, which help protect the axon and keep its structure in place.*

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

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 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: 43-44
Topic: Neurons: The Messengers
Skill: F

40. The language used by neurons to communicate _____.
a. involves simple "yes-no," "on-off" electrochemical impulses
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

Answer: a
Difficulty: 1
Page Reference: 44
Topic: The Neural Impulse
Skill: F

41. Electrically charged particles found both inside and outside the neuron are _____.
a. ions
Correct: *An ion is a positively or negatively charged particle.*
b. free radicals
c. nodes
Incorrect: *An electrically charged particle is an ion, not a node.*
d. follicles

Answer: a
Difficulty: 2
Page Reference: 44
Topic: The Neural Impulse
Skill: C

42. Resting potential is the electrical charge across a neural membrane when _____ ions concentrate on the outside and _____ 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: The Neural Impulse
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: The Neural Impulse
Skill: F

44. Neurons that carry messages from one neuron to another are called _____.
a. primary neurons
b. interneurons
c. sensory neurons
d. motor neurons

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

45. 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. resting potential
Correct: *The resting state of the neuron is a polarized state caused by having more negative than positive ions on the inside of the cell membrane.*
b. flux
c. depolarization
d. action potential
Incorrect: *The action potential is an active state caused by having more positive than negative ions inside of the cell membrane.*

Answer: a
Difficulty: 3
Page Reference: 44
Topic: The Neural Impulse
Skill: C

46. 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: The Neural Impulse

Skill: A

47. 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
Correct: *The fact that there is a negative charge caused by unequal amounts of positive and negative ions is called a state of polarization.*
c. equilibrium
d. depolarization
Incorrect: *Depolarization refers to a state where the electrical potential of a cell changes, either from a positive to a negative charge, or from a negative to a positive charge.*

Answer: b
Difficulty: 2
Page Reference: 44
Topic: The Neural Impulse
Skill: C

48. 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: The Neural Impulse
Skill: F

49. 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: The Neural Impulse
Skill: F

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: The Neural Impulse

Skill: C

51. Another term for a neural impulse is a(n) _____ potential.
a. resting
Incorrect: *A resting potential indicates a state when the neuron is inactive, while an action potential represents an active, communicating state of a neuron.*
b. kinetic
c. graded
d. action
Correct: *The action potential refers to the process of a message being sent from the cell body of a neuron toward the end of the terminal buttons. It is also known as a neural impulse.*

Answer: d
Difficulty: 2
Page Reference: 44
Topic: The Neural Impulse
Skill: C

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
Correct: *The action potential is the formal name of the neural impulse that sends a message from one neuron's cell body toward other neurons.*
b. graded
c. kinetic
d. resting
Incorrect: *The resting potential is a polarized state, not a depolarized state.*

Answer: a
Difficulty: 3
Page Reference: 44
Topic: The Neural Impulse
Skill: C

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: The Neural Impulse
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: 1
Page Reference: 44
Topic: The Neural Impulse

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: 44
Topic: The Neural Impulse
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: 44
Topic: The Neural Impulse
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: 44
Topic: The Neural Impulse
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: 44
Topic: The Neural Impulse
Skill: A

59. According to the textbook, which of the following statements is FALSE?
a. Neurons in the central nervous system have myelin sheaths, while those in the peripheral nervous system do not.
b. Some neurons have axons that are several feet long.
c. Within a neuron, information flows from dendrites to cell body to axon.
d. The nerve impulse involves the exchange of electrically charged ions across the cell membrane.

Answer: a
Difficulty: 1 4 yr.: 75% r = .29; 4 yr.: 83% r = .22
Page Reference: 44
Topic: The Neural Impulse
Skill: F

60. "Depolarization," "absolute refractory period," and "threshold" 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
Topic: The Neural Impulse
Skill: C

61. 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
Topic: The Neural Impulse
Skill: F

62. 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: 44-45
Topic: The Neural Impulse
Skill: C

63. The "all or none" law is the principle stating that _____.

a. a neuron fires at full strength or not at all
Correct: *If the threshold of excitation is exceeded, a neuron generates a complete action potential. If it is not, the neuron stays in its resting state. There is only one firing strength of a neuron.*
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
Incorrect: *Neurons that receive inhibitory messages can still fire if those messages are outnumbered by excitatory messages.*
d. all the neurons in a particular area of the brain fire simultaneously or not at all

Answer: a
Difficulty: 2
Page Reference: 44-45
Topic: The Neural Impulse
Skill: C

64. 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
Incorrect: *Neurons whose dendrites receive inhibitory messages can still fire if those messages are outnumbered by excitatory messages.*
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
Correct: *If the threshold of excitation is exceeded, a neuron generates a complete action potential. If it is not, the neuron stays in its resting state. There is only one firing strength of a neuron.*
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: 44-45
Topic: The Neural Impulse
Skill: C

65. 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: 44-45
Topic: The Neural Impulse
Skill: A

66. 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: 44-45
Topic: The Neural Impulse
Skill: A

67. The cell membrane of a neuron is _____.
a. completely permeable
b. translucent
c. semi-permeable
d. impermeable

Answer: c
Difficulty: 3
Page Reference: 45
Topic: The Neural Impulse
Skill: F

68. 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: 45
Topic: The Neural Impulse
Skill: F

69. 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: 45
Topic: The Neural Impulse
Skill: F

70. 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 neural impulse 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: 45
Topic: The Neural Impulse
Skill: F

71. 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
Incorrect: *During the relative refractory period, another action potential can be generated, but it takes significantly more stimulation to cause this event to occur.*
b. primary refractory
c. polarization
d. absolute refractory
Correct: *In the tiny amount of time after an action potential, the absolute refractory period occurs, during which time another neural impulse is impossible to generate.*

Answer: d
Difficulty: 3
Page Reference: 45
Topic: The Neural Impulse
Skill: C

72. 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
Incorrect: *In the tiny amount of time after an action potential, the absolute refractory period occurs, during which time another neural impulse is impossible to generate.*
b. relative refractory
Correct: *During the relative refractory period, another action potential can be generated, but it takes significantly more stimulation to cause this event to occur.*
c. recovery
d. secondary refractory

Answer: b
Difficulty: 3
Page Reference: 45
Topic: The Neural Impulse
Skill: C

73. 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: 45
Topic: The Neural Impulse
Skill: A

74. 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: 45
Topic: The Synapse
Skill: F

75. 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
Correct: *The synapse refers to the entire area where two neighboring neurons nearly touch each other.*
b. synaptic knob
c. synaptic vesicle
d. synaptic space
Incorrect: *The synaptic space is a small part of the synapse, which includes only the tiny gap between a terminal button and a dendrite.*

Answer: a
Difficulty: 2 2 yr.: 81% r = .34
Page Reference: 45
Topic: The Synapse
Skill: C

76. 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: 45-47
Topic: The Synapse
Skill: F

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

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

78. 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: The Synapse
Skill: F

79. Tiny sacs in a synaptic knob that release chemicals into the synapse are called _____.
a. synaptic nodes
b. synaptic knobs
Incorrect: *The synaptic knob is another name for a terminal button. It is the end of an axon that contains synaptic vesicles.*
c. synaptic vesicles
Correct: *Synaptic vesicles are pockets that store and release neurotransmitters. They are found in terminal buttons.*
d. synaptic clefts

Answer: c
Difficulty: 2
Page Reference: 46
Topic: The Synapse
Skill: C

80. 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: 46-47
Topic: The Synapse
Skill: F

81. 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: 46-47
Topic: The Synapse
Skill: F

82. 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: 46-47

Topic: The Synapse
Skill: C

83. 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: 46-47
Topic: The Synapse
Skill: C

84. 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: 47
Topic: The Synapse
Skill: F

85. 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
Topic: The Synapse
Skill: C

86. 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: 47
Topic: The Synapse

Skill: C

87. _____ 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: 47
Topic: The Synapse
Skill: F

88. 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: 47
Topic: The Synapse
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
Topic: The Synapse
Skill: F

90. 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: The Synapse
Skill: A

91. 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: 47
Topic: The Synapse
Skill: C

92. 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: 47
Topic: The Synapse
Skill: C

93. 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
Topic: The Synapse
Skill: F

94. 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
Topic: The Synapse
Skill: F

95. Painkilling drugs that lock into the same receptor sites as endorphins are _____.
a. barbiturates
b. neuroleptics
c. beta-blockers
d. opiates

Answer: d
Difficulty: 1
Page Reference: 47
Topic: The Synapse
Skill: F

96. Because they have similar chemical structures, morphine and other opiates 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: 47
Topic: The Synapse
Skill: F

97. 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. norepinephrine
Incorrect: *Although norepinephrine might play some role in the development of depression, serotonin is thought to be the key to many mood disorder symptoms.*
c. dopamine
d. acetylcholine

Answer: a
Difficulty: 2
Page Reference: 47-48
Topic: The Synapse
Skill: A

98. 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: 48
Topic: Box: Applying Psychology: Drugs and Behavior
Skill: F

99. 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: 48
Topic: Box: Applying Psychology: Drugs and Behavior

Skill: F

100. 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: 48
Topic: Box: Applying Psychology: Drugs and Behavior
Skill: F

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

Answer: c
Difficulty: 2
Page Reference: 48
Topic: Box: Applying Psychology: Drugs and Behavior
Skill: F

102. 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: 48
Topic: Box: Applying Psychology: Drugs and Behavior
Skill: A

103. 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: 48
Topic: Box: Applying Psychology: Drugs and Behavior
Skill: A

104. Schizophrenia is related to a(n) _____.
a. inability to reabsorb dopamine back into the synaptic vesicles
b. blocking of dopamine receptor sites
c. overabundance of dopamine
d. lack of adequate dopamine

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

105. 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: The Synapse
Skill: F

106. 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: 48
Topic: The Synapse
Skill: A

107. The ability of the brain to change in response to experience is called _____.
a. neural plasmosis
b. reticular formation
c. neurogenesis
Incorrect: *Neurogenesis is the creation of new neurons. The best answer is neural plasticity.*
d. neural plasticity
Correct: *Neural plasticity refers to the ability of the brain to change structurally and chemically in response to experience.*

Answer: d
Difficulty: 1
Page Reference: 48
Topic: Neural Plasticity and Neurogenesis
Skill: C

108. 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: 49
Topic: Neural Plasticity and Neurogenesis
Skill: F

109. 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: 49
Topic: Neural Plasticity and Neurogenesis
Skill: F

110. 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: 49
Topic: Neural Plasticity and Neurogenesis
Skill: F

111. 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: 49
Topic: Neural Plasticity and Neurogenesis
Skill: F

112. The process in which stem cells become neurons is known as _____.
a. neurogenesis
Correct: *The creation of new neurons from stem cells is called neurogenesis.*
b. neural plasticity
Incorrect: *Neural plasticity refers to the ability of the brain to adjust and adapt to experiences, not the creation of new neurons.*
c. reticular formation
d. plasmosis

Answer: a
Difficulty: 1
Page Reference: 50
Topic: Neural Plasticity and Neurogenesis
Skill: C

113. Traditionally, injuries to the spinal cord have been considered _____.
a. permanent
b. temporary
c. treatable
d. fatal

Answer: a
Difficulty: 1
Page Reference: 50
Topic: Neural Plasticity and Neurogenesis
Skill: F

114. Undifferentiated precursor cells that, under the right conditions, can give rise to any specialized cell in the body are called _____ cells.
a. stem
Correct: *Research using stem cells has led to the development of new cells in a variety of essential body parts.*
b. receptor
c. glial
Incorrect: *Glial cells, which get their name from the word "glue," are responsible for protecting and insulating neurons. They are not involved in neurogenesis.*
d. T-cells

Answer: a
Difficulty: 2
Page Reference: 50
Topic: Neural Plasticity and Neurogenesis
Skill: C

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

Answer: d
Difficulty: 1
Page Reference: 50
Topic: Neural Plasticity and Neurogenesis
Skill: F

116. 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: Neural Plasticity and Neurogenesis
Skill: F

117. In patients suffering from Parkinson's disease, fetal nerve cell transplants have improved motor control _____.
a. for periods of 10 to 20 years
b. permanently
c. no more than 3 to 5 years
d. for periods of 5 to 10 years

Answer: d
Difficulty: 2
Page Reference: 50
Topic: Neural Plasticity and Neurogenesis
Skill: F

118. 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: Neural Plasticity and Neurogenesis
Skill: F

119. 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: Neural Plasticity and Neurogenesis
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.

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

Answer: a
Difficulty: 1 2 yr.: 73% r = .29
Page Reference: 51
Topic: The Central Nervous System
Skill: F

121. 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: 51
Topic: The Central Nervous System
Skill: F

122. The division of the nervous system that consists of the brain and spinal cord is the _____ system.
a. peripheral nervous
Incorrect: *The peripheral nervous system contains all nerves and neurons outside of the spinal cord and brain.*
b. primary nervous
c. endocrine
d. central nervous
Correct: *The central nervous system includes all neural tissue in the brain and spinal cord.*

Answer: d
Difficulty: 1
Page Reference: 51
Topic: The Central Nervous System
Skill: C

123. 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: 51
Topic: The Central Nervous System
Skill: F

124. 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: 51
Topic: The Central Nervous System
Skill: F

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

Answer: b
Difficulty: 2
Page Reference: 51
Topic: The Central Nervous System
Skill: F

126. 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
Incorrect: *The brain and spinal cord make up the central nervous system.*
b. endocrine
c. peripheral nervous
Correct: *The peripheral nervous system is what allows the brain and spinal cord to send and receive messages to and from the rest of the body.*
d. secondary nervous

Answer: c
Difficulty: 1
Page Reference: 51
Topic: The Central Nervous System
Skill: C

127. Structurally, the nervous system has _____ major parts.
a. two
b. three
c. four
d. five

Answer: a
Difficulty: 3
Page Reference: 51
Topic: The Central Nervous System
Skill: F

128. 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: 51
Topic: The Central Nervous System
Skill: F

129. 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: 51
Topic: The Central Nervous System
Skill: F

130. 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: 51
Topic: The Central Nervous System
Skill: C

131. 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: 51
Topic: The Brain
Skill: F

132. 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: 51
Topic: The Brain
Skill: F

133. 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 Brain
Skill: F

134. The _____ is believed to be the earliest part of the brain that evolved.
a. midbrain
b. hindbrain
c. forebrain
d. limbic system

Answer: b
Difficulty: 2
Page Reference: 52
Topic: The Brain
Skill: F

135. 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
Topic: The Brain
Skill: C

136. The part of the hindbrain that controls such functions as breathing, heart rate, and blood pressure is the _____.
a. cerebral cortex
b. medulla
Correct: *The medulla is the part of the hindbrain that controls essential functions such as respiration, heart rate, and blood pressure.*
c. cerebellum
d. pons
Incorrect: *The pons is part of the hindbrain, but it regulates the sleep-wake cycle.*

Answer: b
Difficulty: 2 4 yr.: 79% r = .33; 4 yr.: 84% r = .40
Page Reference: 52
Topic: The Brain
Skill: C

137. 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: 52
Topic: The Brain
Skill: F

138. 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: 52
Topic: The Brain
Skill: A

139. The structure in the hindbrain that transmits messages to the upper areas of the brain and produces chemicals that help maintain our wake-sleep cycle is the _____.
a. pons
Correct: *The pons is the part of the hindbrain that regulates our sleep-wake cycle.*
b. basal ganglia
c. substantia nigra
d. cerebellum
Incorrect: *The cerebellum is part of the hindbrain, like the pons, but it is not responsible for regulating our sleep-wake cycle.*

Answer: a
Difficulty: 2
Page Reference: 52
Topic: The Brain
Skill: C

140. 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: 52
Topic: The Brain
Skill: A

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

Answer: b
Difficulty: 2
Page Reference: 52
Topic: The Brain
Skill: F

142. 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: 52
Topic: The Brain
Skill: F

143. Susan has a degenerative disease which 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: 52
Topic: The Brain
Skill: A

144. 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: 52
Topic: The Brain
Skill: F

145. The part of the brain where pain is registered and which is important in hearing and sight is the _____.
a. reticular formation
b. medulla
Incorrect: *The medulla is responsible for essential processes like breathing, circulation, and regulation of blood pressure.*
c. hypothalamus
d. midbrain
Correct: *The midbrain is responsible for hearing and sight and for registering pain, among other functions.*

Answer: d
Difficulty: 3
Page Reference: 52
Topic: The Brain
Skill: C

146. 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: 52
Topic: The Brain
Skill: F

147. The structure directly over the brain stem that relays and translates sensory information is the _____.
a. thalamus
Correct: *Almost all sensory information goes through the thalamus on its way to the appropriate sensory processing center.*
b. amygdala
c. hypothalamus
Incorrect: *The hypothalamus is sometimes called the "little thalamus," but it is not involved in relaying sensory information.*
d. hippocampus

Answer: a
Difficulty: 2
Page Reference: 52
Topic: The Brain
Skill: C

148. The part of the brain which acts as a switchboard or relay station, sending incoming messages to the appropriate areas of the brain, is the _____.
a. thalamus
Correct: *Almost all sensory information goes through the thalamus on its way to the appropriate sensory processing center.*
b. pons
c. medulla
d. hypothalamus
Incorrect: *The hypothalamus is sometimes called the "little thalamus," but it is not involved in relaying sensory information.*

Answer: a
Difficulty: 2
Page Reference: 52
Topic: The Brain
Skill: C

149. The part of the brain that acts like a "thermostat," regulating hunger, thirst, sexual drive, and body temperature is the _____.
a. thalamus
Incorrect: *The thalamus is responsible for relaying sensory information. It is not involved in these other drives.*
b. amygdala
c. hypothalamus
Correct: *The hypothalamus controls many different functions, including important daily functions like hunger and thirst.*
d. hippocampus

Answer: c
Difficulty: 2
Page Reference: 52
Topic: The Brain
Skill: C

150. The part of the brain responsible for emotional behavior such as experiencing rage, terror, or pleasure is the _____.
a. amygdala
Incorrect: *The amygdala helps regulate aggression and other emotions, but the best answer to this question is the hypothalamus.*

b. hippocampus
c. thalamus
d. hypothalamus
Correct: *Different parts of the hypothalamus control different functions. Some of the hypothalamus is responsible for regulating these emotions.*

Answer: d
Difficulty: 3 4 yr.: 54% r = .37; 4 yr.: 64% r = .10
Page Reference: 52
Topic: The Brain
Skill: C

151. 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: 52
Topic: The Brain
Skill: F

152. 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: 52
Topic: The Brain
Skill: A

153. 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: 52
Topic: The Brain
Skill: A

154. Darlene just found out that she made the dean's list, and she's in ecstasy -- singing and dancing down the corridor. 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: 52
Topic: The Brain
Skill: A

155. 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
Incorrect: *The limbic system is responsible for many functions, including emotional regulation, but the best answer to this question is the reticular formation.*
d. reticular formation
Correct: *The reticular formation is responsible for coordinating communication between the different levels of brain tissue.*

Answer: d
Difficulty: 3
Page Reference: 52
Topic: The Brain
Skill: C

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

Answer: d
Difficulty: 2
Page Reference: 52
Topic: The Brain
Skill: F

157. 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: 52
Topic: The Brain
Skill: F

158. 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: 52
Topic: The Brain
Skill: F

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

Answer: d
Difficulty: 1
Page Reference: 52
Topic: The Brain
Skill: F

160. The outer surface of the two cerebral hemispheres that regulate most complex behavior is called the _____.
a. cerebral cortex
Correct: *The cerebral cortex is the thin layer of gray matter (unmyelinated cells) that covers the cerebrum.*
b. cerebellum
Incorrect: *The cerebellum, located in the hindbrain, is not the correct answer.*
c. corpus callosum
d. substantia nigra

Answer: a
Difficulty: 3
Page Reference: 52
Topic: The Brain
Skill: C

161. 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: 52
Topic: The Brain
Skill: F

162. 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: 52
Topic: The Brain
Skill: F

163. 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: 52
Topic: The Brain
Skill: F

164. The intricate network of folds -- hills and valleys -- that line the outer surface of the cerebral cortex, allowing it to fit inside the skull, are called _____.
a. convolutions
Correct: *These folds and crevices are called convolutions, and they are as unique to each person as a fingerprint.*
b. sensory projection areas
c. association areas
d. motor projections
Incorrect: *The correct answer is convolutions.*

Answer: a
Difficulty: 1 4 yr.: 39% r = .30
Page Reference: 52
Topic: The Brain
Skill: C

165. 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: 52-53
Topic: The Brain
Skill: C

166. 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: 53
Topic: The Brain
Skill: F

167. 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: 53
Topic: The Brain
Skill: F

168. 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: 53
Topic: The Brain
Skill: F

169. The site of many mental processes that are unique to humans (self-awareness, initiative, planning ability, and goal-directed behavior) is the _____ lobe.
a. frontal
b. temporal
c. occipital
d. parietal

Answer: a
Difficulty: 2 4 yr.: 80% r = .27; 2 yr.: 77% r = .45; 2 yr.: 60% r = .42
Page Reference: 53
Topic: The Brain
Skill: F

170. 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: 53
Topic: The Brain
Skill: F

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

Answer: a
Difficulty: 2

Page Reference: 53
Topic: The Brain
Skill: F

172. 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: 53
Topic: The Brain
Skill: F

173. 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: 53-54
Topic: The Brain
Skill: F

174. 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: 53-54
Topic: The Brain
Skill: C

175. 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: 53-54
Topic: The Brain
Skill: F

176. 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: 54
Topic: The Brain
Skill: A

177. 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: 54
Topic: The Brain
Skill: A

178. 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: 54
Topic: The Brain
Skill: F

179. 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: 55
Topic: The Brain
Skill: C

180. 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: 55
Topic: The Brain
Skill: A

181. 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: 55
Topic: The Brain
Skill: F

182. 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: 55
Topic: The Brain
Skill: A

183. 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: 55
Topic: The Brain
Skill: F

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

Answer: c
Difficulty: 2
Page Reference: 55
Topic: The Brain
Skill: F

185. 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: 55
Topic: The Brain
Skill: A

186. 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: 55
Topic: The Brain
Skill: A

187. The lobe of the brain that regulates emotions and motivations such as anxiety, pleasure, and anger is the _____ lobe.
a. occipital
b. frontal

Incorrect: *The frontal lobe is responsible for a large amount of emotional regulation, but the temporal lobe is the best answer.*
c. parietal
d. temporal
Correct: *These specific emotions are regulated in the temporal lobe of the cerebrum.*

Answer: d
Difficulty: 3
Page Reference: 55
Topic: The Brain
Skill: C

188. The limbic system is fully developed only in _____.
a. mammals and reptiles
b. vertebrates
c. reptiles
d. mammals

Answer: d
Difficulty: 1
Page Reference: 55
Topic: The Brain
Skill: F

189. 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: 55
Topic: The Brain
Skill: F

190. 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: 55-56
Topic: The Brain
Skill: C

191. 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: 55-56
Topic: The Brain
Skill: F

192. 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: 56
Topic: The Brain
Skill: A

193. 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: 56
Topic: The Brain
Skill: F

194. 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: 56
Topic: The Brain
Skill: A

195. 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: 56
Topic: The Brain
Skill: F

196. 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: 56
Topic: Hemispheric Specialization
Skill: F

197. “Split brain” patients are patients who have had _____.
a. their cerebellum split in the middle
b. their brain stem cut down the middle
Incorrect: *If a person had their brain stem cut, it would probably be a fatal injury that would inhibit respiration, circulation, and blood pressure control.*
c. their corpus callosum cut
Correct: *Split-brain surgery involves severing the connections of the corpus callosum, which decreases communication between the two cerebral hemispheres.*
d. a prefrontal lobotomy

Answer: c
Difficulty: 2 4 yr.: 88% r = .19
Page Reference: 56
Topic: Hemispheric Specialization
Skill: C

198. 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: 56
Topic: Hemispheric Specialization
Skill: A

199. 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: 57
Topic: Hemispheric Specialization
Skill: A

200. 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
Correct: *Verbal processing and identification of an object is handled by the left hemisphere, not the right hemisphere.*
d. can name the objects, but cannot point to them with their right hand
Incorrect: *This is the opposite of the correct answer.*

Answer: c
Difficulty: 3 4 yr.: 82% r = .22 4 yr.: 80% r = .22
Page Reference: 57
Topic: Hemispheric Specialization
Skill: A

201. 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
Incorrect: *This is the opposite of the correct answer.*
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
Correct: *Verbal identification of an object is usually handled by the left hemisphere, while physical identification (pointing or selecting) is handled by the right hemisphere.*
d. can name the objects and can point to them with their left hand

Answer: c
Difficulty: 3
Page Reference: 57
Topic: Hemispheric Specialization
Skill: A

202. 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: 57

Topic: Hemispheric Specialization
Skill: F

203. 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: 57
Topic: Hemispheric Specialization
Skill: F

204. 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: 57
Topic: Hemispheric Specialization
Skill: F

205. 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: 57
Topic: Hemispheric Specialization
Skill: F

206. 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: 2 2 yr.: 45% r = .34
Page Reference: 57
Topic: Hemispheric Specialization
Skill: A

207. A baby is born with an impairment in 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: 57
Topic: Hemispheric Specialization
Skill: A

208. 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: 57-58
Topic: Hemispheric Specialization
Skill: F

209. The hemisphere that specializes in analyzing sequences and details is the _____ hemisphere.
a. right
b. left
c. rear
d. front

Answer: b
Difficulty: 2
Page Reference: 58
Topic: Hemispheric Specialization
Skill: F

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

Answer: c
Difficulty: 3
Page Reference: 58
Topic: Hemispheric Specialization
Skill: F

211. People tend to be more cheerful, sociable, and self-confident when the _____ hemisphere of their brain is more active than the _____ hemisphere of their brain.
a. left; right

b. right; left
c. front; rear
d. rear; front

Answer: a
Difficulty: 3
Page Reference: 58
Topic: Hemispheric Specialization
Skill: F

212. People tend to be more easily stressed, frightened, and depressed when the _____ hemisphere of their brain is more active than the _____ hemisphere of their brain.
a. rear; front
b. right; left
c. left; right
d. front; rear

Answer: b
Difficulty: 3
Page Reference: 58
Topic: Hemispheric Specialization
Skill: F

213. A patient suffering from a seizure disorder has his right hemisphere anesthetized. Which of the following is he **MOST** likely to do?
a. fly into an uncontrollable rage
b. cry
c. laugh and express positive emotions
Correct: *Depressing the right hemisphere will allow the left hemispheric functions to increase, which would lead to these positive emotions.*
d. fall into a deep sleep
Incorrect: *The depressing of the right hemisphere would not have a specific effect on sleep.*

Answer: c
Difficulty: 3
Page Reference: 58
Topic: Hemispheric Specialization
Skill: A

214. A patient suffering from a seizure disorder has his left hemisphere anesthetized. Which of the following is he **MOST** likely to do?
a. cry
Correct: *Depressing the left hemisphere will allow the right hemispheric functions to increase, which would lead to these emotions such as fear and stress.*
b. fly into an uncontrollable rage
c. laugh and express positive emotions
d. fall into a deep sleep
Incorrect: *The depressing of the left hemisphere would not have a specific effect on sleep.*

Answer: a
Difficulty: 3
Page Reference: 58
Topic: Hemispheric Specialization
Skill: A

215. The hemisphere most involved in preserving one's sense of identity or “self” is the _____ hemisphere.
a. left
b. front
c. right

d. rear

Answer: c
Difficulty: 2
Page Reference: 58
Topic: Hemispheric Specialization
Skill: F

216. 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: 58
Topic: Hemispheric Specialization
Skill: F

217. The area of the frontal lobe which 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: 58
Topic: Hemispheric Specialization
Skill: F

218. 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: 58
Topic: Hemispheric Specialization
Skill: F

219. 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: 58
Topic: Hemispheric Specialization
Skill: F

220. Language difficulties that often result from strokes or other brain injuries are called _____.
a. anosmias
Incorrect: *Anosmia refers to an interruption of an individual's ability to smell.*
b. aphasias
Correct: *Aphasia refers to an expressive or receptive language difficulty.*
c. occlusions
d. hematomas

Answer: b
Difficulty: 1
Page Reference: 58
Topic: Hemispheric Specialization
Skill: C

221. 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: 58
Topic: Hemispheric Specialization
Skill: A

222. 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: 58
Topic: Hemispheric Specialization
Skill: A

223. The part of the brain that helps regulate hearing, balance and equilibrium, certain emotions and motivation, and recognizing faces is the _____ lobe.
a. parietal
Incorrect: *The parietal lobe of the cerebrum is responsible for many important functions, but these skills are controlled in the temporal lobe.*
b. temporal
Correct: *These functions are controlled by the temporal lobe, which is located on the sides of the cerebrum.*
c. frontal
d. occipital

Answer: b

Difficulty: 1
Page Reference: 58
Topic: The Brain
Skill: C

224. 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: 58-59
Topic: Hemispheric Specialization
Skill: F

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

Answer: a
Difficulty: 1
Page Reference: 59
Topic: Hemispheric Specialization
Skill: F

226. Left-handedness appears to be the result of _____.
a. exclusively prenatal influences
b. a combination of genetic, environmental, and prenatal influences
c. exclusively environmental influences
d. exclusively genetic influences

Answer: b
Difficulty: 1
Page Reference: 59
Topic: Hemispheric Specialization
Skill: F

227. 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: 59
Topic: Hemispheric Specialization
Skill: F

228. _____ techniques are used to study the functions of single neurons.
a. Structural imaging
Incorrect: *Structural imaging techniques allow for the study of different parts, or structures, of the brain.*
b. Macroelectrode
c. Microelectrode

Correct: *The procedure used to study the function of individual neurons is called a microelectrode technique.*
d. Functional imaging

Answer: c
Difficulty: 2
Page Reference: 59
Topic: Tools for Studying the Brain
Skill: C

229. 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: 59
Topic: Tools for Studying the Brain
Skill: F

230. Microelectrode techniques are used to _____.
a. study overall activity in particular regions of the brain
Incorrect: *Overall activity in specific regions of the brain can be studied using macroelectrode techniques.*
b. study single neurons
Correct: *Single neurons are studied using microelectrode techniques.*
c. observe neural activity as it reacts to sensory stimuli
d. map structures in the living brain

Answer: b
Difficulty: 2
Page Reference: 59-60
Topic: Tools for Studying the Brain
Skill: C

231. _____ techniques are used to obtain an overall picture of activity in particular regions of the brain.
a. Microelectrode
Incorrect: *Microelectrode techniques are used to study the activity of individual neurons.*
b. Macroelectrode
Correct: *Overall activity in specific regions of the brain can be studied using macroelectrode techniques.*
c. Functional imaging
d. Structural imaging

Answer: b
Difficulty: 2
Page Reference: 60
Topic: Tools for Studying the Brain
Skill: C

232. Macroelectrode techniques are used to _____.
a. observe neural activity as it reacts to sensory stimuli
b. study single neurons
Incorrect: *Microelectrode techniques are used to study the activity of individual neurons.*
c. study overall activity in particular regions of the brain

Correct: *Overall activity in specific regions of the brain can be studied using macroelectrode techniques.*
d. map structures in the living brain

Answer: c
Difficulty: 2
Page Reference: 60
Topic: Tools for Studying the Brain
Skill: C

233. The first window into the electrical activity of a living brain was _____.
a. MEG
b. CT scanning
c. MRI
d. the EEG

Answer: d
Difficulty: 3
Page Reference: 60
Topic: Tools for Studying the Brain
Skill: F

234. Which of the following is a type of macroelectrode technique?
a. CT scanning
b. MEG
c. MRI
Incorrect: *MRI, or magnetic resonance imaging, is a type of structural imaging, not a macroelectrode technique.*
d. EEG
Correct: *The EEG, or electroencephalograph, was the first type of macroelectrode technique.*

Answer: d
Difficulty: 3
Page Reference: 60
Topic: Tools for Studying the Brain
Skill: C

235. If you wanted to measure various brain waves, which of the following techniques should you use?
a. a macroelectrode technique
Correct: *The best way to measure brain waves would be using an EEG, which is a macroelectrode technique.*
b. structural imaging
Incorrect: *Structural imaging techniques allow for the mapping of the structures of the brain, but do not examine brain wave activity.*
c. a microelectrode technique
d. functional imaging

Answer: a
Difficulty: 3
Page Reference: 60
Topic: Tools for Studying the Brain
Skill: C

236. 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. electroencephalography (EEG) imaging

c. positron emission tomography (PET) scanning
d. magnetic resonance imaging (MRI)

Answer: b
Difficulty: 3
Page Reference: 60
Topic: Tools for Studying the Brain
Skill: F

237. When brain researchers want to map the structures in a living human brain, they turn to _____.
a. structural imaging
Correct: *Structural imaging techniques allow for the mapping of the structures of the brain.*
b. macroelectrode techniques
c. functional imaging
Incorrect: *Functional imaging techniques examine the brain's activity, not just its structures. The best answer to this question is structural imaging techniques.*
d. microelectrode techniques

Answer: a
Difficulty: 2
Page Reference: 60
Topic: Tools for Studying the Brain
Skill: C

238. 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: 60
Topic: Tools for Studying the Brain
Skill: F

239. When brain researchers want to map the structures in a living human brain, they use _____.
a. an EEG
Incorrect: *An EEG is a macroelectrode technique, which is not used to map the structures of a living human brain.*
b. MEG or MSI
c. a CAT scan or an MRI
Correct: *CAT scans and MRIs are both forms of structural imaging techniques, which are used to map the structures in a living human brain.*
d. EEG imaging

Answer: c
Difficulty: 2
Page Reference: 60
Topic: Tools for Studying the Brain
Skill: C

240. 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: 60
Topic: Tools for Studying the Brain
Skill: F

241. 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: 60
Topic: Tools for Studying the Brain
Skill: F

242. Functional imaging 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: a
Difficulty: 2
Page Reference: 60
Topic: Tools for Studying the Brain
Skill: F

243. 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: 60-61
Topic: Tools for Studying the Brain
Skill: F

244. The brain scanning technique that offers the most hope for understanding disorders such as amnesia and dyslexia is _____.
a. magnetic resonance imaging (MRI)
b. magnetoencephalography (MEG)
Correct: *MEG is one technique used to understand the processes of memory and language, so this technique would help to understand such conditions as amnesia and dyslexia.*
c. electroencephalography (EEG) imaging
Incorrect: *Using an EEG to study the brain waves of a person with these conditions may serve a purpose, but MEG is the best answer.*
d. positron emission tomography (PET) scanning

Answer: b
Difficulty: 3
Page Reference: 61
Topic: Tools for Studying the Brain

Skill: A

245. The brain scanning technique that offers the most hope for understanding disorders such as amnesia and dyslexia is _____.
a. positron emission tomography (PET) scanning
b. magnetic resonance imaging (MRI)
c. electroencephalography (EEG) imaging
Incorrect: *Using an EEG to study the brain waves of a person with these conditions may serve a purpose, but MSI is the best answer.*
d. magnetic source imaging (MSI)
Correct: *MSI is one technique used to understand the processes of memory and language, so this technique would help to understand such conditions as amnesia and dyslexia.*

Answer: d
Difficulty:
Page Reference: 61
Topic: Tools for Studying the Brain
Skill: A

246. 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: 61
Topic: Tools for Studying the Brain
Skill: F

247. 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: 61
Topic: Tools for Studying the Brain
Skill: F

248. 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)
Correct: *fMRI is a functional imaging technique that has helped to determine some of the origins of ADHD.*
d. magnetic source imaging (MSI)
Incorrect: *The best answer to this question is fMRI. MSI has not been used to show the origins of ADHD.*

Answer: c
Difficulty: 3
Page Reference: 61
Topic: Tools for Studying the Brain
Skill: C

249. 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: 62
Topic: The Spinal Cord
Skill: F

250. The spinal cord is made up of soft, jellylike bundles of long _____.
a. ligaments
b. axons
Correct: *The bundling together of the axons of many different neurons makes up the spinal cord.*
c. dendrites
Incorrect: *The spinal cord is a thick cluster of bundled axons ,not dendrites.*
d. tendons

Answer: b
Difficulty: 1
Page Reference: 62
Topic: The Spinal Cord
Skill: C

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

Answer: b
Difficulty: 1
Page Reference: 62
Topic: The Spinal Cord
Skill: F

252. 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: 62
Topic: The Spinal Cord
Skill: F

253. 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: 62
Topic: The Spinal Cord
Skill: F

254. 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: 62
Topic: The Spinal Cord
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.

255. 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: 63
Topic: The Peripheral Nervous System
Skill: F

256. 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: 63
Topic: The Peripheral Nervous System
Skill: F

257. The peripheral nervous system consists of _____.
a. the brain and the autonomic system
b. all the nerve cells that are not in the brain and spinal cord
c. the spinal cord and autonomic system

d. the brain and the spinal cord

Answer: b
Difficulty: 1 4 yr.: 67% r = .31
Page Reference: 63
Topic: The Peripheral Nervous System
Skill: F

258. Neurons that carry messages from the sense organs to the spinal cord or the brain are called _____ neurons.
a. afferent
Correct: *Afferent, or sensory, neurons take messages to the central nervous system from the sensory organs.*
b. sensory
c. inter-
d. efferent
Incorrect: *Efferent, or motor, neurons take messages from the central nervous system to muscles and glands.*

Answer: a
Difficulty: 2
Page Reference: 63
Topic: The Peripheral Nervous System
Skill: C

259. 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
Correct: *Efferent, or motor, neurons take messages from the central nervous system to muscles and glands.*
d. afferent
Incorrect: *Afferent, or sensory, neurons take messages to the central nervous system from the sensory organs.*

Answer: c
Difficulty: 1
Page Reference: 63
Topic: The Peripheral Nervous System
Skill: C

260. A young woman returns from a day at the beach to find she has developed a 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: 63
Topic: The Peripheral Nervous System
Skill: A

261. 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: 63
Topic: The Peripheral Nervous System
Skill: F

262. 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: 63
Topic: The Peripheral Nervous System
Skill: A

263. 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: 63
Topic: The Peripheral Nervous System
Skill: F

264. 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: 63
Topic: The Peripheral Nervous System
Skill: F

265. 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
Correct: *All sensory input must go from our sensory systems to the brain by way of the peripheral nervous system.*
c. central
Incorrect: *Before sensory information can get to the central nervous system, it must first go through the peripheral nervous system.*
d. autonomic

Answer: b
Difficulty: 2
Page Reference: 63
Topic: The Peripheral Nervous System
Skill: A

266. 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: 63
Topic: The Peripheral Nervous System
Skill: F

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

Answer: d
Difficulty: 2
Page Reference: 63
Topic: The Peripheral Nervous System
Skill: F

268. The process of digesting your last snack or meal or the unconscious regulation of your breathing are all primarily rooted in the _____ nervous system.
a. somatic
b. limbic
c. autonomic
d. secondary

Answer: c
Difficulty: 1
Page Reference: 63
Topic: The Peripheral Nervous System
Skill: F

269. The autonomic nervous system has two divisions: _____.
a. central and peripheral
b. sympathetic and parasympathetic
c. receptors and effectors
d. limbic and endocrine

Answer: b

Difficulty: 1 4 yr.: 79% r = .35
Page Reference: 63
Topic: The Peripheral Nervous System
Skill: F

270. The branch of the autonomic nervous system that prepares the body for quick action in an emergency is the _____ division.
a. sympathetic
Correct: *The sympathetic branch of the autonomic nervous system is called the "fight or flight" system, because it helps speed you up in the case of a crisis or emergency.*
b. central
c. secondary
d. parasympathetic
Incorrect: *The parasympathetic branch of the autonomic nervous system helps to slow you down after a crisis or emergency has been resolved.*

Answer: a
Difficulty: 1
Page Reference: 63
Topic: The Peripheral Nervous System
Skill: C

271. 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: 63
Topic: The Peripheral Nervous System
Skill: F

272. The branch of the nervous system which transmits information to and from the internal organs and glands is the _____ nervous system.
a. somatic
Incorrect: *The somatic nervous system controls sensory reception and voluntary muscular coordination.*
b. central
c. autonomic
Correct: *The autonomic nervous system is responsible for controlling involuntary functions, such as those of organs and glands.*
d. tertiary

Answer: c
Difficulty: 2
Page Reference: 63
Topic: The Peripheral Nervous System
Skill: C

273. The sympathetic and parasympathetic divisions are part of the _____ nervous system.
a. autonomic
Correct: *The autonomic branch of the peripheral nervous system is divided into the sympathetic and parasympathetic divisions.*
b. central
c. tertiary
d. somatic
Incorrect: *The somatic branch of the peripheral nervous system is divided into afferent (sensory) and efferent (motor) functions.*

Answer: a
Difficulty: 2
Page Reference: 63
Topic: The Peripheral Nervous System
Skill: C

274. 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: 63-64
Topic: The Peripheral Nervous System
Skill: A

275. 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: 63-64
Topic: The Peripheral Nervous System
Skill: A

276. 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: 63-64
Topic: The Peripheral Nervous System
Skill: A

277. The deer waits motionless, hidden in the thicket as the band of hunters approaches. As they get closer, their dogs bark, picking up the scent of their prey. In a futile effort to escape, the deer bolts. Which of the following most accurately describes the nervous system of the hunted deer at this point?
a. Both its sympathetic and parasympathetic nerve fibers are equally active.
b. Its sympathetic nerve fibers are more active than its parasympathetic nerve fibers.
Correct: *The sympathetic nervous system is what stimulates and activates various physiological functions when we are faced with a crisis or emergency.*
c. Its parasympathetic nerve fibers are more active than its sympathetic nerve fibers.
Incorrect: *The parasympathetic nervous system is what decreases and slows our various physiological functions when a crisis or emergency has been resolved.*
d. Neither its sympathetic nor its parasympathetic nerve fibers are aroused.

Answer: b
Difficulty: 2
Page Reference: 63-64
Topic: The Peripheral Nervous System
Skill: A

278. 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: 63-64
Topic: The Peripheral Nervous System
Skill: A

279. The branch of the autonomic nervous system that calms and relaxes the body is the _____ division.
a. parasympathetic
Correct: *The parasympathetic branch of the autonomic nervous system helps to slow you down after a crisis or emergency has been resolved.*
b. secondary
c. sympathetic
Incorrect: *The sympathetic branch of the autonomic nervous system is called the "fight or flight" system, because it helps speed you up in the case of a crisis or emergency.*
d. central

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

280. Traditionally, _____ been considered automatic.

a. neither the sympathetic nor the parasympathetic division has
b. the parasympathetic division, but not the sympathetic division, has
c. the sympathetic division, but not the parasympathetic division, has 0
d. both the sympathetic and the parasympathetic division have

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

281. Studies in the 1960's and 1970's showed that humans and animals have _____ control over the autonomic nervous system.
a. some
b. complete
c. no
d. almost complete

Answer: a
Difficulty: 2
Page Reference: 64
Topic: The Peripheral Nervous System
Skill: F

The Endocrine System

Learning Objective

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

282. 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
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

Answer: b
Difficulty: 1 4 yr.: 72% r = .17
Page Reference: 65
Topic: The Endocrine System
Skill: F

283. 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: 65
Topic: The Endocrine System
Skill: F

284. Chemical substances released by the endocrine glands to help regulate bodily functions are _____.
a. neurotransmitters

Incorrect: *Neurotransmitters are released by neurons, not glands.*
b. enzymes
c. antigens
d. hormones
Correct: *Hormones are the chemicals that are released by glands in the endocrine system.*

Answer: d
Difficulty: 1
Page Reference: 65
Topic: The Endocrine System
Skill: C

285. 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: 65
Topic: The Endocrine System
Skill: C

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

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

287. The glands that secrete hormones directly into the bloodstream are called _____ glands.
a. hippocampal
b. endocrine
Correct: *Endocrine glands are those that secret hormones directly into the bloodstream.*
c. lymph
d. exocrine
Incorrect: *There is no such thing as an exocrine gland. The correct answer is endocrine gland.*

Answer: b
Difficulty: 1
Page Reference: 65
Topic: The Endocrine System
Skill: C

288. The chemicals responsible for such things as differences in vitality among people, rates of metabolism, sexual development, preparation for pregnancy and childbirth, and emotional balances in general are called _____.
a. neurotransmitters
Incorrect: *Neurotransmitters are not directly responsible for all of these changes, though they do play a role in several of these functions. The best answer is hormones.*

b. antigens
c. hormones
Correct: *Hormones, released by glands and controlled by the endocrine system, are responsible for all of these differences and developmental changes.*
d. enzymes

Answer: c
Difficulty: 2
Page Reference: 65
Topic: The Endocrine System
Skill: C

289. 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: 65-66
Topic: The Endocrine System
Skill: F

290. 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: 66
Topic: The Endocrine System
Skill: C

291. 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: 66
Topic: The Endocrine System
Skill: C

292. The _____ influences blood pressure, thirst, contractions of the uterus during childbirth, milk production, sexual behavior and interest, and body growth.
a. pancreas
b. thyroid gland
c. pituitary gland
d. pineal gland

Answer: c
Difficulty: 2
Page Reference: 66
Topic: The Endocrine System
Skill: F

293. 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: 66
Topic: The Endocrine System
Skill: F

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

Answer: b
Difficulty: 1
Page Reference: 66
Topic: The Endocrine System
Skill: F

295. The hormone released by the pineal gland that reduces body temperature and prepares you for sleep is _____.
a. HGH
Incorrect: *Human Growth Hormone, or HGH, is not secreted by the pineal gland.*
b. parathormone
c. melatonin
Correct: *The pineal gland secrets melatonin, which helps regulate your sleep-wake cycle.*
d. DHEA

Answer: c
Difficulty: 2
Page Reference: 66
Topic: The Endocrine System
Skill: C

296. The hormone that regulates the body's metabolic rate, affecting people's weight and energy levels, is _____.
a. insulin
Incorrect: *Insulin, which is secreted by the pancreas, is responsible for regulating levels of glucose in the blood.*
b. thyroxin
Correct: *This hormone, which is secreted by the thyroid gland, regulates the body's basic metabolic rate.*
c. glucagon
d. parathormone

Answer: b
Difficulty: 2 4 yr.: 88% r = .08

Page Reference: 66
Topic: The Endocrine System
Skill: C

297. 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
Incorrect: *The adrenal glands are located near the kidneys, not near the voice box in your throat.*
b. thyroid
Correct: *The thyroid gland regulates the body's basic metabolic rate by secreting the hormone thyroxin.*
c. pituitary
d. parathyroid

Answer: b
Difficulty: 2
Page Reference: 66
Topic: The Endocrine System
Skill: C

298. 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: 66
Topic: The Endocrine System
Skill: A

299. 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: 66
Topic: The Endocrine System
Skill: A

300. The four tiny, pea-shaped 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: 67
Topic: The Endocrine System
Skill: F

301. 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: 67
Topic: The Endocrine System
Skill: F

302. 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: 67
Topic: The Endocrine System
Skill: F

303. The organ lying between the stomach and small intestine that secretes insulin and glucagon to regulate blood-sugar levels is the _____.
a. kidney
Incorrect: *The kidney is the location where the adrenal glands are located, but the correct answer is the pancreas.*
b. liver
c. pancreas
Correct: *The pancreas, though often considered an organ, serves the purpose of a gland when it secretes the hormones insulin and glucagon.*
d. adrenal gland

Answer: c
Difficulty: 2
Page Reference: 67
Topic: The Endocrine System
Skill: C

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

Answer: c
Difficulty: 2
Page Reference: 67
Topic: The Endocrine System
Skill: F

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

Answer: c
Difficulty: 2
Page Reference: 67
Topic: The Endocrine System
Skill: F

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

Answer: a
Difficulty: 2
Page Reference: 67
Topic: The Endocrine System
Skill: F

307. The endocrine glands located just above the kidneys that release hormones important for dealing with stress are the _____.
a. pituitary glands
b. gonads
Incorrect: *The gonads are not located in the kidneys. They are located in the testes in men and the ovaries in women.*
c. parathyroid glands
d. adrenal glands
Correct: *The adrenal glands are located above the kidneys and secrete the hormone adrenaline.*

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

308. 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: 67
Topic: The Endocrine System
Skill: F

309. Each adrenal gland has _____ part(s).

a. one
b. two
c. three
d. four

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

310. The outer covering of the two adrenal glands that releases hormones important for dealing with stress is the adrenal _____.
a. simplex
b. medulla
Incorrect: *The adrenal medulla is responsible for releasing hormones in response to stress, but is located in the inner core of the adrenal gland.*
c. ganglia
d. cortex
Correct: *The adrenal cortex is the outer covering of the adrenal gland, and is responsible for releasing hormones into the bloodstream in response to stress.*

Answer: d
Difficulty: 3
Page Reference: 67
Topic: The Endocrine System
Skill: C

311. The inner core of the two adrenal glands that releases hormones important for dealing with stress is the adrenal _____.
a. simplex
b. cortex
Incorrect: *The adrenal cortex is responsible for the release of stress-related hormones, but is located on the gland's outer surface.*
c. medulla
Correct: *The adrenal medulla, located in the gland's inner core, is responsible for releasing stress-related hormones.*
d. ganglia

Answer: c
Difficulty: 3
Page Reference: 67
Topic: The Endocrine System
Skill: C

312. 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: 67
Topic: The Endocrine System
Skill: F

313. 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: 67
Topic: The Endocrine System
Skill: F

314. The gonads are _____.
a. the reproductive glands in males, but not in females
Incorrect: *The gonads are the reproductive glands in both males and females.*
b. secondary sexual characteristics
c. the reproductive glands in males and females
Correct: *The gonads include the testes in men and the ovaries in women.*
d. the reproductive glands in females, but not in males

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

315. Masculine sex hormones are called _____.
a. androgens
Correct: *Androgens refer to hormones that generally have the greatest impact on male primary and secondary sexual development.*
b. endorphins
c. estrogens
d. testosterone
Incorrect: *The best answer is androgen., of which testosterone is one.*

Answer: a
Difficulty: 2
Page Reference: 67
Topic: The Endocrine System
Skill: C

316. Feminine sex hormones are called _____.
a. estrogens
Correct: *Estrogens are the female sex hormones.*
b. androgens
Incorrect: *Androgens are the male sex hormones.*
c. enkaphalins
d. endorphins

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

317. The testes and the ovaries are _____.
a. adrenal glands
b. gonads

c. thyroid glands
d. pineal glands

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

318. If the hormone _____ is present during the third or fourth month after conception, the fetus will develop as a male; otherwise it will develop as a female.
a. testosterone
b. estrogen
c. glucagon
d. progesterone

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

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

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

320. 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: 67
Topic: The Endocrine System
Skill: F

321. Women's performance on certain tests of manual dexterity, verbal skills, and perceptual speed has been linked to levels of _____ in their system.
a. estrogen
b. testosterone
c. cortisone
d. progesterone

Answer: a
Difficulty: 2
Page Reference: 67
Topic: The Endocrine System
Skill: F

Genes, Evolution, and Behavior

Learning Objectives

- Distinguish between 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.
- 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.

322. 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: 68
Topic: Genes, Evolution, and Behavior
Skill: F

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

Answer: b
Difficulty: 1
Page Reference: 68
Topic: Genes, Evolution, and Behavior
Skill: F

324. You are walking down the street when you see a professor to whom you owe an overdue paper. As you approach each other you realize there is no graceful escape. You begin to notice your heart pounding, a cold sweat on your hands, and a knot in your stomach as the stress of the situation takes hold. Your reactions are **MOST** likely due to the activity of the _____.
a. gonads
b. pituitary gland
c. thyroid gland
d. adrenal glands

Answer: d
Difficulty: 2
Page Reference: 68-69
Topic: The Endocrine System
Skill: A

325. 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: 69
Topic: Genes, Evolution, and Behavior
Skill: F

326. The 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: 69
Topic: Genes, Evolution, and Behavior
Skill: F

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

Answer: d
Difficulty: 1
Page Reference: 69
Topic: Genes, Evolution, and Behavior
Skill: F

328. 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: 69
Topic: Genes, Evolution, and Behavior
Skill: F

329. 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
Correct: *A zygote is a one-cell fertilized ovum that, in normal circumstances, contains 23 pairs of chromosomes.*
b. blastocyst
c. genome
d. embryo
Incorrect: *An embryo is the term given to a developing child two weeks after conception. The initial fertilization results in a zygote.*

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

330. 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

331. 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

332. 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

333. The only known molecule that can replicate or reproduce itself is _____.
a. messenger RNA
b. monoamine oxidase
c. RNA
Incorrect: *RNA can have partial duplicates created, but DNA is the only cell that can completely reproduce itself.*
d. DNA
Correct: *DNA is capable of creating an exact duplicate of itself. No other cell can do this.*

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

334. 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
Incorrect: *A dominant gene can cause the expression of a trait even if it is paired with a recessive gene.*
d. recessive
Correct: *A recessive gene must be paired with another recessive gene if its trait is to be expressed.*

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

335. 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
Incorrect: *A recessive gene must be paired with another recessive gene if its trait is to be expressed.*
d. dominant
Correct: *A dominant gene can cause the expression of a trait even if it is paired with a recessive gene.*

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

336. 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: 70
Topic: Genes, Evolution, and Behavior
Skill: A

337. 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: 70
Topic: Genes, Evolution, and Behavior
Skill: A

338. 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: 70
Topic: Genes, Evolution, and Behavior
Skill: A

339. 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: 70
Topic: Genes, Evolution, and Behavior
Skill: A

340. In England in the last half of the 19th century, an individual appeared who became known as the porcupine man because of the strange warty projections on his skin. In spite of this problem, he married a normal woman and fathered six children, all of whom had the same warty projections on their skin. Of his grandchildren, some appeared normal and others had the deformity. Which of the following is the **LEAST** reasonable conclusion that can be drawn from this information?
a. The porcupine man's children carried genes for normalcy.
Incorrect: *Because some of the porcupine man's grandchildren had normal skin, this is a reasonable conclusion.*
b. Porcupine skin is recessive to normal skin.
Correct: *Based on the fact that some of the man's progeny had porcupine skin and some had normal skin, this conclusion is not supported by the facts of the question.*
c. Porcupine skin is dominant over normal skin.
d. The porcupine man's grandchildren could produce normal offspring.

Answer: b
Difficulty: 3
Page Reference: 70
Topic: Genes, Evolution, and Behavior
Skill: A

341. The life of Joseph (John) Merrick, the Elephant Man, has been publicized on stage and in film. Suppose that Merrick's deformity could be traced to a single pair of genes (which is unlikely) and that he married a normal woman. If all their children appeared normal, which of the following would be the **LEAST** reasonable conclusion that we could draw?
a. The elephant deformity is dominant over normalcy.
Correct: *If Merrick's wife had a normal appearance and their children also had a normal appearance, there would be no evidence that his deformity would be a dominant genetic characteristic.*
b. Their grandchildren could carry the gene for normal appearance.
c. Their grandchildren could carry the gene for the elephant deformity.
d. Normalcy is dominant over the elephant deformity.
Incorrect: *If Merrick's wife had a normal appearance and their children also had a normal appearance, the conclusion that normal appearance is genetically dominant in this case is supported by the data presented.*

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

342. 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: 70
Topic: Genes, Evolution, and Behavior
Skill: F

343. 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: 70
Topic: Genes, Evolution, and Behavior
Skill: C

344. An organism's entire unique genetic makeup is called its _____.
a. phenotype
Incorrect: *The outward, physical expression of a person's genetic makeup is called their phenotype.*
b. genotype
Correct: *A genotype is like a genetic blueprint.*
c. genetic imprint
d. polygenic inheritance

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

345. 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: 70
Topic: Genes, Evolution, and Behavior
Skill: F

346. The sum total of all genes within a human cell is _____.
a. polygenetic inheritance
b. the human genome
Correct: *The human genome, which consists of about 20,000 to 25,000 genes, consists of everything needed to build a human being.*
c. the human phenotype
Incorrect: *The outward, physical expression of a person's genetic makeup is called their phenotype.*
d. homogenetic inheritance

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

347. The term that refers to the full complement of an organism's genetic material is _____.
a. polygenetic inheritance
b. heritability
Incorrect: *Heritability refers to information or traits/characteristic that can be passed from parent to child. The best answer to this question is genome.*
c. genome
Correct: *The human genome, which consists of about 20,000 to 25,000 genes, consists of everything needed to build a human being.*
d. gender

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

348. 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: 71

Topic: Genes, Evolution, and Behavior
Skill: F

349. 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: 71
Topic: Genes, Evolution, and Behavior
Skill: F

350. 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: 71
Topic: Genes, Evolution, and Behavior
Skill: F

351. The central concern of behavior genetics is to _____.
a. study the process of natural selection
b. determine how experience affects genes that are then passed on to the next generation
c. determine the influence of heredity on behavior
d. control behavior through genetic manipulation

Answer: c
Difficulty: 2
Page Reference: 72
Topic: Behavior Genetics
Skill: F

352. Which of the following statements is **NOT** true?
a. Genes can directly cause behavior in some cases of drug abuse and eating disorders.
b. Genes influence the likelihood that certain behaviors will occur under certain circumstances.
c. Genes affect the development and operation of the nervous system.
d. Genes affect the development and operation of the endocrine system.

Answer: a
Difficulty: 3
Page Reference: 72
Topic: Behavior Genetics
Skill: F

353. The degree to which variations in a trait can be attributed to genetic factors is called _____.
a. heritability
Correct: *Heritability is the degree to which a trait is genetically inherited.*
b. polygenetic inheritance
Incorrect: *Polygenetic inheritance refers to the fact that a trait or characteristic may be passed via several genes, not just one.*
c. genetic dominance

d. the Law of Parsimony

Answer: a
Difficulty: 1
Page Reference: 72
Topic: Behavior Genetics
Skill: C

354. 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: 72
Topic: Behavior Genetics
Skill: F

355. Strain studies involve _____.
a. a single generation of animals
b. inbreeding of close relatives of animals over several generations
Correct: *Strain studies such as this have been used in animals to demonstrate that many different characteristics and traits are affected by heredity.*
c. adopting children with similar traits
Incorrect: *This would be an example of a situation that would be examined in an adoption study.*
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: 72
Topic: Behavior Genetics
Skill: C

356. 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: 72
Topic: Behavior Genetics
Skill: F

357. 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: 72
Topic: Behavior Genetics
Skill: C

358. 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: 2
Page Reference: 72
Topic: Behavior Genetics
Skill: C

359. 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: 72
Topic: Behavior Genetics
Skill: F

360. Fraternal twins are _____ similar genetically than are other brothers and sisters.
a. much more
b. much less
Incorrect: *Fraternal twins share the same amount of genetics as do normal non-twin siblings.*
c. no more
Correct: *Both fraternal twins and normal non-twin siblings share 50 percent of their genetic code.*
d. slightly more

Answer: c
Difficulty: 1
Page Reference: 72
Topic: Behavior Genetics
Skill: c

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

Answer: a
Difficulty: 1
Page Reference: 72

Topic: Behavior Genetics
Skill: F

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

Answer: d
Difficulty: 1
Page Reference: 72
Topic: Behavior Genetics
Skill: F

363. 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: 72-73
Topic: Behavior Genetics
Skill: F

364. 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: 72-73
Topic: Behavior Genetics
Skill: C

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

Answer: a
Difficulty: 2 4 yr.: 58% r = .32
Page Reference: 72-73
Topic: Behavior Genetics
Skill: F

366. Todd's identical twin brother suffers from schizophrenia. The odds are 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: Behavior Genetics
Skill: F

367. 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: Behavior Genetics
Skill: F

368. 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
Correct: *Adoption studies are used to determine the relative influences of genetics and environmental factors.*
c. case
d. strain
Incorrect: *Strain studies are only used on animals, not on human beings.*

Answer: b
Difficulty: 1
Page Reference: 73
Topic: Behavior Genetics
Skill: C

369. 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: Social Implications
Skill: F

370. 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
Correct: *Chorionic villus sampling is one of the two methods used to test for genetic abnormalities in kids.*

c. ultrasound
d. amniocentesis
Incorrect: *Amniocentesis is a method for testing for genetic abnormalities that draws fluid from inside of the amniotic sac, and then tests that fluid.*

Answer: b
Difficulty: 2
Page Reference: 74
Topic: Social Implications
Skill: C

371. 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
Incorrect: *Chorionic villus sampling is one of the two methods used to test for genetic abnormalities by taking cells from the membranes that surround the fetus.*
b. ultrasound
c. amniocentesis
Correct: *Amniocentesis is a method for testing for genetic abnormalities that draws fluid from inside of the amniotic sac, and then tests that fluid.*
d. intra-uterine probe testing

Answer: c
Difficulty: 2
Page Reference: 74
Topic: Social Implications
Skill: C

372. 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: Behavior Genetics
Skill: F

373. 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: Evolutionary Psychology
Skill: F

374. 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: Evolutionary Psychology
Skill: F

375. 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: 75
Topic: Evolutionary Psychology
Skill: C

376. 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: 75
Topic: Evolutionary Psychology
Skill: C

True/False

377. 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

378. The short 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

379. 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

380. 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

381. 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

382. 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: The Neural Impulse
Skill: F

383. The breakdown of the neural cell wall which allows sodium ions to enter the cell can result in an action potential.
a. True
b. False

Answer: a
Difficulty: 3
Page Reference: 44
Topic: The Neural Impulse
Skill: F

384. 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: 45
Topic: The Neural Impulse
Skill: F

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

Answer: a
Difficulty: 2
Page Reference: 45
Topic: The Neural Impulse
Skill: F

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

Answer: b
Difficulty: 3
Page Reference: 45
Topic: The Neural Impulse
Skill: F

387. 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: 45
Topic: The Synapse
Skill: F

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

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

389. Neurotransmitters always stimulate or excite the next neuron.
a. True
b. False

Answer: b
Difficulty: 1
Page Reference: 47
Topic: The Synapse
Skill: F

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

Answer: b
Difficulty: 1
Page Reference: 47
Topic: The Synapse
Skill: F

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

Answer: a
Difficulty: 2
Page Reference: 47
Topic: The Synapse
Skill: F

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

Answer: b
Difficulty: 1
Page Reference: 50
Topic: Neural Plasticity and Neurogenesis
Skill: F

393. 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: 51
Topic: The Central Nervous System
Skill: F

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

Answer: b
Difficulty: 3
Page Reference: 51
Topic: The Central Nervous System
Skill: F

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

Answer: a
Difficulty: 2
Page Reference: 52

Topic: The Brain
Skill: F

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

Answer: b
Difficulty: 2
Page Reference: 52
Topic: The Brain
Skill: F

397. 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 Brain
Skill: F

398. The largest of the association areas, accounting for about half the volume of the cerebral cortex, is the frontal lobe.
a. True
b. False

Answer: a
Difficulty: 2
Page Reference: 53
Topic: The Brain
Skill: F

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

Answer: b
Difficulty: 1
Page Reference: 54
Topic: The Brain
Skill: F

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

Answer: a
Difficulty: 3
Page Reference: 55-56
Topic: The Brain
Skill: F

401. 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: 56
Topic: Hemispheric Specialization
Skill: F

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

Answer: a
Difficulty: 1
Page Reference: 56
Topic: Hemispheric Specialization
Skill: F

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

Answer: b
Difficulty: 3
Page Reference: 56-57
Topic: Hemispheric Specialization
Skill: F

404. 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: 57
Topic: Hemispheric Specialization
Skill: F

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

Answer: b
Difficulty: 2
Page Reference: 58
Topic: Hemispheric Specialization
Skill: F

406. 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: 58-59
Topic: Hemispheric Specialization
Skill: F

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

Answer: b
Difficulty: 3
Page Reference: 60-61
Topic: Tools for Studying the Brain
Skill: F

408. The brains of people with higher IQ scores are less active than those of people with lower IQ scores.
a. True
b. False

Answer: a
Difficulty: 3
Page Reference: 61
Topic: Tools for Studying the Brain
Skill: F

409. 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: 62
Topic: The Spinal Cord
Skill: F

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

Answer: a
Difficulty: 2
Page Reference: 63
Topic: The Peripheral Nervous System
Skill: F

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

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

412. 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: 63
Topic: The Spinal Cord
Skill: F

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

Answer: b
Difficulty: 2
Page Reference: 64
Topic: The Spinal Cord
Skill: F

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

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

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

Answer: a
Difficulty: 2
Page Reference: 66
Topic: The Endocrine System
Skill: F

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

Answer: b
Difficulty: 3
Page Reference: 67
Topic: The Endocrine System
Skill: F

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

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

418. Estrogen has been linked to aggressive behavior in both males and females.

a. True
b. False

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

419. 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

420. A number of genes making a small contribution to a trait is known as mixed dominance.
a. True
b. False

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

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

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

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

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

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

Answer: a
Difficulty: 1
Page Reference: 72
Topic: Behavior Genetics
Skill: F

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

Answer: b
Difficulty: 2
Page Reference: 72
Topic: Behavior Genetics
Skill: F

425. 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: 72-73
Topic: Behavior Genetics
Skill: F

426. Science is simply a process that takes place in a laboratory.
a. True
b. False

Answer: b
Difficulty: 1
Page Reference: 74
Topic: Behavior Genetics
Skill: F

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

Answer: a
Difficulty: 1
Page Reference: 74
Topic: Behavior Genetics
Skill: F

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

Answer: a
Difficulty: 2
Page Reference: 75
Topic: Evolutionary Psychology
Skill: F

Essay

429. 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: C

430. 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: 44-45
Topic: The Neural Impulse
Skill: F

431. 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: 46-47
Topic: The Synapse
Skill: F

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

Answer:
Difficulty: 3
Page Reference: 47-48
Topic: The Synapse
Skill: F

433. Specifically discuss how cocaine, curare, caffeine, opiates, and botulism block or disrupt neural communication.

Answer:
Difficulty: 3
Page Reference: 48
Topic: The Synapse
Skill: F

434. 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: 48-50
Topic: Neural Plasticity and Neurogenesis
Skill: C

435. Describe the location and functioning of the medulla, cerebellum, thalamus, hypothalamus, and cerebral cortex.

Answer:
Difficulty: 3
Page Reference: 51-55
Topic: The Brain
Skill: F

436. 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: 52, 55-56
Topic: The Brain
Skill: F

437. 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: 54-56
Topic: The Brain
Skill: F

438. 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: 56-59
Topic: Hemispheric Specialization
Skill: F

439. 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: 58-59
Topic: Hemispheric Specialization
Skill: F

440. Summarize research findings about left-handedness and its causes.

Answer:
Difficulty: 2
Page Reference: 59
Topic: Hemispheric Specialization
Skill: F

441. 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: 59-61
Topic: Tools for Studying the Brain
Skill: C

442. 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: 61-62
Topic: The Spinal Cord
Skill: F

443. Compare and contrast the functions of the autonomic nervous system and the somatic nervous system.

Answer:
Difficulty: 2
Page Reference: 63-64
Topic: The Peripheral Nervous System
Skill: F

444. 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: 63-64
Topic: The Peripheral Nervous System
Skill: F

445. 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: 65-67
Topic: The Endocrine System
Skill: F

446. Define genes, chromosomes, and DNA and describe their role in the genetic transmission of traits.

Answer:
Difficulty: 3
Page Reference: 69-70
Topic: Genes, Evolution, and Behavior
Skill: C

447. 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: 70
Topic: Genes, Evolution, and Behavior
Skill: A

448. 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: 71-74
Topic: Genes, Evolution, and Behavior
Skill: F

449. 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: 72
Topic: Behavior Genetics
Skill: C

450. 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: 72-73
Topic: Behavior Genetics
Skill: C

451. 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: Evolutionary Psychology
Skill: C