

Chapter 3 Multiple-Choice Items

MULTIPLE CHOICE

1. The cells of the nervous system that do the work of receiving, integrating, and transmitting information are the
- neurilemma.
 - glia.
 - neuroblasts.
 - neurons.

ANS: D PTS: 1 DIF: Correct = 94%
 REF: Communication in the Nervous System OBJ: 3.1
 KEY: Factual

2. Which of the following is NOT one of the main functions of neurons?
- receiving information
 - generating information
 - transmitting information
 - integrating information

ANS: B PTS: 1 DIF: Correct = 82%
 REF: Communication in the Nervous System OBJ: 3.1
 KEY: Concept/Applied

3. Emma has multiple sclerosis. If you could view her nervous system, you would find
- a lack of neurotransmitters in some neurons.
 - areas where the myelin sheath has degenerated.
 - areas where the dendrites are severely damaged.
 - a reduction in the number of chloride ions in her peripheral nervous system.

ANS: B PTS: 1 REF: Communication in the Nervous System
 OBJ: 3.1 KEY: Concept/Applied

4. In computers, when the print command is executed, a cable carries this signal from the computer to the printer. In comparing a computer to a neuron, the cable that carries the signal between the computer and the printer would be equivalent to
- a refractory potential.
 - the axon.
 - the dendrites.
 - the soma.

ANS: B PTS: 1 REF: Communication in the Nervous System
 OBJ: 3.1 KEY: Critical Thinking

5. The correct order that information passes through in a neuron is
- dendrite, soma, axon.
 - axon, soma, dendrite.
 - dendrite, axon, soma.
 - axon, dendrite, soma.

ANS: A PTS: 1 REF: Communication in the Nervous System
 OBJ: 3.1 KEY: Factual

6. The main function of dendrites is to
- a. support and insulate the neuron.
 - b. release neurotransmitters.
 - c. transmit information.
 - d. receive information.

ANS: D PTS: 1 REF: Communication in the Nervous System
OBJ: 3.1 TOP: WWW KEY: Factual

7. Information is received by a neuron through the ____ and is transmitted toward other neurons through the ____.
- a. dendrites; soma
 - b. dendrites; axon
 - c. axon; dendrites
 - d. soma; axon

ANS: B PTS: 1 REF: Communication in the Nervous System
OBJ: 3.1 KEY: Factual

8. The part of a neuron that transmits information away from the neuron and toward another neuron is the
- a. synapse.
 - b. soma.
 - c. dendrites.
 - d. axon.

ANS: D PTS: 1 REF: Communication in the Nervous System
OBJ: 3.1 KEY: Factual

9. The insulation that covers some axons and increases the speed of transmission of the neural impulse is the
- a. neurotransmitter sheath.
 - b. myelin sheath.
 - c. glia wrap.
 - d. terminal cover.

ANS: B PTS: 1 REF: Communication in the Nervous System
OBJ: 3.1 KEY: Factual

10. Terminal buttons are located
- a. in the synaptic cleft.
 - b. on the soma.
 - c. at the end of dendrites.
 - d. at the end of axons.

ANS: D PTS: 1 REF: Communication in the Nervous System
OBJ: 3.1 KEY: Factual

11. The chemicals that are secreted from the terminal buttons into the synapse are
- a. neurotransmitters.
 - b. action potentials.
 - c. antagonists.
 - d. agonists.

ANS: A PTS: 1 REF: Communication in the Nervous System

OBJ: 3.1 KEY: Factual

12. The cells that provide nourishment and insulation for neurons are called
- glia.
 - somata.
 - neuromodulators.
 - dendrites.

ANS: A PTS: 1 DIF: Correct = 80%
REF: Communication in the Nervous System OBJ: 3.1
KEY: Factual

13. Cells found in the nervous system that insulate, nourish, and direct the growth of neurons as well as remove dead neurons and waste products are known as
- neurotransmitters.
 - myelin sheaths.
 - glia.
 - synapses.

ANS: C PTS: 1 REF: Communication in the Nervous System
OBJ: 3.1 KEY: Factual

14. The difference in the flow rates of sodium and potassium ions across the cell membrane leads to
- a slightly higher concentration of negatively charged ions inside the cell.
 - a negatively charged action potential.
 - a slightly lower concentration of negatively charged ions inside the cell.
 - both a negatively charged action potential and a slightly lower concentration of negatively charged ions inside the cell.

ANS: A PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Critical Thinking

15. The tiny electrical charge that exists when a neuron is NOT receiving or sending information is called
- an action potential.
 - a synaptic gap.
 - a resting potential.
 - a postsynaptic potential.

ANS: C PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Factual

16. The electrical charge that exists between the inside and the outside of a neuron when the neuron is neither receiving nor sending is approximately
- 1,000 millivolts.
 - +60 to +70 millivolts.
 - 60 to -70 millivolts.
 - +1,000 millivolts.

ANS: C PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Factual

17. Bradley is deeply relaxed and his muscles are not moving at all. This suggests that, for Bradley's motor neurons,
- sodium ions are concentrated inside the neurons and potassium ions are concentrated outside the neurons.
 - sodium ions and potassium ions are both concentrated inside the neurons.
 - sodium ions and potassium ions are both concentrated outside the neurons.
 - sodium ions are concentrated outside the neurons and potassium ions are concentrated inside the neurons.

ANS: D PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Concept/Applied

18. Neurotransmitters are secreted from the
- myelin sheath.
 - terminal buttons.
 - neuromodulators.
 - dendrites.

ANS: B PTS: 1 DIF: Correct = 60%
REF: Communication in the Nervous System OBJ: 3.1
TOP: WWW KEY: Factual

19. An action potential is
- the tiny electrical charge that exists when a neuron is neither receiving nor sending information.
 - an electrical signal that travels along the axon of a neuron.
 - the small gap that exists between adjacent neurons.
 - an electrical signal that travels along the dendrites of a neuron.

ANS: B PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Factual

20. Leonard's mother became dehydrated during a recent illness, and the levels of sodium in her body were significantly reduced. If enough sodium was lost, you might expect that
- her nervous system would become highly activated and action potentials would be generated continuously.
 - fewer action potentials would occur in her nervous system.
 - more neurotransmitters would be produced in her terminal buttons.
 - glial cells would start to degenerate and die.

ANS: B PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Critical Thinking

21. The minimum length of time between action potentials is determined by
- transduction capacity.
 - transduction incapacity.
 - the absolute refractory period.
 - the relative threshold period.

ANS: C PTS: 1 DIF: Correct = 81%
REF: Communication in the Nervous System OBJ: 3.2
KEY: Factual

22. The neurons in Michael's arm just sent a neural impulse. It will be 1–2 milliseconds before another neural impulse can be generated. This brief time period, when another neural impulse cannot occur, is called the
- all-or-none period.
 - absolute refractory period.
 - resting potential.
 - postsynaptic discharge.

ANS: B PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Concept/Applied

23. Sara is holding Scott's hand during a scary movie. Suddenly, she squeezes his hand very hard. When she does this, the neurons in Scott's hand will
- start to fire at a faster rate.
 - send stronger signals to his central nervous system.
 - enter an absolute refractory period.
 - release more chloride ions.

ANS: A PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Critical Thinking

24. Fiona puts her hands into a sinkful of lukewarm water; Luke puts his hands into a sinkful of cold water. Based on what is known about neural transmission, you could predict that the action potentials will
- travel more quickly in Luke's system because the stimulus is more intense.
 - be weaker in Fiona's system because the stimulus is less intense.
 - be the same in both individuals due to the all-or-none principle.
 - travel a shorter distance in Luke's system because the stimulus is more intense.

ANS: C PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Critical Thinking

25. Peggy smells a very strong odor; Harry smells an odor that is barely detectable. Based on what is known about neural transmission, you could predict that the action potentials will
- travel more quickly in Peggy's system because the stimulus is more intense.
 - be weaker in Harry's system because the stimulus is less intense.
 - travel a shorter distance in Peggy's system because the stimulus is more intense.
 - be the same in both individuals due to the all-or-none principle.

ANS: D PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Critical Thinking

26. As a neuron is stimulated and starts to receive information, the neuron's electrical charge
- becomes less negative.
 - becomes more negative.
 - immediately becomes positive.
 - immediately affects the next neuron.

ANS: A PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 TOP: WWW KEY: Factual

27. When a neuron is firing its action potential, the neuron's electrical charge is
- negative and travels along the axon.
 - negative and travels along the dendrite.
 - positive and travels along the axon.
 - positive and travels along the dendrite.

ANS: C PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Factual

28. According to the ____ law, a neuron fires an action potential at only one level of intensity.
- all-or-none
 - threshold
 - refractory
 - action

ANS: A PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Factual

29. An impulse moves from one neuron to another through the action of
- neurotransmitters.
 - hormones.
 - action potentials.
 - neuromodulators.

ANS: A PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Factual

30. Synaptic vesicles are structures that
- control the speed with which a neuron fires.
 - manufacture myelin.
 - store neurotransmitters.
 - provide energy for a neuron's activity.

ANS: C PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Factual

31. The microscopic gap between the terminal buttons of one neuron and the cell membrane of another neuron is the
- neurotransmitter cleft.
 - synaptic cleft.
 - presynaptic space.
 - postsynaptic space.

ANS: B PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Factual

32. What event causes the release of neurotransmitters into the synaptic cleft?
- The arrival of the action potential at the postsynaptic neuron.
 - The arrival of the resting potential at the postsynaptic neuron.
 - The arrival of the action potential at the terminal buttons.
 - The arrival of the resting potential at the terminal buttons.

ANS: C PTS: 1 REF: Communication in the Nervous System

OBJ: 3.2 KEY: Factual

33. An electric potential that increases the likelihood that the postsynaptic neuron will fire is called an
- all-or-none potential.
 - inhibitory postsynaptic potential.
 - excitatory postsynaptic potential.
 - excitatory presynaptic potential.

ANS: C PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Factual

34. Reabsorption of neurotransmitters into the presynaptic neuron is referred to as
- cyclomyosis.
 - regrading.
 - uploading.
 - reuptake.

ANS: D PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Factual

35. The elimination of old, less active synapses is known as
- synaptic reuptake.
 - synaptic pruning.
 - neurogenesis.
 - synaptic sculpting.

ANS: B PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Factual

36. A postsynaptic potential occurs when
- neurotransmitters are released into the synaptic cleft.
 - neurotransmitters are reabsorbed into the terminal buttons.
 - neurotransmitters bind or attach to receptor sites on the postsynaptic neuron.
 - neurotransmitters bind or attach to receptor sites on the presynaptic neuron.

ANS: C PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Factual

37. If inhibitory postsynaptic potentials did not exist,
- it would be “easier” for a neuron to fire its action potential.
 - it would be “harder” for a neuron to fire its action potential.
 - there would not be any effect on the ease at which a neuron fires its action potential.
 - it would be impossible for neural impulses to travel across the synapse.

ANS: A PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2 KEY: Critical Thinking

38. Jeremy is sitting quietly when the muscles in his left leg begin to “twitch.” This activation of movement in his voluntary muscles is most likely due to the release of the neurotransmitter
- serotonin.
 - dopamine.
 - acetylcholine.
 - norepinephrine.

ANS: C PTS: 1 REF: Communication in the Nervous System
OBJ: 3.3 KEY: Critical Thinking

39. Dr. Jacoby has just discovered a new drug that blocks the action of acetylcholine. It is likely that this new drug will produce side effects such as
- general stimulation within the body and an increase in heart rate.
 - paralysis and memory loss.
 - anxiety reduction and general relaxation.
 - hallucinations and disrupted sleep patterns.

ANS: B PTS: 1 REF: Communication in the Nervous System
OBJ: 3.3 KEY: Concept/Applied

40. In Parkinsonism, the tremors, muscular rigidity, and reduced control over voluntary movements appears to be a function of
- damage to glia cells.
 - degeneration of neurons that use dopamine as a neurotransmitter.
 - agonistic chemical action on the receptor sites of the cerebrum.
 - enzymatic deficiency that does not allow for the proper cleanup of waste products in the nervous system.

ANS: B PTS: 1 REF: Communication in the Nervous System
OBJ: 3.3 KEY: Concept/Applied

41. Dr. Seelig has just discovered a new drug that produces schizophrenic-like side effects. Based on this information, Dr. Seelig's drug may be acting on which neurotransmitter?
- dopamine
 - GABA
 - serotonin
 - endorphins

ANS: A PTS: 1 REF: Communication in the Nervous System
OBJ: 3.3 KEY: Concept/Applied

42. Kesha has just begun taking a new drug that produces side effects like muscular rigidity and tremors. Based on this information, Kesha's drug may be acting on her _____ system.
- dopamine
 - GABA
 - endorphin
 - episodic

ANS: D PTS: 1 REF: Communication in the Nervous System
OBJ: 3.3 KEY: Concept/Applied

43. Abnormalities at norepinephrine and serotonin synapses appear to play a role in which of the following?
- hyperactivity
 - depression
 - high anxiety
 - increased appetite

ANS: B PTS: 1 REF: Communication in the Nervous System
OBJ: 3.3 KEY: Factual

44. Some theorists believe that the rewarding effects of most abused drugs depend on
- decreased activity in specific dopamine pathways.
 - decreased activity in specific glutamate pathways.
 - increased activity in specific glutamate pathways.
 - increased activity in specific dopamine pathways.

ANS: D PTS: 1 REF: Communication in the Nervous System
OBJ: 3.3 KEY: Factual

45. The neurotransmitter(s) released by motor neurons that results in movement of the voluntary muscles is(are)
- endorphins.
 - monoamines.
 - acetylcholine.
 - dopamine.

ANS: C PTS: 1 REF: Communication in the Nervous System
OBJ: 3.3 KEY: Factual

46. People sometimes report a feeling of euphoria following a period of vigorous exercise. This is MOST likely due to the effects of
- endorphins.
 - dopamine.
 - acetylcholine.
 - norepinephrine.

ANS: A PTS: 1 REF: Communication in the Nervous System
OBJ: 3.3 TOP: Concept/Applied

47. Which of the following neurotransmitters is NOT a monoamine?
- norepinephrine
 - serotonin
 - dopamine
 - acetylcholine

ANS: D PTS: 1 REF: Communication in the Nervous System
OBJ: 3.3 KEY: Factual

48. Monoamines have been associated with all of the following EXCEPT
- aggressive behavior.
 - pain reduction.
 - schizophrenia.
 - depression.

ANS: B PTS: 1 REF: Communication in the Nervous System
OBJ: 3.3 KEY: Critical Thinking

49. The neurotransmitter believed to be associated with schizophrenia is
- dopamine.
 - acetylcholine.

- c. endorphin.
- d. serotonin.

ANS: A PTS: 1 REF: Communication in the Nervous System
OBJ: 3.3 TOP: WWW KEY: Factual

50. Dr. Athorp has just discovered a new drug that mimics the effects of GABA. It is likely that this new drug will produce side effects such as
- a. general stimulation within the body and an increase in heart rate.
 - b. anxiety reduction and general relaxation.
 - c. a reduction in pain and a sense of euphoria.
 - d. hallucinations and disrupted sleep patterns.

ANS: B PTS: 1 REF: Communication in the Nervous System
OBJ: 3.3 KEY: Critical Thinking

51. Opiate drugs bind onto the same receptor sites as the body's own endorphins. Therefore, opiate drugs tend to
- a. reduce anxiety.
 - b. produce sleepiness.
 - c. increase anxiety and agitation.
 - d. relieve pain.

ANS: D PTS: 1 REF: Communication in the Nervous System
OBJ: 3.3 KEY: Concept/Applied

52. Chemicals produced in the body that resemble opiates are
- a. endorphins.
 - b. dopamines.
 - c. biogenic amines.
 - d. acetylcholines.

ANS: A PTS: 1 DIF: Correct = 77%
REF: Communication in the Nervous System OBJ: 3.3
KEY: Factual

53. Research suggests that the body's endogenous opioids may contribute to all of the following EXCEPT
- a. the modulation of eating behavior.
 - b. the regulation of sleep.
 - c. the body's response to stress.
 - d. the modulation of pain.

ANS: B PTS: 1 REF: Communication in the Nervous System
OBJ: 3.3 KEY: Factual

54. The two most basic divisions of the nervous system are the
- a. sympathetic division and the parasympathetic division.
 - b. central nervous system and the peripheral nervous system.
 - c. somatic nervous system and the autonomic nervous system.
 - d. brain and the spinal cord.

ANS: B PTS: 1 REF: Organization of the Nervous System
OBJ: 3.4 KEY: Factual

55. Nerves outside the skull and spine comprise the

- a. peripheral nervous system.
- b. vascular nervous system.
- c. vagus nervous system.
- d. skeletal nervous system.

ANS: A PTS: 1 DIF: Correct = 76%
REF: Organization of the Nervous System OBJ: 3.4
KEY: Factual

56. The somatic nervous system and the autonomic nervous system comprise the

- a. central nervous system.
- b. peripheral nervous system.
- c. skeletal nervous system.
- d. afferent nervous system.

ANS: B PTS: 1 REF: Organization of the Nervous System
OBJ: 3.4 KEY: Factual

57. Sensory information is carried from your eyes to your brain by way of

- a. afferent fibers.
- b. autonomic fibers.
- c. efferent fibers.
- d. motor fibers.

ANS: A PTS: 1 REF: Organization of the Nervous System
OBJ: 3.4 KEY: Factual

58. ____ nerves receive information, while ____ nerves carry out instructions.

- a. Afferent; efferent
- b. Motor; sensory
- c. Somatic; autonomic
- d. Autonomic; skeletal

ANS: A PTS: 1 DIF: Correct = 50%
REF: Organization of the Nervous System OBJ: 3.4
KEY: Factual

59. When you are walking, the brain sends messages to the skeletal muscles in the legs by way of

- a. efferent fibers.
- b. sensory fibers.
- c. afferent fibers.
- d. central fibers.

ANS: A PTS: 1 DIF: Correct = 32%
REF: Organization of the Nervous System OBJ: 3.4
KEY: Concept/Applied

60. The movement of voluntary skeletal muscles involved in doing calisthenics is under the control of the
- somatic nervous system.
 - parasympathetic nervous system.
 - sympathetic nervous system.
 - autonomic nervous system.

ANS: A PTS: 1 DIF: Correct = 63%
REF: Organization of the Nervous System OBJ: 3.4
KEY: Concept/Applied

61. The part of the nervous system that controls digestion and blood flow is the
- somatic nervous system.
 - motor nervous system.
 - sensory nervous system.
 - autonomic nervous system.

ANS: D PTS: 1 REF: Organization of the Nervous System
OBJ: 3.4 KEY: Factual

62. The ____ nervous system mobilizes the body when one needs to exert tremendous energy (such as flee from an attacker).
- somatic
 - central
 - sympathetic
 - parasympathetic

ANS: C PTS: 1 REF: Organization of the Nervous System
OBJ: 3.4 KEY: Factual

63. Sam is highly relaxed. His blood pressure and heart rate are lower than usual. This relaxation response was most likely the result of activity in his
- somatic nervous system.
 - sympathetic nervous system.
 - parasympathetic nervous system.
 - central nervous system.

ANS: C PTS: 1 REF: Organization of the Nervous System
OBJ: 3.4 KEY: Concept/Applied

64. Edmund was walking down a dark street when he heard a car backfire. His heart started to race and he began to perspire in response to this sudden, startling noise. These physical reactions were triggered by Edmund's
- parasympathetic nervous system.
 - somatic nervous system.
 - sympathetic nervous system.
 - cerebellum.

ANS: C PTS: 1 REF: Organization of the Nervous System
OBJ: 3.4 KEY: Concept/Applied

65. The ____ is most likely to be in control of bodily processes during periods of rest and recovery for the body.
- somatic nervous system
 - sympathetic nervous system
 - parasympathetic nervous system
 - hypothalamus

ANS: C PTS: 1 DIF: Correct = 67%
REF: Organization of the Nervous System OBJ: 3.4
KEY: Factual

66. Which of the following individuals is likely to be at the HIGHEST level of sympathetic arousal?
- Melissa, who is daydreaming and staring out the window
 - Keith, who is concentrating on a lecturer and taking careful notes
 - Professor Trong, who is lecturing
 - Bill, who is anticipating an exam he will take within the hour and for which he is unprepared

ANS: D PTS: 1 REF: Organization of the Nervous System
OBJ: 3.4 KEY: Concept/Applied

67. Handyman Bob just hit his thumb with a hammer; the sensation will be transmitted to the central nervous system by ____ nerve fibers.
- afferent
 - efferent
 - autonomic
 - sympathetic

ANS: A PTS: 1 REF: Organization of the Nervous System
OBJ: 3.4 KEY: Concept/Applied

68. Efferent nerve fibers transmit messages ____ the brain and spinal cord.
- within or between
 - away from
 - toward
 - away from and toward

ANS: B PTS: 1 REF: Organization of the Nervous System
OBJ: 3.4 KEY: Concept/Applied

69. The heart, glands, and smooth muscles are controlled by the
- peripheral nervous system.
 - somatic nervous system.
 - efferent nervous system.
 - autonomic nervous system.

ANS: D PTS: 1 REF: Organization of the Nervous System

OBJ: 3.4

KEY: Factual

70. The “fight or flight” response is a direct result of activation of the
- afferent nervous system.
 - efferent nervous system.
 - sympathetic nervous system.
 - parasympathetic nervous system.

ANS: C

PTS: 1

REF: Organization of the Nervous System

OBJ: 3.4

TOP: WWW

KEY: Factual

71. While the ____ nervous system is associated with conserving bodily resources, the ____ nervous system mobilizes the body’s resources for emergencies.
- parasympathetic; sympathetic
 - sympathetic; parasympathetic
 - peripheral; central
 - central; peripheral

ANS: A

PTS: 1

REF: Organization of the Nervous System

OBJ: 3.4

KEY: Factual

72. The central nervous system consists of
- the body’s sensory and motor neurons.
 - the brain and the spinal cord.
 - the somatic and autonomic nervous systems.
 - the sympathetic and parasympathetic nervous systems.

ANS: B

PTS: 1

REF: Organization of the Nervous System

OBJ: 3.4

KEY: Factual

73. The ____ fluid nourishes the brain and provides a protective cushion for it.
- amniotic
 - cerebrospinal
 - parasympathetic
 - somatic

ANS: B

PTS: 1

DIF: Correct = 64%

REF: Organization of the Nervous System

OBJ: 3.4

KEY: Factual

74. Destroying a piece of brain tissue to observe its effect on behavior is referred to as which of the following?
- ESB
 - lesioning
 - tumor ligation
 - stereotaxic inversion

ANS: B

PTS: 1

DIF: Correct = 93%

75. Which of the following research techniques is LEAST likely to be used to study the human brain?
- electrical stimulation
 - magnetic resonance imaging
 - lesioning
 - positron emission tomography

ANS: C PTS: 1 REF: The Brain and Behavior
OBJ: 3.5 KEY: Critical Thinking

76. Electrical stimulation of its lateral hypothalamus causes an animal to overeat and become obese. Therefore, we would expect that lesioning the lateral hypothalamus would produce
- overeating and obesity.
 - undereating and weight loss.
 - no effect on eating or body weight.
 - alternating periods of overeating and undereating.

ANS: B PTS: 1 DIF: Correct = 87%
REF: The Brain and Behavior OBJ: 3.5 KEY: Critical Thinking

77. Electrical stimulation of the brain involves
- sending a weak electric current into a brain structure to stimulate or activate the structure.
 - monitoring the electrical activity of the brain over time.
 - visualizing the three-dimensional structure of the brain.
 - destroying a piece of the brain.

ANS: A PTS: 1 REF: The Brain and Behavior
OBJ: 3.5 KEY: Factual

78. Sigourney's doctors think she might have a tumor, and they would like to use a brain-imaging technique that will provide them with an accurate image of her brain structure. The technique that they are most likely to use would be
- a positron emission tomography (PET) scan.
 - a computerized tomography (CT) scan.
 - electrical stimulation of the brain (ESB).
 - an electroencephalograph (EEG) recording.

ANS: B PTS: 1 REF: The Brain and Behavior
OBJ: 3.5 KEY: Concept/Applied

79. The technique in which radioactive markers are introduced into the brain and then equipment monitors where the chemicals appear in the brain is
- computerized tomography.
 - positron emission tomography.
 - magnetic resonance imaging.
 - electrographic tomography.

ANS: B
OBJ: 3.5

PTS: 1
KEY: Factual

REF: The Brain and Behavior

80. The brain-imaging method that uses multiple X-rays to generate a picture of a horizontal slice of the brain is
- an electroencephalograph.
 - computerized tomography.
 - stereotaxic instrumentation.
 - EKG.

ANS: B
OBJ: 3.5

PTS: 1
KEY: Factual

REF: The Brain and Behavior

81. Which of the following techniques is likely to be MOST useful for mapping chemical activity in the brain over time?
- computerized tomography
 - positron emission tomography
 - magnetic resonance imaging
 - electrographic tomography

ANS: B
REF: The Brain and Behavior

PTS: 1
KEY: Concept/Applied

DIF: Correct = 37%
OBJ: 3.5

KEY: Concept/Applied

82. Milo's doctors believe he might have schizophrenia, but before they make their final diagnosis, they want to study detailed, three-dimensional images of Milo's brain structures. The technique the doctors are most likely to use in this case would be
- electrical stimulation of the brain (ESB).
 - a magnetic resonance imaging (MRI) scan.
 - a positron emission tomography (PET) scan.
 - an electroencephalograph (EEG) recording.

ANS: B
OBJ: 3.5

PTS: 1
KEY: Concept/Applied

REF: The Brain and Behavior

83. Which procedure results in a high-quality, three-dimensional picture of the brain?
- MRI scan
 - ESB scan
 - PET scan
 - TMS scan

ANS: A
OBJ: 3.5

PTS: 1
TOP: WWW

REF: The Brain and Behavior
KEY: Factual

84. Which two procedures allow researchers to visualize changes in brain activity over time?
- PET scan and CT
 - PET scan and fMRI
 - MRI and fMRI
 - CT scan and MRI

ANS: B
OBJ: 3.5

PTS: 1
KEY: Factual

REF: The Brain and Behavior

85. Which of the following structures is NOT part of the hindbrain?

- a. cerebellum
- b. thalamus
- c. medulla
- d. pons

ANS: B
REF: The Brain and Behavior

PTS: 1

DIF: Correct = 77%

OBJ: 3.6
KEY: Factual

86. The brain structure that controls unconscious but essential functions such as breathing and circulation is the

- a. pons.
- b. medulla.
- c. cerebellum.
- d. corpus callosum.

ANS: B
REF: The Brain and Behavior

PTS: 1

DIF: Correct = 57%

OBJ: 3.6
KEY: Factual

87. Ian has remained in a coma after a serious dive accident. He is still on medical life support because he is unable to breathe and his heart will not beat without assistance. It is likely that the accident caused damage to Ian's

- a. medulla.
- b. hypothalamus.
- c. cerebellum.
- d. midbrain.

ANS: A
OBJ: 3.6

PTS: 1

REF: The Brain and Behavior

KEY: Critical Thinking

88. In carrying out the "fight or flight" response, the role of supervisor is assigned to the

- a. adrenal gland.
- b. pituitary gland.
- c. hypothalamus.
- d. parasympathetic nervous system.

ANS: C
OBJ: 3.6

PTS: 1

REF: The Brain and Behavior

KEY: Factual

89. The brain structure responsible for the coordination of motor movements and sense of equilibrium is the

- a. hypothalamus.
- b. cerebrum.
- c. pons.
- d. cerebellum.

ANS: D
OBJ: 3.6

PTS: 1
KEY: Factual

REF: The Brain and Behavior

90. Van has had difficulty sleeping since he took a hard hit to his head in a football game this fall. Van has MOST likely sustained damage to his
- medulla.
 - hypothalamus.
 - cerebellum.
 - reticular formation.

ANS: D
OBJ: 3.6

PTS: 1
KEY: Critical Thinking

REF: The Brain and Behavior

91. The hindbrain structure involved with sleep and arousal is the
- hypothalamus.
 - cerebrum.
 - thalamus.
 - pons.

ANS: D
REF: The Brain and Behavior

PTS: 1

DIF: Correct = 40%

OBJ: 3.6
KEY: Factual

92. Damage to the cerebellum is MOST likely to result in
- problems with coordination of movement.
 - impairment of short-term memory.
 - difficulties in judging distance.
 - eating irregularities.

ANS: A
OBJ: 3.6

PTS: 1
KEY: Factual

REF: The Brain and Behavior

93. The drunken driving suspect was unable to hold his hand out to the side and bring his finger to a stop on his nose because one of the brain structures depressed first by alcohol is the
- cerebellum.
 - corpus callosum.
 - hypothalamus.
 - medulla.

ANS: A
REF: The Brain and Behavior

PTS: 1

DIF: Correct = 61%

OBJ: 3.6
KEY: Concept/Applied

94. Wanda fell down some stairs and hit her head. Prior to her accident, she was an excellent flute player, but she now has difficulty coordinating the finger movements required in complex musical pieces. It is likely that in the fall, Wanda damaged her
- reticular formation.
 - amygdala.
 - cerebellum.
 - temporal lobe.

ANS: C PTS: 1 REF: The Brain and Behavior
OBJ: 3.6 KEY: Concept/Applied

95. The dopamine system involved in Parkinson's disease is located in which of the following areas of the brain?
- brainstem
 - hindbrain
 - midbrain
 - forebrain

ANS: C PTS: 1 REF: The Brain and Behavior
OBJ: 3.6 KEY: Factual

96. Which brain structure appears to play an active role in integrating sensory information?
- hypothalamus
 - limbic system
 - thalamus
 - cerebrum

ANS: C PTS: 1 DIF: Correct = 40%
REF: The Brain and Behavior OBJ: 3.6 KEY: Factual

97. Elizabeth just caught sight of a red hummingbird. The neural impulses from her eye will eventually travel to her occipital lobe, but first they must pass through
- the hypothalamus.
 - the thalamus.
 - the reticular formation.
 - the amygdale.

ANS: B PTS: 1 REF: The Brain and Behavior
OBJ: 3.6 KEY: Critical Thinking

98. Bonnie has a disease that disrupts the functioning of her hypothalamus. With which of the following areas of functioning is she likely to have serious difficulty?
- Reading, writing, and tasting.
 - Thinking, problem-solving, and hearing.
 - Eating, drinking, and body temperature control.
 - Tasting and controlling fine motor movements.

ANS: C PTS: 1 REF: The Brain and Behavior
OBJ: 3.6 KEY: Critical Thinking

99. The brain structure that appears to play a vital role in the regulation of body temperature, hunger, and thirst is the
- hypothalamus.
 - limbic system.
 - thalamus.
 - cerebrum.

ANS: A
OBJ: 3.6

PTS: 1
KEY: Factual

REF: The Brain and Behavior

100. If a key part of the ____ is destroyed, an animal will lose all interest in food and may well starve to death.
- medulla
 - cerebellum
 - thalamus
 - hypothalamus

ANS: D

PTS: 1

DIF: Correct = 52%

REF: The Brain and Behavior

OBJ: 3.6

KEY: Critical Thinking

101. Imagine that you have stumbled across a secret laboratory where an evil scientist is conducting unauthorized brain research. By altering brain structures, he has created superheroes who have specialized powers or abilities. One of these superheroes seldom feels hungry or thirsty and can go for days without feeling the need to eat or drink. In this case, the brain structure that the scientist MOST likely altered would be
- the thalamus.
 - the hypothalamus.
 - the reticular formation.
 - the hippocampus.

ANS: B

PTS: 1

REF: The Brain and Behavior

OBJ: 3.6

KEY: Critical Thinking

102. If electrical stimulation of a brain structure results in an animal's eating constantly and gaining weight rapidly, the structure stimulated MOST likely is the
- frontal lobe.
 - thalamus.
 - hypothalamus.
 - limbic system.

ANS: C

PTS: 1

REF: The Brain and Behavior

OBJ: 3.6

KEY: Concept/Applied

103. The hypothalamus influences or regulates all of the following EXCEPT
- the autonomic nervous system.
 - basic biological needs.
 - memory.
 - feeding.

ANS: C

PTS: 1

REF: The Brain and Behavior

OBJ: 3.6

TOP: WWW

KEY: Concept/Applied

104. Amy has lost her senses of sight, hearing, and touch. Her symptoms are found to be caused by pressure applied to the brain by a tumor. Where is the tumor likely to be found?
- cerebrum
 - amygdale

- c. thalamus
- d. medial forebrain bundle

ANS: C PTS: 1 REF: The Brain and Behavior
OBJ: 3.6 KEY: Concept/Applied

105. Which of the following brain structures is MOST closely associated with the regulation of emotion?
- a. cerebellum
 - b. reticular formation
 - c. brainstem
 - d. limbic system

ANS: D PTS: 1 REF: The Brain and Behavior
OBJ: 3.6 KEY: Factual

106. A patient's fear outbursts are found to be caused by pressure applied to the brain by a tumor. Where is the tumor likely to be found?
- a. reticular formation
 - b. cerebrum
 - c. amygdala
 - d. medial forebrain bundle

ANS: C PTS: 1 REF: The Brain and Behavior
OBJ: 3.6 KEY: Concept/Applied

107. Aretha had severe epilepsy, and surgeons removed portions of her hippocampus to control the severity of her seizures. It is quite likely that Aretha will find that the surgery has also affected her ability to
- a. form new memories.
 - b. control her urges to eat and drink.
 - c. interpret sensory information accurately.
 - d. express emotions appropriately.

ANS: A PTS: 1 REF: The Brain and Behavior
OBJ: 3.6 KEY: Concept/Applied

108. Imagine that you have stumbled across a secret laboratory where an evil scientist is conducting unauthorized brain research. By altering brain structures, he has created superheroes who have specialized powers or abilities. One of these superheroes has a fantastic memory and is able to remember new information almost instantly. In this case, one of the brain structures that the scientist MOST likely altered would be
- a. the amygdala.
 - b. the pons.
 - c. the hippocampus.
 - d. the reticular formation.

ANS: C PTS: 1 REF: The Brain and Behavior
OBJ: 3.6 KEY: Critical Thinking

109. Recent research suggests that which of the following structures is involved in higher-order cognitive functions such as attention and planning?
- a. pons

- b. medulla
- c. cerebellum
- d. brainstem

ANS: C PTS: 1 REF: The Brain and Behavior
OBJ: 3.6 TOP: Factual

110. Imagine that you have stumbled across a secret laboratory where an evil scientist is conducting unauthorized brain research. By altering brain structures, he has created superheroes who have specialized powers or abilities. One of these superheroes is absolutely fearless and willing to undertake extremely dangerous missions. In this case, the brain structure that the scientist MOST likely altered would be
- a. the medulla.
 - b. the cerebellum.
 - c. the midbrain.
 - d. the amygdala.

ANS: D PTS: 1 REF: The Brain and Behavior
OBJ: 3.6 KEY: Critical Thinking

111. Pleasure centers in the brain appear to be concentrated most heavily in the
- a. endocrine system.
 - b. limbic system.
 - c. corpus callosum.
 - d. brainstem.

ANS: B PTS: 1 REF: The Brain and Behavior
OBJ: 3.6 KEY: Factual

112. Olds and Milner (1954) found that rats will endlessly stimulate a pleasure center in the _____ when an electrode is implanted there.
- a. brainstem
 - b. corpus callosum
 - c. limbic system
 - d. frontal lobe of the occipital cortex

ANS: C PTS: 1 REF: The Brain and Behavior
OBJ: 3.6 KEY: Factual

113. Electrodes placed in which location are likely to produce the highest rates of self-stimulation by an animal?
- a. amygdala
 - b. cerebral cortex
 - c. medial forebrain bundle
 - d. posterior

ANS: C PTS: 1 DIF: Correct = 20%
REF: The Brain and Behavior OBJ: 3.6 KEY: Concept/Applied

114. The largest and most complex part of the human brain is the
- a. medulla.
 - b. cerebrum.
 - c. cerebellum.
 - d. limbic system.

ANS: B PTS: 1
REF: The Brain and Behavior
KEY: Factual

DIF: Correct = 61%
OBJ: 3.7 TOP: WWW

115. The brain structure that is responsible for the human ability to engage in higher mental activity such as thinking and remembering is the
- corpus callosum.
 - cerebrum.
 - cerebellum.
 - hypothalamus.

ANS: B PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Factual

116. The structure that connects the two cerebral hemispheres is the
- corpus callosum.
 - pineal gland.
 - thalamus.
 - parietal lobe.

ANS: A PTS: 1 DIF: Correct = 91%
REF: The Brain and Behavior OBJ: 3.7 KEY: Factual

117. When Jeffrey slipped on the stairs and hit his head, he saw “stars” for several minutes. The “stars” were MOST likely a result of activity in Jeffrey’s
- temporal lobes.
 - prefrontal cortex.
 - occipital lobes.
 - primary somatosensory cortex.

ANS: C PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Concept/Applied

118. In which of the lobes of the cerebrum is the somatosensory cortex located?
- frontal
 - parietal
 - temporal
 - occipital

ANS: B PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Factual

119. When this lobe of the brain is electrically stimulated, people report physical sensations as if they had been touched, for example, on the arm.
- frontal
 - parietal
 - temporal
 - occipital

ANS: B PTS: 1 DIF: Correct = 75%
REF: The Brain and Behavior OBJ: 3.7 KEY: Concept/Applied

120. Gilbert suffered a stroke, and even though he has recovered many functions, he finds he is still relatively insensitive to pain signals from his leg. In this case, it is likely that Gilbert's stroke affected his
- a. parietal lobe.
 - b. frontal lobe.
 - c. temporal lobe.
 - d. occipital.

ANS: A PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Concept/Applied

121. Theodore suffered a stroke recently, and now he finds he constantly hears a buzzing sound in his ears. In this case, it is likely that the stroke occurred in Theodore's
- a. temporal lobe.
 - b. right frontal lobe.
 - c. occipital lobes.
 - d. left parietal lobe.

ANS: A PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Concept/Applied

122. Damage to the temporal lobe of the brain would probably be MOST harmful to the career of
- a. a musician.
 - b. an gymnast.
 - c. an architect.
 - d. a painter.

ANS: A PTS: 1 DIF: Correct = 73%
REF: The Brain and Behavior OBJ: 3.7 KEY: Critical Thinking

123. Neurons that are activated by performing an action or seeing others perform that same action are called
- a. interneurons.
 - b. mirror neurons.
 - c. afferent neurons.
 - d. efferent neurons.

ANS: B PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Factual

124. Recent research has suggested that mirror neurons may play a role in all of the following EXCEPT
- a. acquisition of new motor skills.
 - b. the imitation of others.
 - c. the understanding of the intentions of others.
 - d. complex mathematical calculations.

ANS: D PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Factual

125. In humans, the prefrontal cortex accounts for ____ of the cerebral cortex.

- a. nearly one-half
- b. approximately one-third
- c. just over 10%
- d. less than 5%

ANS: B PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Factual

126. Mary recently had a small stroke that left her unable to move her right side. In which lobe of the cerebrum did the stroke MOST likely cause damage?
- a. parietal lobe
 - b. occipital lobe
 - c. frontal lobe
 - d. thalamic lobe

ANS: C PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Concept/Applied

127. The amount of motor cortex devoted to each body area is determined by
- a. the size of the body area.
 - b. the location of the body area.
 - c. the diversity of movements of the body area.
 - d. none of these factors.

ANS: C PTS: 1 DIF: Correct = 51%
REF: The Brain and Behavior OBJ: 3.7 KEY: Factual

128. Some theorists believe that a sort of “executive control system,” which is responsible for monitoring, directing, and organizing thought processes, is housed in the
- a. corpus callosum.
 - b. prefrontal cortex.
 - c. hindbrain.
 - d. medial forebrain bundle.

ANS: B PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Concept/Applied

129. The primary visual cortex is located in the
- a. occipital lobe.
 - b. parietal lobe.
 - c. temporal lobe.
 - d. frontal lobe.

ANS: A PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Factual

130. If the occipital lobe of the brain is stimulated, a person would be MOST likely to report
- a. hearing a sound.
 - b. smelling an odor.
 - c. seeing a flash of light.
 - d. moving a part of his body.

ANS: C PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Concept/Applied

131. The primary motor cortex is located in the
- occipital lobe.
 - parietal lobe.
 - temporal lobe.
 - frontal lobe.

ANS: D PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Factual

132. The next time you have an itch on your foot, the itch sensation will be sensed in your ____ lobe and the ____ lobe will transmit the message to move your hand and arm to scratch the itch.
- parietal; frontal
 - frontal; parietal
 - temporal; frontal
 - parietal; occipital

ANS: A PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Critical Thinking

133. If a patient has severe damage to the prefrontal cortex, you would predict that he might also have difficulty
- identifying visually complex materials.
 - planning, paying attention, and getting organized.
 - identifying objects by touch.
 - hearing sounds.

ANS: B PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Concept/Applied

134. The most recent research investigating the brain's plasticity suggests that
- the plasticity of the brain is unlimited; it is our ability to measure it that is limited.
 - the brain's plasticity and flexibility increases with age.
 - the neural wiring of the brain is flexible and constantly evolving.
 - after infancy, new neurons only form in the left hemisphere of the brain.

ANS: C PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Concept/Applied

135. Recent research has demonstrated that adult humans
- can form new neurons throughout the central nervous system, but not in the peripheral nervous system.
 - can form new neurons in the olfactory bulb and hippocampus.
 - can form new neurons throughout the peripheral nervous system, but not in the central nervous system.
 - do not generate any new neurons once they are past adolescence.

ANS: B PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Factual

136. Which of the following statements concerning plasticity in the brain is FALSE?
- Damage to one area of brain tissue may result in changes in other areas of the brain that compensate for the damage.
 - Experience can change the features of brain structures.
 - Older brains show more plasticity than younger brains.

d. Even adult brains are able to form additional neurons.

ANS: C PTS: 1 REF: The Brain and Behavior
OBJ: 3.7 KEY: Factual

137. The area of the frontal lobe that plays an important role in the production of speech is called
- Wernicke's area.
 - Broca's area.
 - Cannon's area.
 - Sperry's area.

ANS: B PTS: 1 DIF: Correct = 78%
REF: Right Brain/Left Brain: Cerebral Specialization OBJ: 3.8
KEY: Factual

138. Zeke has no problem understanding what other people say to him, but he has difficulty producing spoken language. If Zeke's problem stems from damage to the cerebral cortex, the damage would MOST likely be in
- Wernicke's area.
 - Broca's area.
 - the cerebellum.
 - the right parietal lobe.

ANS: B PTS: 1 REF: Right Brain/Left Brain: Cerebral Specialization
OBJ: 3.8 KEY: Concept/Applied

139. If you have difficulty understanding the meaning of someone's speech, you may suspect damage to
- the pituitary gland.
 - Wernicke's area.
 - the corpus callosum.
 - Korsakoff's area.

ANS: B PTS: 1 DIF: Correct = 39%
REF: Right Brain/Left Brain: Cerebral Specialization OBJ: 3.8
KEY: Concept/Applied

140. Monique is not able to understand spoken language. If Monique's problem stems from damage to the cerebral cortex, the damage would MOST likely be in
- Broca's area.
 - the cerebellum.
 - Wernicke's area.
 - the right parietal lobe.

ANS: C PTS: 1 REF: Right Brain/Left Brain: Cerebral Specialization
OBJ: 3.8 KEY: Concept/Applied

141. The main reason for the characterization of the left hemisphere as the "dominant" hemisphere was
- the evidence that the left hemisphere usually processes language.
 - the evidence that the left hemisphere usually processes complex information.
 - the fact that the majority of people are right-handed.

d. that split-brain patients use only their left hemisphere for processing information.

ANS: A PTS: 1 REF: Right Brain/Left Brain: Cerebral Specialization
OBJ: 3.8 KEY: Concept/Applied

142. For most people, the production of language resides in the
- posterior cerebral hemisphere.
 - central cerebral hemisphere.
 - right cerebral hemisphere.
 - left cerebral hemisphere.

ANS: D PTS: 1 DIF: Correct = 75%
REF: Right Brain/Left Brain: Cerebral Specialization OBJ: 3.8
TOP: WWW KEY: Concept/Applied

143. Surgically disconnecting the cerebral hemispheres has its origins in the treatment of
- epilepsy.
 - comas.
 - schizophrenia.
 - psychopathology.

ANS: A PTS: 1 DIF: Correct = 82%
REF: Right Brain/Left Brain: Cerebral Specialization OBJ: 3.8
KEY: Factual

144. If the left hemisphere of the brain were damaged, which part of the body would be MOST directly affected?
- the left half
 - the right half
 - the upper portion
 - the entire body

ANS: B PTS: 1 DIF: Correct = 97%
REF: Right Brain/Left Brain: Cerebral Specialization OBJ: 3.8
KEY: Factual

145. Because the speech center is generally located in the left hemisphere of the brain, a split-brain patient is unable to describe stimuli that are
- seen in the left visual field.
 - seen in the right visual field.
 - presented directly in front of him or her.
 - felt with the right hand.

ANS: A PTS: 1 DIF: Correct = 38%
REF: Right Brain/Left Brain: Cerebral Specialization OBJ: 3.8
KEY: Critical Thinking

146. Imagine that a picture of a spoon is briefly flashed in the left visual field of an individual with a severed corpus callosum. At the same time, a picture of a cup is briefly flashed in the right visual field. Based on research with split-brain patients, you could predict that this individual will say,
- “I didn’t see anything.”
 - “I saw a spoon resting in a cup.”
 - “I saw a spoon.”
 - “I saw a cup.”

ANS: D PTS: 1 REF: Right Brain/Left Brain: Cerebral Specialization
OBJ: 3.8 KEY: Concept/Applied

147. If a right-handed subject whose corpus callosum has been cut is asked to reproduce a drawing, you would predict
- best performance by the right hand.
 - best performance by the left hand.
 - equal performance by the two hands.
 - an inability to draw with either hand.

ANS: B PTS: 1 DIF: Correct = 82%
REF: Right Brain/Left Brain: Cerebral Specialization OBJ: 3.8
KEY: Critical Thinking

148. The brain structure involved in comprehension of speech is
- Broca’s area.
 - Wernicke’s area.
 - the prefrontal cortex.
 - the parietal cortex.

ANS: B PTS: 1 REF: Right Brain/Left Brain: Cerebral Specialization
OBJ: 3.8 KEY: Factual

149. An elderly person has a stroke that leaves her unable to talk and part of her body paralyzed. Which part of the body is MOST likely to be paralyzed?
- right side
 - left side
 - upper body
 - lower body

ANS: A PTS: 1 REF: Right Brain/Left Brain: Cerebral Specialization
OBJ: 3.8 KEY: Critical Thinking

150. Chase is using a single earphone to listen in on a conversation. Based on the research that investigated hemispheric specialization in intact brains, you might suggest that he will recognize the words he hears most quickly if he
- puts the earphone in his left ear.
 - closes his eyes while he listens to the conversation.
 - keeps switching the earphone from ear to ear.
 - puts the earphone in his right ear.

ANS: D PTS: 1 REF: Right Brain/Left Brain: Cerebral Specialization
OBJ: 3.9 KEY: Critical Thinking

151. Weak cerebral lateralization is associated with

- a. increased risk of depression.
- b. poor math skills.
- c. poor driving ability.
- d. lower IQ.

ANS: D PTS: 1 REF: Right Brain/Left Brain: Cerebral Specialization
OBJ: 3.9 TOP: Factual

152. In both split-brain people and neurologically intact people, the left hemisphere specializes in
- a. verbal processing.
 - b. visual recognition.
 - c. spatial perception.
 - d. verbal processing and spatial perception.

ANS: A PTS: 1 DIF: Correct = 72%
REF: Right Brain/Left Brain: Cerebral Specialization OBJ: 3.9
KEY: Factual

153. Nadine had a stroke that was confined to the right side of her brain. Based on hemispheric lateralization studies, you might expect that Nadine would have the most problems with tasks that require
- a. spatial skills, such as fitting together puzzle pieces.
 - b. language and communication.
 - c. fine motor coordination.
 - d. mathematics and logical reasoning skills.

ANS: A PTS: 1 REF: Right Brain/Left Brain: Cerebral Specialization
OBJ: 3.9 KEY: Concept/Applied

154. Which of the following parts of the brain is MOST likely to play a major role in the work of artists, architects, and engineers, who must rely heavily on visual-spatial skills?
- a. the right hemisphere
 - b. the left hemisphere
 - c. cerebellum
 - d. corpus callosum

ANS: A PTS: 1 REF: Right Brain/Left Brain: Cerebral Specialization
OBJ: 3.9 KEY: Concept/Applied

155. A hormone is
- a. a chemical secreted by a gland.
 - b. a brain structure below the hypothalamus.
 - c. a location in the brain where a specific memory is stored.
 - d. a neurotransmitter that crosses into the bloodstream.

ANS: A PTS: 1 DIF: Correct = 94%
REF: The Endocrine System: Another Way to Communicate OBJ: 3.10
KEY: Factual

156. People who have hormonal imbalances have problems with their
- endocrine system.
 - reticular formation.
 - limbic system.
 - left brain/right brain communication.

ANS: A PTS: 1
REF: The Endocrine System: Another Way to Communicate OBJ: 3.10
TOP: WWW KEY: Factual

157. Hormones are transported throughout the body via the
- nervous system.
 - limbic system.
 - bloodstream.
 - lymph nodes.

ANS: C PTS: 1 DIF: Correct = 46%
REF: The Endocrine System: Another Way to Communicate OBJ: 3.10
KEY: Factual

158. The gland located below the hypothalamus that produces a number of hormones, many of which trigger other endocrine glands to release hormones, is the
- gonads.
 - adrenal gland.
 - pituitary gland.
 - thyroid gland.

ANS: C PTS: 1 DIF: Correct = 46%
REF: The Endocrine System: Another Way to Communicate OBJ: 3.10
KEY: Factual

159. Much of the endocrine system is controlled by the nervous system through the
- medulla.
 - hypothalamus.
 - thalamus.
 - cerebellum.

ANS: B PTS: 1
REF: The Endocrine System: Another Way to Communicate OBJ: 3.10
KEY: Factual

160. After inhaling a secret substance, John displays more empathy and is more trusting of others. It is likely that the secret substance contained
- arsenic.
 - oxytocin.
 - endorphins.
 - melatonin.

ANS: B PTS: 1
REF: The Endocrine System: Another Way to Communicate OBJ: 3.10

TOP: Concept/Applied

161. Which of the following does NOT belong with the other three?
- a. adrenal glands
 - b. hypothalamus
 - c. thalamus
 - d. pituitary

ANS: C PTS: 1

REF: The Endocrine System: Another Way to Communicate OBJ: 3.10

KEY: Critical Thinking

162. The system of glands that secrete chemicals into the bloodstream that help control bodily functioning is the
- a. hormonal system.
 - b. endocrine system.
 - c. nervous system.
 - d. pituitary system.

ANS: B PTS: 1

REF: The Endocrine System: Another Way to Communicate OBJ: 3.10

KEY: Factual

163. The chemicals released into the bloodstream by the endocrine glands are
- a. hormones.
 - b. neurotransmitters.
 - c. gonads.
 - d. circulatory transmitters.

ANS: A PTS: 1

REF: The Endocrine System: Another Way to Communicate OBJ: 3.10

KEY: Factual

164. The “master gland” of the endocrine system is the
- a. hypothalamus.
 - b. adrenal gland.
 - c. pituitary gland.
 - d. gonads.

ANS: C PTS: 1

REF: The Endocrine System: Another Way to Communicate OBJ: 3.10

KEY: Factual

165. The carriers of genetic information in the form of DNA are the
- a. chromosomes.
 - b. ribosomes.
 - c. nucleotides.
 - d. rizomes.

ANS: A PTS: 1 DIF: Correct = 95%

REF: Heredity and Behavior: Is It All in the Genes? OBJ: 3.11

KEY: Factual

166. With the exception of the sex cells, every cell in the human body contains
- 23 chromosomes.
 - 46 chromosomes.
 - 23 recessive genes and 23 dominant genes.
 - 46 heterozygous pairs.

ANS: B PTS: 1 REF: Heredity and Behavior: Is It All in the Genes?
OBJ: 3.11 KEY: Factual

167. Which of the following are generally considered the key functional units in hereditary transmission?
- dichromats
 - limens
 - chromosomes
 - genes

ANS: D PTS: 1 REF: Heredity and Behavior: Is It All in the Genes?
OBJ: 3.11 TOP: WWW KEY: Factual

168. A _____ contains thousands of _____.
- DNA; genes
 - DNA; chromosomes
 - chromosome; genes
 - gene; chromosomes

ANS: C PTS: 1 REF: Heredity and Behavior: Is It All in the Genes?
OBJ: 3.11 KEY: Factual

169. It appears that most human characteristics are influenced by
- a single gene.
 - a single pair of genes.
 - the father's genetic endowment more than the mother's.
 - more than one pair of genes.

ANS: D PTS: 1 DIF: Correct = 83%
REF: Heredity and Behavior: Is It All in the Genes? OBJ: 3.11
KEY: Factual

170. Skin color is determined by three to five gene pairs. This makes skin color
- a monogenic trait.
 - a dominant trait.
 - a polygenic trait.
 - a polymorphous trait.

ANS: C PTS: 1 DIF: Correct = 88%
REF: Heredity and Behavior: Is It All in the Genes? OBJ: 3.11
KEY: Concept/Applied

171. Which of the following kinds of studies can truly demonstrate that specific traits are indeed inherited?

- a. family studies
- b. twin studies
- c. adoption studies
- d. none of the above

ANS: D PTS: 1 REF: Heredity and Behavior: Is It All in the Genes?
OBJ: 3.12 KEY: Concept/Applied

172. Family studies, twin studies, and adoption studies are primarily designed to
- a. disentangle the effects of genetics and experience on behavioral traits.
 - b. establish the groundwork for genetic engineering programs.
 - c. demonstrate the empirical nature of psychological research.
 - d. assess the effects of modern child-rearing methods.

ANS: A PTS: 1 DIF: Correct = 94%
REF: Heredity and Behavior: Is It All in the Genes? OBJ: 3.12
KEY: Factual

173. Londra and Sondra are identical twins who have been raised together in the same home. Londra has developed a psychological disorder, but Sondra does not appear to have the same disorder. This information could be used as evidence to suggest that
- a. genetic factors have more influence than environmental factors in this disorder.
 - b. environmental factors have more influence than genetic factors in this disorder.
 - c. both genetic and environmental factors contribute equally to this disorder.
 - d. neither genetic nor environmental factors contribute to this disorder.

ANS: B PTS: 1 REF: Heredity and Behavior: Is It All in the Genes?
OBJ: 3.12 KEY: Critical Thinking

174. Donald and Ronald are identical twins who have been raised apart, in separate adoptive homes. However, both brothers have developed the same psychological disorder. This information could be used as evidence to suggest that
- a. environmental factors have more influence than genetic factors in this disorder.
 - b. both genetic and environmental factors contribute equally to this disorder.
 - c. genetic factors have more influence than environmental factors in this disorder.
 - d. neither genetic nor environmental factors contribute to this disorder.

ANS: C PTS: 1 REF: Heredity and Behavior: Is It All in the Genes?
OBJ: 3.12 KEY: Critical Thinking

175. The research on adopted children and intelligence has found that there is a significant similarity between them and
- a. their biological parents.
 - b. their adoptive parents.
 - c. both sets of parents.
 - d. their adoptive siblings.

ANS: C PTS: 1 DIF: Correct = 62%
REF: Heredity and Behavior: Is It All in the Genes? OBJ: 3.12
KEY: Factual

176. Donavon was adopted at birth by Mr. and Mrs. Erndt. Although neither of his biological parents had much musical ability, Donavon has become an excellent pianist, just like Mr. Erndt. This information could be used as evidence to suggest that

- a. environmental factors have more influence than genetic factors in musical talent.
- b. both genetic and environmental factors contribute equally to musical talent.
- c. genetic factors have more influence than environmental factors in musical talent.
- d. neither genetic nor environmental factors contribute to musical talent.

ANS: A PTS: 1 REF: Heredity and Behavior: Is It All in the Genes?
OBJ: 3.12 KEY: Critical Thinking

177. It is most accurate to state that family, twin, and adoption studies are designed to determine the effect of ____ on human behavior.
- a. living in the same environment
 - b. experience
 - c. genetics
 - d. both experience and genetics

ANS: D PTS: 1 REF: Heredity and Behavior: Is It All in the Genes?
OBJ: 3.12 KEY: Critical Thinking

178. In family studies, researchers assess hereditary influence by
- a. comparing members of one family to unrelated individuals to see how much they resemble one another on specific traits.
 - b. comparing blood relatives to see how much they resemble one another on specific traits.
 - c. comparing the resemblance of adopted children to both their biological and adoptive parents on specific traits.
 - d. comparing the resemblance of identical and fraternal twins on specific traits.

ANS: B PTS: 1 REF: Heredity and Behavior: Is It All in the Genes?
OBJ: 3.12 KEY: Factual

179. Which research method allows researchers to MOST easily isolate the effect of both genetics and experience on specific traits?
- a. family studies
 - b. twin studies
 - c. adoption studies
 - d. survey studies

ANS: C PTS: 1 REF: Heredity and Behavior: Is It All in the Genes?
OBJ: 3.12 KEY: Critical Thinking

180. Changes in gene expression that are due to environmental factors such as stress and diet are the focus of the field known as
- a. family studies.
 - b. epigenetics.
 - c. adoption studies.
 - d. perceptual asymmetry.

ANS: B PTS: 1 REF: Heredity and Behavior: Is It All in the Genes?
OBJ: 3.12 KEY: Critical Thinking

181. According to Darwin's theory of evolution, which of the following is the key factor in evolutionary change?
- a. the genetic transmission of learned behavior
 - b. the relative success of aggressive predators
 - c. variations in reproductive success

d. the interaction of heredity and the environment

ANS: C PTS: 1 REF: The Evolutionary Bases of Behavior
OBJ: 3.13 KEY: Concept/Applied

182. The notion that the heritable characteristics that provide a survival or reproductive advantage are more likely to be passed on to subsequent generations is known as
- natural selection.
 - polygenic transmission.
 - genetic mapping.
 - gene flow.

ANS: A PTS: 1 REF: The Evolutionary Bases of Behavior
OBJ: 3.13 KEY: Factual

183. Which of the following is NOT one of Darwin's four key insights?
- Some characteristics are heritable.
 - Organisms vary in endless ways.
 - Genetic drift is a major factor in the evolution of species.
 - Organisms tend to reproduce faster than available resources.

ANS: C PTS: 1 REF: The Evolutionary Bases of Behavior
OBJ: 3.13 KEY: Factual

184. _____ refers to the reproductive success of an individual organism relative to the average reproductive success in the population.
- Natural selection
 - Polygenic transmission
 - Fitness
 - Gene flow

ANS: C PTS: 1 REF: The Evolutionary Bases of Behavior
OBJ: 3.13 KEY: Factual

185. Darwin believed that a trait contributed to evolution by providing
- a reproductive advantage.
 - a survival advantage.
 - both a reproductive and a survival advantage.
 - either a reproductive or survival advantage.

ANS: D PTS: 1 REF: The Evolutionary Bases of Behavior
OBJ: 3.13 KEY: Factual

186. An inherited characteristic that, through natural selection, increases in a population because it helps to solve a survival problem at the time it emerges is called
- an adaptation.
 - a genetic mutation.
 - a dominant gene.
 - a homozygous pairing.

ANS: A PTS: 1 REF: The Evolutionary Bases of Behavior

OBJ: 3.14 KEY: Factual

187. Humans' taste preferences for fatty substances may be one example of
- the paradox of inclusive fitness.
 - an adaptation that has become a liability.
 - genetic drift across several generations.
 - recessive genes mutating into dominant traits.

ANS: B PTS: 1 REF: The Evolutionary Bases of Behavior
OBJ: 3.14 KEY: Concept/Applied

188. Contemporary models account for or explain evolutionary theory in
- global terms.
 - behavioral terms.
 - genetic terms.
 - biological terms.

ANS: C PTS: 1 REF: The Evolutionary Bases of Behavior
OBJ: 3.14 KEY: Factual

189. Since the long necks of giraffes and sharp beaks of woodpeckers allow individuals access to food, these physical characteristics are considered to be examples of
- fitness.
 - adaptations.
 - behavioral change.
 - experience.

ANS: B PTS: 1 REF: The Evolutionary Bases of Behavior
OBJ: 3.14 KEY: Concept/Applied

190. Which of the following is NOT an example of a behavioral adaptation?
- rats eating only a single unfamiliar food at one time
 - male wild turkeys growing larger beak ornaments
 - male moths gathering sodium to transfer to prospective mates
 - female black-tipped hanging flies rejecting suitors who bring unpalatable foods

ANS: B PTS: 1 REF: The Evolutionary Bases of Behavior
OBJ: 3.14 KEY: Factual

191. In a set of identical twins who have been raised together, one of them develops schizophrenia, but the other does not. Which of the unifying themes discussed in the text is this illustrative of?
- Psychology is empirical.
 - Psychology evolves in a sociohistorical context.
 - Heredity and environment jointly influence behavior.
 - Our behavior is shaped by our cultural heritage.

ANS: C PTS: 1 REF: Reflecting on the Chapter's Themes
OBJ: 3.15 KEY: Concept/Applied

192. Schizophrenia may be related to abnormalities in neurotransmitter activity, structural defects in the brain, and genetic vulnerabilities. These observations MOST directly relate to the text's unifying theme that
- behavior is determined by multiple causes.
 - psychology is empirical.

- c. heredity and environment jointly influence behavior.
- d. behavior is shaped by cultural heritage.

ANS: A PTS: 1 REF: Reflecting on the Chapter's Themes
OBJ: 3.15 KEY: Factual

193. Darwin's theory of natural selection is MOST directly related to which of the text's unifying themes in psychology?
- a. Heredity and environment jointly influence behavior.
 - b. Psychology is theoretically diverse.
 - c. People's experience of the world is highly subjective.
 - d. Psychology evolves in a sociohistorical context.

ANS: A PTS: 1 REF: Reflecting on the Chapter's Themes
OBJ: 3.15 KEY: Critical Thinking

194. Kim is good at reading maps and enjoys listening to music. Some researchers would suggest that these characteristics indicate that Kim is probably
- a. left-brained.
 - b. right-brained.
 - c. mid-brained.
 - d. hemispheric.

ANS: B PTS: 1
REF: Personal Application: Evaluating the Concept of "Two Minds in One"
OBJ: 3.16 TOP: WWW KEY: Critical Thinking

195. Which of the following statements is MOST accurate?
- a. The right side of the brain is the creative side.
 - b. The right and left brains are specialized to handle different kinds of information.
 - c. Language tasks are always handled by the left side of the brain.
 - d. Most schooling overlooks the education of the right brain.

ANS: B PTS: 1
REF: Personal Application: Evaluating the Concept of "Two Minds in One"
OBJ: 3.16 KEY: Concept/Applied

196. Research involving tasks such as recognizing words or musical melodies has shown that
- a. most tasks are controlled by only one hemisphere.
 - b. on a specific type of task, the superiority of one hemisphere over the other is usually quite modest.
 - c. the dominant hemisphere is superior to the other hemisphere on most tasks.
 - d. right-handed individuals outperform left-handed individuals on verbal tasks.

ANS: B PTS: 1
REF: Personal Application: Evaluating the Concept of "Two Minds in One"
OBJ: 3.16 KEY: Factual

197. The seminal research on critical periods in neural development was conducted in the 1960s on which of the following subjects?

- a. rats
- b. adult monkeys
- c. preschool children
- d. newborn kittens

ANS: D PTS: 1

REF: Critical Thinking Application: Building Better Brains OBJ: 3.17

KEY: Factual

198. In summarizing recent research in neuroscience, science writer Ronald Kotulak concluded that which of the following periods is critically important to an individual's brain development?

- a. the first 3 years of life
- b. 6 to 10 years of age
- c. adolescence
- d. the college years

ANS: A PTS: 1

REF: Critical Thinking Application: Building Better Brains OBJ: 3.17

KEY: Factual

199. All of the studies that highlighted the possible importance of early experience in animals had which of the following features in common?

- a. They used extreme conditions to make their comparisons.
- b. They used relatively crude measures of brain growth.
- c. The researchers used very small samples.
- d. They were supported by a grant from the United States Department of Education.

ANS: A PTS: 1

REF: Critical Thinking Application: Building Better Brains OBJ: 3.17

KEY: Factual

200. Which of the following statements is MOST accurate?

- a. Human beings begin life with an insufficient number of synapses.
- b. Human beings begin life with an overabundance of synapses.
- c. Synaptic density is associated with intelligence.
- d. Brain development is only malleable during the first three years of life.

ANS: B PTS: 1

REF: Critical Thinking Application: Building Better Brains OBJ: 3.17

KEY: Concept/Applied

201. Which of the following has NOT been demonstrated through scientific research?

- a. Rats raised in enriched environments have more synapses than rats raised in impoverished environments.
- b. Kittens deprived of visual stimulation in one eye early in life become permanently blind in that eye.
- c. After listening to classical music, college students show increased performance on some tasks.
- d. Young infants exposed to classical music show higher cognitive performance in preschool.

ANS: D PTS: 1

REF: Critical Thinking Application: Building Better Brains OBJ: 3.17

KEY: Factual

202. In addition to its role in motor behavior, acetylcholine has been suggested to be involved in attention, arousal, learning, and memory, and its degeneration related to Alzheimer's disease. Given what you have learned about the brain, in what structure would you expect to find a high percentage of acetylcholine receptors?
- pons
 - hypothalamus
 - hippocampus
 - thalamus

ANS: C PTS: 1 DIF: Correct = 80%
REF: Communication in the Nervous System OBJ: 3.3
KEY: Integrative

203. ____ function in the endocrine system much like ____ in the nervous system.
- Hormones; dendrites
 - Hormones; neurotransmitters
 - Endorphins; sensory neurons
 - Neurotransmitters; hormones

ANS: B PTS: 1 KEY: Integrative
REF: The Endocrine System: Another Way to Communicate OBJ: 3.10