1. Neuroscience is the same thing as biological psychology.
   A) True
   B) False

2. Neurons are the fundamental building blocks of the nervous system.
   A) True
   B) False

3. PET scans can be expensive and time-consuming.
   A) True
   B) False

4. A psychologist is using EEG when she uses scalp electrodes to measure the electrical activity in a participant's brain.
   A) True
   B) False

5. Computerized axial tomography (CAT) measures blood flow to the different areas of the brain.
   A) True
   B) False

6. Axons receive signals from other neurons.
   A) True
   B) False

7. Receiving is to sending as axons are to dendrites.
   A) True
   B) False

8. Myelin insulates dendrites.
   A) True
   B) False

9. Glial cells outnumber neurons.
   A) True
   B) False

10. Glial cells called Schwann cells help guard the brain from inflammation and infection.
    A) True
    B) False

11. The potential of a nerve cell at rest is about –70 mV.
    A) True
    B) False

12. Threshold potential is to action potential as –70 mV is to –55 mV.
    A) True
    B) False

13. During an action potential, potassium ions rush into a neuron.
    A) True
    B) False

14. Some action potentials are stronger than others.
    A) True
    B) False

15. Action potentials travel more quickly in myelinated than in unmyelinated axons.
    A) True
    B) False

16. One disease that reflects a breakdown in myelin is cystic fibrosis.
    A) True
    B) False

17. Neurons are physically connected at a place called a synapse.
    A) True
    B) False

18. The process whereby neurotransmitters are reabsorbed by the sending neuron is called reuptake.
    A) True
    B) False

19. Nicotine is an acetylcholine agonist.
    A) True
    B) False

20. GABA sends inhibitory messages to a receiving neuron.
    A) True
    B) False

21. Glutamate and GABA have similar effects on neural activity.
    A) True
    B) False

22. Despite their different roles in behavior, all neurotransmitters are excitatory in their effects.
    A) True
    B) False

23. Ellie lives with depression. Her medication probably elevates the activity of acetylcholine.
    A) True
    B) False

24. Dopamine is involved in learning through reinforcement.
    A) True
    B) False

25. Endorphins are the brain's own morphine.
    A) True
    B) False

26. After a long run, Aaron sometimes experiences a feeling of euphoria, a “runners' high,” reflecting the activity of a neurotransmitters called adenosine.
    A) True
    B) False

27. Caffeine enhances the activity of the neurotransmitter adenosine.
    A) True
    B) False

28. The somatic nervous system is a division of the central nervous system.
    A) True
    B) False

29. The sympathetic nervous system is a branch of the autonomic nervous system.
    A) True
    B) False

30. Afferent is to efferent as motor is to sensory.
    A) True
    B) False

31. Sensory neurons carry information to the brain.
    A) True
    B) False

32. Interneurons connect sensory neurons to motor neurons.
    A) True
    B) False

33. Reflexes are controlled by the peripheral nervous system.
    A) True
    B) False

34. The somatic nervous system controls the body's internal responses.
    A) True
    B) False

35. Kate's racing heart suggests that her sympathetic nervous system is active.
    A) True
    B) False

36. The parasympathetic nervous system controls the fight-or-flight response.
    A) True
    B) False

37. Women are more likely than men to show a "tend-and-befriend" response to stress.
    A) True
    B) False

38. Men earn a majority of the bachelor's degrees in the United States.
    A) True
    B) False

39. Some chemicals act as both neurotransmitters and hormones.
    A) True
    B) False

40. The adrenal gland is the endocrine system's "CEO."
    A) True
    B) False

41. The pineal gland secretes the hormone melatonin.
    A) True
    B) False

42. Thyroxin is to insulin as the thyroid gland is to the pituitary gland.
    A) True
    B) False

43. The cerebrum contains the brainstem.
    A) True
    B) False

44. The bundle of nerve fibers joining the two hemisphere is called the corpus callosum.
    A) True
    B) False

45. Wilder Penfield conducted groundbreaking split brain studies.
    A) True
    B) False

46. Will is a split-brain patient. When an object's image is flashed in his left visual field, he cannot name the object.
    A) True
    B) False

47. Left brain is to language processing as right brain is to visual and spatial tasks.
    A) True
    B) False

48. Some people are left-brained and others are right-brained.
    A) True
    B) False

49. Abbie is right-handed. There is a 25% chance that language is right-lateralized in her brain.
    A) True
    B) False

50. Wernicke's area is in the right frontal lobe.
    A) True
    B) False

51. Broca's and Wernicke's areas process music and gestures as well as language.
    A) True
    B) False

52. The right hemisphere's role in language processing is negligible.
    A) True
    B) False

53. Neuroplasticity is apparent even when an entire hemisphere is lost.
    A) True
    B) False

54. Children with musical training outperform other children on IQ tests.
    A) True
    B) False

55. We are born with all the brain cells we will ever have.
    A) True
    B) False

56. Embryonic stem cells have helped treat Parkinson's disease in humans.
    A) True
    B) False

57. The processing of touch, pain, and pressure sensations occurs in the temporal lobe.
    A) True
    B) False

58. After her stroke, Mrs. Williamson has difficulty understanding what is said to her. The stroke probably damaged her temporal lobe.
    A) True
    B) False

59. The case of Phineas Gage provided early knowledge about the role of the occipital lobe in thought and behavior.
    A) True
    B) False

60. Phineas Gage is to Albert Einstein as the parietal lobe is to the frontal lobe.
    A) True
    B) False

61. Motor cortex is to visual cortex as the frontal lobe is to the occipital lobe.
    A) True
    B) False

62. The auditory cortex is located in the parietal lobe.
    A) True
    B) False

63. Autopsy studies of Einstein's brain suggested that the size of the parietal lobe may be negatively correlated with mathematical and spatial intelligence.
    A) True
    B) False

64. The different body parts are equally represented in the somatosensory cortex.
    A) True
    B) False

65. When a stroke damaged a portion of Mrs. Schexnayder's auditory cortex, it destroyed cells in the temporal lobe.
    A) True
    B) False

66. In the cortex, incoming information is linked with stored knowledge in regions called association areas.
    A) True
    B) False

67. The limbic system contains the pons and medulla.
    A) True
    B) False

68. In people with epilepsy who have had portions of their limbic system removed, subsequent memory problems may reflect damage to the thalamus.
    A) True
    B) False

69. Information travels from our sensory receptors to the thalamus in the brain, which relays it to higher association areas.
    A) True
    B) False

70. Anjelica is becoming increasingly hungry during a long late-afternoon class. Certain cells in her hypothalamus are probably becoming especially active.
    A) True
    B) False

71. Heart rate and respiration are controlled by the medulla in the brainstem.
    A) True
    B) False

72. The cerebellum is part of the limbic system.
    A) True
    B) False

73. An individual with damage to the cerebellum would have trouble regulating attention and arousal.
    A) True
    B) False

Answer Key

1. B
2. A
3. A
4. A
5. B
6. B
7. B
8. B
9. A
10. B
11. A
12. B
13. B
14. B
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43. B
44. B

45. B
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52. B
53. A
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62. B
63. B
64. B
65. A
66. A
67. B
68. B
69. A
70. A
71. A
72. B
73. B

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

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

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

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

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

6. Distinguish between the sympathetic and parasympathetic divisions of the autonomic nervous system. For each division, provide an example of a situation in which the division would become active. Describe the effects of the activity of each division on several bodily processes.

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

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

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

10. (1) Define the cerebral cortex. (2) Draw a simple diagram of the brain. Label the brain's lobes on your drawing. (3) Briefly identify the function of each lobe.

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

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

Answer Key

1. The drawing should contain: (a) dendrites, which should appear as clusters of branchlike extensions from the cell body; (b) the cell body, which should appear as a roundish structure in the center of the diagram; (c) the axon, which should appear as a long tube extending from the cell body; (d) terminal buds, which should appear as extensions projecting from the axon; and (e) myelin, which should appear bracketing portions of the axon.
   These functions should be described: dendrites—receive information from other neurons; axon—sends messages to terminal buds; myelin—insulates one axon from another and speeds neural transmission; terminal buds—send messages to other neurons.
2. The answer should include the following steps in the sequence: (1) an action potential reaches the end of the axon, or the terminal bud; (2) the potential stimulates the release of neurotransmitter molecules from vesicles within the terminal bud; (3) the neurotransmitter molecules float passively across the gap between the terminal bud of the sending neuron and the dendrites of the receiving neuron; (4) the molecules fit into specialized receptor sites on the dendrites of the receiving neuron; making (5) the receiving neuron either more or less likely to produce its own action potential, depending on the neurotransmitter.
3. The answer should include three of these neurotransmitters. At least one of the functions or domains listed for each of the three neurotransmitters should be mentioned, ideally along with a personalized example.
   Acetylcholine—enables movement; involved in memory. Acetylcholine allows me to move my fingers so that I can text a friend on my phone.
   Glutamate—plays a role in learning and memory. Glutamate helps me learn the material in my textbooks and to remember it for tests.
   GABA—an inhibitory neurotransmitter.
   Norepinephrine—helps prepare the body for stressful situations, such as giving an oral presentation in class.
   Dopamine—involved in movement, attention, learning, and reinforcement. Dopamine contributes to the pleasure I take in meeting a friend for lunch or coffee.
   Serotonin—regulates sleep, mood, and eating. Serotonin may help regulate my feelings of hunger throughout a long day on campus.
   Endorphins—the brain's natural painkiller; may produce euphoric feelings. Endorphins lessen the discomfort of working out, allowing me to extend my training.
4. The answer should include:
   Alzheimer's disease—low levels of acetylcholine
   depression—abnormally low levels of serotonin
   Parkinson's disease—deterioration of neurons that produce dopamine
   Schizophrenia—underactivity of glutamate
5. The reflex arc describes the process whereby a sensory stimulus elicits an automatic response. When the doctor taps Mandy's knee, sensory neurons carry the signal to Mandy's spinal cord, where the signal from the sensory neurons is received by interneurons. The interneurons immediately activate motor neurons, which then instruct muscles in Mandy's knee to contract, resulting in the knee jerk.

6. The answer should contain the following information:
   The sympathetic nervous system—becomes active in such "fight or flight" situations as spotting a threatening stranger in a desolate parking garage, being involved in a near-accident on the road, and so on.
   The parasympathetic nervous system—becomes active in calm, restful situations such as relaxing after dinner or resting in bed before falling asleep.
   Signs of sympathetic nervous system activity—increased heart rate, inhibited digestion, dilated pupils, shallow breathing.
   Signs of parasympathetic nervous system activity—decreased heart rate, facilitated digestion, constricted pupils, slowed respiration.
7. The answer should mention several of these:
   Adrenal gland—involved in responses to stress and in regulating salt balance.
   Pancreas—produces insulin.
   Pituitary gland—the endocrine system's "master" or "chief executive" gland.
   Pineal gland—produces melatonin, which regulates daily rhythms.
   Thyroid gland—produces thyroxin, which regulates metabolism.
   Testes and ovaries—male and female sex hormones.
8. The answer should contain the following elements:
   The brain undergoes substantial development during adulthood. The interconnections between neurons become more complex throughout life; new neurons are created in certain parts of the brain during adulthood.
   Neuroplasticity—the process whereby the brain continually reorganizes itself.
   Neurogenesis—the creation of new neurons during adulthood.
   Treatment of nervous system disorders—stem cells may be used in the treatment of Parkinson's disease and spinal cord injuries. This work is controversial, however, because the main source of stem cells is human embryos. It is possible, though, that stem cells may be used from adult sources like bone marrow.
9.

Figure	**Contribution**
Pierre Paul Broca	French surgeon; performed autopsies on two patients who had lost the ability to talk; found damage to the left frontal lobe, a speech-production area now called Broca's area
Karl Wernicke	German doctor; pinpointed role of the left temporal lobe in language comprehension; area now called Wernicke's area
Wilder Penfield	North American neurosurgeon; used electrical stimulation to create a map showing the correspondence between various body parts and points in the somatosensory and motor cortices

Gustav Fritsch (German anatomist) and Edvard Hitzig (German neurologist)	Used electrical stimulation on dogs to show the involvement of the rear frontal lobes—the motor cortex—in producing voluntary movements

10. Cerebal cortex—the wrinkled, outermost layer of the cerebrum, responsible for higher mental functions.
    Usually, the front of the brain will be at the left of the diagram. This portion should be labeled the frontal lobe. The parietal and temporal lobes should be in the center of the brain diagram, with the parietal lobe above the temporal lobe. Finally, the rear portion of the brain should be labeled the occipital lobe.
    Functions:
    Frontal—higher-level cognitive functions, like thinking and planning; personality characteristics.
    Parietal—touch, temperature information.
    Temporal—hearing; language comprehension.
    Occipital—visual processing.
11. Two of these structures should be mentioned: amygdala, hippocampus, thalamus, and hypothalamus.
    Vignettes will vary but should focus on deficits in these functions:
    Amygdala—emotion
    Hippocampus—memory
    Thalamus—sensory processing
    Hypothalamus—homeostasis; regulation of sleep/wake cycles, sexual arousal, and appetite
    Case studies will vary.
12. The cerebellum sits behind the brainstem. It looks like a small version of the brain itself and primarily controls body balance and coordinates movement. It also influences such higher cognitive processes as reasoning and language production.
    Two of the following structures should be mentioned and described:
    Medulla—regulates breathing and heart rate.
    Pons—regulates sleep; coordinates movement between the right and left sides of the body.
    Reticular formation—regulates alertness; produces arousal to outside stimulation and filters out distracting background stimuli.

1. Which term is NOT a synonym for biological psychology?
   A) neuropsychology
   B) physiological psychology
   C) psychobiology
   D) neuroscience

2. Which statement concerning the study of the brain and the nervous system is MOST accurate?
   A) The terms "neuroscience" and "biological psychology" both refer to the study of the brain and the nervous system.
   B) The terms "neuroscience" and "biological psychology" both refer to the study of how the nervous system influences behavior.
   C) The term "neuroscience" refers to the study of the brain and the nervous system, whereas the term "biological psychology" refers to the study of how the nervous system influences behavior.
   D) The term "biological psychology" refers to the study of the brain and the nervous system, whereas the term "neuroscience" refers to the study of how the nervous system influences behavior.

3. Alison has developed an interest in how the brain controls the body's voluntary action. You suggest that she become a(n) _____ psychologist.
   A) genetic
   B) biological
   C) cognitive
   D) evolutionary

4. A technique called _____ records the brain's activity through scalp electrodes.
   A) electroencephalography(EEG)
   B) positron emission tomography (PET)
   C) computerized axial tomography (CAT)
   D) functional magnetic resonance imaging (fMRI)

5. _____ detects blood flow to brain regions, indicating heightened neural activity.
   A) Functional magnetic resonance imaging (fMRI)
   B) Positron emission tomography (PET)
   C) Computerized axial tomography (CAT)
   D) Electroencephalography (EEG)

6. Brent is taking part in an experiment in a cognitive neuroscience lab on campus. Silently, he reads rapid sequences of words flashed on a computer screen. The electrical activity of his brain is simultaneously recorded through skull electrodes. The brain-scanning technique used in this study is:
   A) computerized axial tomography (CAT).
   B) electroencephalography (EEG).
   C) positron emission tomography (PET).
   D) functional magnetic resonance imaging (fMRI).

7. Later in the course, you will learn about the different patterns of electrical activity in the brain that occur in the different stages of sleep and dreaming. Our knowledge of these patterns MOST likely reflects the use of a technique known as:
   A) computerized axial tomography (CAT).
   B) positron emission tomography (PET).
   C) electroencephalography (EEG).
   D) functional magnetic resonance imaging (fMRI).

8. A researcher is using a strong magnet to track blood-oxygen changes in participants' brains as they complete decision-making tasks. The researcher is using _____ to examine the brain's activity.
   A) computerized axial tomography (CAT).
   B) positron emission tomography (PET).
   C) electroencephalography (EEG).
   D) functional magnetic resonance imaging (fMRI).

9. Which brain study technique is correctly matched with a description?
   A) computerized axial tomography (CAT) — detects electrical energy in the brain
   B) electroencephalography (EEG) — reveals patterns of blood flow in the brain
   C) positron emission tomography (PET) — uses radioactive glucose to detect active areas in the brain
   D) functional magnetic resonance imaging (fMRI) — uses x-rays to create cross-sectional images of the brain

10. Which brain study technique is NOT correctly matched with a limitation?
    A) computerized axial tomography (CAT) — exposes people to radiation
    B) electroencephalography (EEG) — is expensive and time-consuming
    C) positron emission tomography (PET) — exposes people to radiation
    D) functional magnetic resonance imaging (fMRI) — does not necessarily localize the cognitive processes of interest

11. The building blocks of the nervous system are cells called:
    A) neurons.
    B) axons.
    C) synapses.
    D) dendrites.

12. The branch-like fibers extending in clusters from the neuron's cell body are called:
    A) axons.
    B) glial fibers.
    C) dendrites.
    D) nodes of Ranvier.

13. Compare your forearm, hand, and fingers to a neuron. In such an analogy, the dendrites are your:
    A) forearm.
    B) fingers.
    C) hand.
    D) wrist.

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

15. Compare your forearm, hand, and fingers to a neuron. In such an analogy, the axon is your:
    A) wrist.
    B) fingers.
    C) hand.
    D) forearm.

16. Dendrite is to axon as _____ is to _____.
    A) receiving; sending
    B) sending; receiving
    C) electrical; chemical
    D) action potential; reuptake

17. Which sequence accurately reflects the route followed by nerve impulses when one neuron communicates with another?
    A) dendrite> axon > cell body
    B) dendrite> cell body > axon
    C) axon> cell body > dendrite
    D) axon> dendrite > cell body

18. Electrical wires are generally protected by a tube of plastic. A similar insulating function is performed in the nervous system by:
    A) myelin.
    B) glial cells.
    C) terminal buds.
    D) dendrites.

19. Terminal buds are found at the ends of:
    A) cell bodies.
    B) dendrites.
    C) axons.
    D) glial cells.

20. Which sequence correctly arranges nervous system structures from the largest to the smallest?
    A) neuron> axon > terminal bud
    B) neuron> terminal bud > axon
    C) axon> terminal bud > neuron
    D) axon> neuron > terminal bud

21. The breaks between segments of an axon's myelin sheath are called:
    A) terminal buds.
    B) synapses.
    C) dendritic clefts.
    D) nodes of Ranvier.

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

23. As compared to neurons, there are:
    A) fewer glial cells.
    B) about as many glial cells.
    C) somewhat more glial cells.
    D) many more glial cells.

24. Which of the following is NOT one of the functions of glial cells?
    A) Defending the brain against infection.
    B) Conducting action potentials.
    C) Creating the myelin that insulates axons.
    D) Holding neurons together.

25. Which type of glial cell is correctly matched with its function?
    A) microglia— restores the blood–brain barrier.
    B) astrocytes— protect the brain from infection
    C) astrocytes— make myelin.
    D) microglia— protect the brain against infection.

26. The difference in charges inside and outside a neuron determine how positively or negatively charged the neuron is overall. This is called the neuron's:
    A) polarity.
    B) resting potential.
    C) electrostatic pressure.
    D) threshold potential.

27. The electrical potential created by the difference in charge between the inside and outside of a neuron is called the neuron's _____ potential.
    A) action
    B) threshold
    C) resting
    D) electrostatic

28. A neuron's resting potential is:
    A) –70 mV.
    B) –55 mV.
    C) 0 mV.
    D) 30 mV.

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

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

31. Which electrical charge is correctly identified?
    A) –70 mV — threshold potential
    B) –55 mV — threshold potential
    C) 30 mV — resting potential
    D) 50 mv — resting potenial

32. Which sequence correctly reflects the order in which electrical charges occur during an action potential, from first to last?
    A) threshold potential > resting potential > action potential
    B) resting potential > action potential > threshold potential
    C) action potential > threshold potential > resting potential
    D) resting potential > threshold potential > action potential

33. An action potential involves the transfer of _____ and _____ ions across an axon's membrane.
    A) calcium; potassium
    B) sodium; potassium
    C) sodium; calcium
    D) calcium; chloride

34. An action potential takes about _____ to complete.
    A) 0.1 ms
    B) 1 ms
    C) 0.01 ms
    D) 2 ms

35. You cannot fire a gun softly or flush a toilet halfway. Like an action potential, gunfire and a toilet's flush follow the _____ law.
    A) on-or-off
    B) all-or-none
    C) this-or-that
    D) is-or-isn't

36. The speed of an action potential in unmyelinated neurons is approximately _____ mph. The speed of an action potential in myelinated neurons is approximately ____ mph.
    A) 1 to 4.5; 1 to 4.5
    B) 1 to 4.5; 150 to 275
    C) 150 to 275; 1 to 4.5
    D) 150 to 275; 150 to 275

37. Which disorder reflects damaged myelination?
    A) muscular dystrophy
    B) schizophrenia
    C) Parkinson's disease
    D) multiple sclerosis

38. The chemicals that relay signals across the synapses between neurons are called:
    A) action potentials.
    B) neurotransmitters.
    C) agonists.
    D) vesicles.

39. Receptor sites are found on:
    A) myelin sheaths.
    B) axons.
    C) vesicles.
    D) dendrites.

40. A synapse is a:
    A) chemical.
    B) signal.
    C) joint.
    D) gap.

41. Changes within neurons are ____ whereas changes between neurons are _____.
    A) chemical; electrical
    B) electrical; mechanical
    C) electrical; chemical
    D) mechanical; chemical

42. Which sequence correctly orders neuronal components from the largest and most inclusive to the smallest and most specific?
    A) axon> terminal bud > vesicle
    B) axon> vesicle > terminal bud
    C) vesicle> axon > terminal bud
    D) vesicle> terminal bud > axon

43. Cocaine causes the neurotransmitter dopamine to remain at the site of the synapse longer than it normally would. Cocaine thus inhibits the process called:
    A) recycling.
    B) reuse.
    C) reuptake.
    D) reabsorption.

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

45. Researchers have identified approximately _____ neurotransmitters.
    A) 20
    B) 50
    C) 100
    D) 200

46. An advertisement for a new drug therapy catches your eye. The advertisement claims that the drug will counteract the symptoms of Alzheimer's disease. How does the drug probably work?
    A) The drug probably acts as an acetylcholine agonist.
    B) The drug probably acts as an acetylcholine antagonist.
    C) The drug probably acts as a serotonin agonist.
    D) The drug probably acts as a serotonin antagonist.

47. Too much _____ can lead to muscle spasms.
    A) serotonin
    B) acetylcholine
    C) dopamine
    D) norepinephrine

48. The neurotransmitter GABA opposes the action of the neurotransmitter:
    A) glutamate.
    B) acetylcholine.
    C) serotonin.
    D) dopamine.

49. Glutamate is MOST central to:
    A) learning and memory
    B) the development of Alzheimer's disease
    C) appetite
    D) mood

50. Carmen is driving at night in an unfamiliar city. The neighborhood looks dangerous; Carmen feels lost and on edge. The neurotransmitter _____ is helping her cope with the stressful situation.
    A) serotonin
    B) dopamine
    C) GABA
    D) norepinephrine

51. According to your text, Prozac and Zoloft boost the effects of serotonin. In other words, Prozac and Zoloft are serotonin:
    A) agonists.
    B) antagonists.
    C) inhibitors.
    D) stimulators.

52. Parkinson's disease is caused by having too little:
    A) serotonin
    B) acetylcholine
    C) dopamine
    D) norepinephrine

53. The neurotransmitter MOST closely associated with drug abuse is:
    A) dopamine.
    B) glutamate.
    C) norepinephrine.
    D) acetylcholine.

54. Popular actor Michael J. Fox lives with Parkinson's disease. His symptoms include shaking and trembling, signs of a deficiency of the neurotransmitter:
    A) GABA.
    B) norepinephrine.
    C) dopamine.
    D) serotonin.

55. Which neurotransmitter is incorrectly described?
    A) acetylcholine — enables movement
    B) GABA — prepares the body for stress
    C) serotonin — helps regulate sleep and mood
    D) dopamine — plays a role in drug use

56. Which neurotransmitter is correctly matched with a psychological function?
    A) glutamate — relief of pain
    B) serotonin — contributes to memory
    C) dopamine — facilitates learning
    D) acetylcholine — produces feelings of pleasure

57. Which disorder is correctly paired with an associated neurotransmitter?
    A) Parkinson's disease — dopamine
    B) depression — glutamate
    C) schizophrenia — serotonin
    D) Alzheimer's disease — endorphins

58. _____ function(s) as the brain's natural painkiller.
    A) Acetylcholine
    B) Dopamine
    C) Endorphins
    D) GABA

59. "Runner's high" occurs when prolonged, intense athletic activity causes the release of _____, the brain's natural painkiller.
    A) endorphins
    B) glutamate
    C) norepinephrine
    D) adenosine

60. Mr. Lopez is prescribed oxycodone to manage chronic lower back pain. Oxycodone is called an opioid because its action resembles that of _____, the brain's natural painkillers.
    A) acetylcholine
    B) dopamine
    C) adenosine
    D) endorphins

61. With respect to acetylcholine, Botox is to nicotine as _____ is to _____.
    A) stimulator; inhibitor
    B) inhibitor; stimulator
    C) agonist; antagonist
    D) antagonist; agonist

62. Your textbook states that caffeine blocks adenosine receptors. Therefore, with respect to adenosine, caffeine is a(n):
    A) agonist.
    B) antagonist.
    C) inhibitor.
    D) stimulator.

63. According to your text, adenosine slows down neuronal activity. In other words, adenosine is a(n) ____ neurotransmitter.
    A) excitatory
    B) inhibitory
    C) agonistic
    D) antagonistic

64. According to your text, caffeine increases activity not only in the brain, but also in the branch of the nervous system serving the body. This branch is called the _____ nervous system.
    A) central
    B) peripheral
    C) primary
    D) secondary

65. Which term BEST describes the organization of the nervous system?
    A) linear
    B) hierarchical
    C) random
    D) disconnected

66. At the broadest level, the nervous system is divided into the _____ and the _____ nervous systems.
    A) primary; secondary
    B) somatic; autonomic
    C) sympathetic; parasympathetic
    D) central; peripheral

67. The brain and the spinal cord constitute the _____ nervous system.
    A) central
    B) peripheral
    C) somatic
    D) primary

68. The central nervous system consists of the _____. The peripheral nervous system comprises the _____.
    A) somatic and autonomic nervous systems; sympathetic and parasympathetic nervous systems
    B) somatic and autonomic nervous systems; brain and the spinal cord
    C) sympathetic and parasympathetic nervous systems; somatic and autonomic nervous systems
    D) brain and the spinal cord; somatic and autonomic nervous systems

69. The two major divisions of the peripheral nervous system are the _____ and _____ divisions.
    A) somatic; autonomic
    B) sympathetic; parasympathetic
    C) sensory; motor
    D) skeletal; muscular

70. Which choice correctly orders branches of the nervous system from the broadest to the most specific?
    A) peripheral> sympathetic > autonomic
    B) peripheral> autonomic > sympathetic
    C) sympathetic> peripheral > autonomic
    D) autonomic> peripheral > sympathetic

71. Imagine a large city in which a downtown business district is linked to outlying suburbs by a system of subway trains. The spinal cord's sensory neurons are analogous to the system's _____ trains; the spinal cord's motor neurons are analogous to the _____ trains.
    A) local; express
    B) express; local
    C) inbound; outbound
    D) outbound; inbound

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

73. Sensory is to motor as _____ is to _____.
    A) efferent; afferent
    B) afferent; efferent
    C) afferent; interneuron
    D) interneuron; efferent

74. Automatic, involuntary responses to stimuli are called:
    A) conditioned responses.
    B) reflexes.
    C) action potentials.
    D) instincts.

75. Within the reflex circuit, it is the _____ that allows the spinal cord to control certain reflexes without the brain's help.
    A) motor neuron
    B) sensory neuron
    C) integrator
    D) interneuron

76. Bundles of neurons carrying information to and from the central nervous system are called:
    A) nerves.
    B) glia.
    C) ganglia.
    D) nuclei.

77. Sensory and motor nerves make up the _____ nervous system.
    A) autonomic
    B) parasympathetic
    C) somatic
    D) sympathetic

78. Somatic is to autonomic as _____ is to _____.
    A) excitation; rest
    B) involuntary; voluntary
    C) rest; excitation
    D) voluntary; involuntary

79. The reflex arc is a component of the _____ nervous system.
    A) somatic
    B) autonomic
    C) parasympathetic
    D) sympathetic

80. The somatic nervous system regulates external behavior; in contrast, the _____ nervous system underlies internal behavior.
    A) autonomic
    B) central
    C) endogenous
    D) secondary

81. Excitation is to rest as _____ is to _____.
    A) autonomic; somatic
    B) somatic; autonomic
    C) parasympathetic; sympathetic
    D) sympathetic; parasympathetic

82. Izzy's pupils are dilated and her heart is pounding; her breathing is shallow and rapid. Her _____ nervous system is active.
    A) somatic
    B) parasympathetic
    C) sympathetic
    D) secondary

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

84. Arden's heart rate and respiration are slowing, and her digestion is facilitated. Her _____ nervous system has become active.
    A) sympathetic
    B) somatic
    C) parasympathetic
    D) secondary

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

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

87. The parasympathetic nervous system:
    A) activates digestion.
    B) dilates the pupils.
    C) increases respiration.
    D) increases blood flow to the muscles.

88. Twenty minutes before an introductory calculus final, anxious students gather in the hall outside the examination room. To calm their nerves and gain reassurance, some students engage in small talk with those next to them. This behavior exemplifies the _____ response to stress.
    A) fight-or-flight
    B) go–no go
    C) lock-and-load
    D) tend-and-befriend

89. Women earn nearly ____% of the bachelor's degrees in the United States. In science, technology, engineering, and mathematics, women earn nearly _____% of the bachelor's degrees.
    A) 40; 40
    B) 40; 60
    C) 60; 40
    D) 60; 60

90. Neurotransmitter is to hormone as _____ is to _____.
    A) gland; neuron
    B) endocrine system; nervous system
    C) body; brain
    D) fast; slow

91. Which neurotransmitter is also a hormone?
    A) norepinephrine
    B) dopamine
    C) glutamate
    D) serotonin

92. The tiny _____ gland may be considered the endocrine system's “master gland.”
    A) pituitary
    B) thyroid
    C) pineal
    D) adrenal

93. Because it controls the pituitary gland, the brain's _____ ultimately controls the endocrine system.
    A) hypothalamus
    B) hippocampus
    C) amygdala
    D) thalamus

94. Erin is under stress: She has only a few minutes to make a connection at a large, busy airport—and the gate is in another terminal! Erin's _____ gland is probably releasing hormones.
    A) pineal
    B) adrenal
    C) thyroid
    D) pancreatic

95. Megan's pineal gland is releasing a high level of melatonin. Megan is MOST likely:
    A) anxious.
    B) hungry.
    C) sleepy.
    D) in love.

96. Lamar takes a melatonin tablet to help him sleep. The tablet's active ingredient is released naturally by the:
    A) pancreas.
    B) pineal gland.
    C) thyroid gland.
    D) pituitary gland.

97. Which hormone is correctly matched with its corresponding endocrine gland?
    A) melatonin — adrenal gland
    B) insulin — pancreas
    C) thyroxin — pituitary gland
    D) melatonin — ovaries

98. Which endocrine gland is matched with the correct function?
    A) pancreas — regulates metabolism
    B) pineal gland — regulates blood sugar
    C) thyroid gland — controls sleep-wake cycles
    D) adrenal gland — regulates salt balance

99. Estrogen is a female sex hormone. Based on the textbook's discussion of the endocrine system, which gland MOST likely releases estrogen?
    A) pancreas
    B) thyroid gland
    C) ovaries
    D) pineal gland

100. The cerebrum:
    A) iscomprised of the brain stem and the cerebellum.
    B) is located in the left hemisphere of the brain in right-handed people and some left-handed people.
    C) contains most of the brain's structures.
    D) is the part of the human brain that is most similar to the reptilian brain.

101. Regarding the brain's hemispheres, which statement is TRUE?
    A) The functions of the two hemispheres are identical.
    B) The left hemisphere controls the left side of the body.
    C) The brain's hemispheres are perfectly symmetrical.
    D) The right hemisphere controls the left side of the body.

102. Just over _____ children had hemispherectomies at Johns Hopkins between 1975 and 2001.
    A) 50
    B) 100
    C) 200
    D) 500

103. Of the children who had hemispherectomies at Johns Hopkins between 1975 and 2001, _____% no longer experienced seizures after the operation, whereas _____% continued to have troubling seizures.
    A) 65; 15
    B) 65; 25
    C) 75; 15
    D) 75; 25

104. Split-brain operations are used to treat drug-resistant:
    A) depression.
    B) epilepsy.
    C) schizophrenia.
    D) anxiety.

105. In a split-brain operation:
    A) the cerebellum is severed from the brainstem.
    B) the limbic system is separated from higher cortical areas.
    C) the frontal lobe is severed from the parietal lobe.
    D) the right hemisphere is severed from the left hemisphere.

106. The left and right hemispheres of the brain are connected by a bundle of fibers called the:
    A) corpus callosum.
    B) cerebellum.
    C) central sulcus.
    D) information superhighway.

107. Pioneering split-brain studies were conducted by:
    A) Wilder Penfield.
    B) Karl Wernicke.
    C) Phineas Gage.
    D) Roger Sperry.

108. Roger Sperry's Nobel Prize–winning split-brain investigations:
    A) offered mainly correlational data.
    B) offered a way for psychologists to study the operation of each hemisphere.
    C) suggested a potential treatment for depression.
    D) exemplify the use of naturalistic observation.

109. After the split-brain procedure, Roger Sperry and Michael Gazzaniga's patients:
    A) were less expressive emotionally.
    B) demonstrated personality changes.
    C) experienced fewer seizures.
    D) showed moderate cognitive deficits.

110. In a typical split-brain experiment, whether an image is flashed in the right or the left visual field is a(n) _____ variable.
    A) control
    B) dependent
    C) experimental
    D) independent

111. An image of a dinner fork is flashed in a split-brain patient's left visual field. The patient, in whom language is located in their left hemisphere, will be:
    A) able to name the object.
    B) able to point to a fork with his or her left hand.
    C) able to point to a fork with his or her right hand.
    D) unable to either name or point to the object.

112. The image of a screwdriver is flashed in a split-brain patient's right visual field. The patient, in whom language is located in the left hemisphere, will be:
    A) able to name the object.
    B) able only to point to a screwdriver with his or her left hand.
    C) able only to point to a screwdriver with his or her right hand.
    D) unable to either name or point to the object.

113. Solving a visual analogy will mainly involve the _____ hemisphere. Giving an oral presentation will mainly involve the _____ hemisphere.
    A) left; left
    B) left; right
    C) right; left
    D) right; right

114. Which statement is MOST accurate with respect to the lateralization of language among right-handers?
    A) It is most likely left-lateralized.
    B) It is most likely right-lateralized.
    C) The control of language is shared equally between the hemispheres.
    D) No generalization can be made: the lateralization of language varies dramatically from one person to another.

115. In the 19th century, French surgeon Pierre-Paul Broca examined two patients who had lost the ability to speak. These examinations may be considered _____ studies.
    A) case
    B) correlational
    C) experimental
    D) observational

116. A stroke damaged a portion of Broca's area in Joelle's brain. She will probably experience deficits in:
    A) language comprehension.
    B) face recognition.
    C) language production.
    D) object recognition.

117. Which individual provided early evidence for the left hemisphere's role in language processing?
    A) Franz Gall
    B) Wilder Penfield
    C) EdvardHitzig
    D) Karl Wernicke

118. Language production is to language comprehension as _____ is to _____.
    A) Pierre Broca; EdvardHitzig
    B) Pierre Broca; Karl Wernicke
    C) EdvardHitzig; Karl Wernicke
    D) Karl Wernicke; EdvardHitzig

119. Broadly speaking, visual tasks involve _____ and linguistic tasks involve _____.
    A) the right hemisphere; the left hemisphere
    B) the left hemisphere; the right hemisphere
    C) Broca's area; Wernicke's area
    D) Wernicke's area; Broca's area

120. Sam is recovering from a small stroke. He has difficulty following rapidly changing conversations, and he does not seem to understand puns or sarcasm. Additionally, he has trouble recognizing the faces of his friends and acquaintances. The stroke may have damaged:
    A) Broca's area.
    B) the left hemisphere.
    C) Wernicke's area.
    D) the right hemisphere.

121. _____ plays a key role in understanding ironic or satirical language.
    A) Broca's area
    B) The left hemisphere
    C) The right hemisphere
    D) Wernicke's area

122. Kate has suffered right-hemisphere damage. Which of the following processes is LEAST likely to be affected?
    A) understanding a pun
    B) determining whether a painting she is hanging is straight or crooked
    C) reciting a shopping list out loud
    D) recognizing a familiar look on her boyfriend's face

123. Broca's area is to Wernicke's area as the _____ lobe is to the _____ lobe.
    A) frontal; parietal
    B) frontal; temporal
    C) parietal; frontal
    D) temporal; frontal

124. Broca's area is to Wernicke's area as _____ is to _____.
    A) reading; speaking
    B) reading; writing
    C) language comprehension; language production
    D) language production; language comprehension

125. Although Violet's own speech is slow and labored, she can understand the speech of others. Violet suffers from damage to the _____ lobe.
    A) frontal
    B) temporal
    C) occipital
    D) parietal

126. Warren suffers from damage to Wernicke's area. Which impairment should he experience in thought or behavior?
    A) Warren should experience an inability to recognize faces.
    B) Warren should have difficulty visually recognizing objects.
    C) Warren should have trouble producing fluent speech.
    D) Warren should experience difficulty understanding language.

127. The process by which the brain reorganizes itself throughout development is termed:
    A) neurogenesis.
    B) neuroplasticity.
    C) neuroadaptation.
    D) neuromutability.

128. The text states that brain scans reveal that when visually impaired people learn Braille early in life, brain areas specialized for vision become active, suggesting that they become involved in processing touch sensations. In studies supporting this conclusion, brain activity is a(n) _____ variable.
    A) control
    B) dependent
    C) experimental
    D) individual

129. The text states that brain scans reveal that when visually impaired people learn Braille early in life, brain areas specialized for vision become active, suggesting that they become involved in processing touch sensations. Based on information in the text, these areas are probably in the _____ lobe.
    A) frontal
    B) temporal
    C) parietal
    D) occipital

130. The text states that brain scans reveal that when visually impaired people learn Braille early in life, brain areas specialized for vision become active, suggesting that they become involved in processing touch sensations. Based on information in the text, these areas take on functions normally associated with the _____ lobe.
    A) occipital
    B) temporal
    C) parietal
    D) frontal

131. Which statement BEST expresses the relationship between neuroplasticity and neurogenesis?
    A) Neurogenesis is an example of neuroplasticity.
    B) Neuroplasticity is an example of neurogenesis.
    C) Neurogenesis is the same process as neuroplasticity.
    D) Neuroplasticity is unrelated to neurogenesis.

132. According to the text, research on neurogenesis began in the:
    A) 1970s.
    B) 1980s.
    C) 1990s.
    D) 2000s.

133. Stem cells have been used to treat:
    A) Parkinson's disease in humans.
    B) tspinal cord injuries in mice.
    C) schizophrenia in humans.
    D) brain-injured humans.

134. The use of stem cells in research and treatment remains controversial because stem cells come from:
    A) nonhuman species.
    B) human embryos.
    C) paid adult donors.
    D) genetic engineering done in the laboratory.

135. The brain's outermost cellular layer is called the:
    A) brain stem.
    B) cerebellum.
    C) association area.
    D) cerebral cortex.

136. The temporal lobe is to the occipital lobe as _____ is to _____.
    A) hearing; touch
    B) vision; hearing
    C) touch; vision
    D) hearing; vision

137. Vision is to the occipital lobe as _____ is to the _____ lobe.
    A) hearing; frontal
    B) hearing; parietal
    C) touch; parietal
    D) touch; frontal

138. The temporal lobe is _____ the _____ lobe.
    A) beneath; occipital
    B) beneath; parietal
    C) behind; occipital
    D) behind; parietal

139. Alphonse's stroke resulted in a lesion in his temporal lobe. Which of his perceptual or cognitive functions is MOST likely impaired?
    A) motor coordination
    B) decisionmaking
    C) hearing
    D) vision

140. In a roller-blading mishap, Wendy fell down and injured the very back of her head. Which of her senses is MOST likely impaired?
    A) vision
    B) touch
    C) hearing
    D) smell

141. Which sequence correctly identifies and orders the lobes of the cortex, from anterior to posterior?
    A) frontal> temporal and parietal > posterior
    B) occipital> temporal and parietal > frontal
    C) frontal> occipital > temporal and parietal
    D) frontal> temporal and parietal > occipital

142. Anterior to the parietal lobe is the frontal lobe; beneath it is the _____ lobe.
    A) occipital
    B) dorsal
    C) temporal
    D) posterior

143. Networks of neurons in the _____ lobe are involved in processing emotions and making plans.
    A) frontal
    B) occipital
    C) parietal
    D) temporal

144. Rory, who has been diagnosed with ADHD, is often impulsive, is prone to emotional outbursts, and has difficulty making plans and carrying them out. According to the textbook, _____ lobe deficits may play a role in Rory's ADHD.
    A) occipital
    B) parietal
    C) temporal
    D) frontal

145. Which research method in psychology is exemplified by the study of Phineas Gage's thought patterns and behavior following his brain injury?
    A) the correlational method
    B) case study
    C) naturalistic observation
    D) the experimental method

146. The brain injury suffered by 19th-century railroad worker Phineas Gage allowed psychologists to learn about the functions of the brain's:
    A) frontal lobe.
    B) brainstem.
    C) limbic system.
    D) right hemisphere.

147. The _____ appears to support some aspects of personality development.
    A) corpus callosum
    B) parietal lobe
    C) brainstem
    D) frontal lobe

148. In which lobe is the motor cortex located?
    A) occipital
    B) frontal
    C) parietal
    D) temporal

149. In a neurophysiological investigation, a monkey makes an involuntary gesture when a portion of its brain is electrically stimulated. The area of the brain that was MOST likely stimulated is the _____ portion of the _____ lobe.
    A) front; frontal
    B) front; parietal
    C) rear; frontal
    D) rear; parietal.

150. Autopsy studies of Einstein's brain suggest that the _____ lobe may be involved in spatial and mathematical intelligence.
    A) frontal
    B) parietal
    C) temporal
    D) occipital

151. Which statement BEST describes the relationship between the amount of motor cortex devoted to the control of a particular movement and the degree of precision required by the movement?
    A) There is no relationship.
    B) There is only a weak relationship.
    C) There is a positive correlation.
    D) There is a negative correlation.

152. There is a _____ correlation between the touch sensitivity of a body part and the amount of somatosensory cortex devoted to that part.
    A) negative
    B) minimal
    C) positive
    D) perfect

153. Somatosensory cortex is to motor cortex as the _____ lobe is to the _____ lobe.
    A) temporal; parietal
    B) parietal; temporal
    C) parietal; frontal
    D) frontal; parietal

154. Auditory cortex is to the _____ lobe as _____ cortex is to the occipital lobe.
    A) parietal; somatosensory
    B) parietal; visual
    C) temporal; somatosensory
    D) temporal; visual

155. Which choice correctly pairs a case study or scientist from psychology's history, with the cortical area with which he is associated?
    A) Albert Einstein — parietal lobe
    B) Gustav Fritsch — temporal lobe
    C) Phineas Gage — somatosensory cortex
    D) Wilder Penfield — occipital lobe

156. Which lobe is correctly matched with its cortical area?
    A) frontal lobe — visual cortex
    B) occipital lobe — somatosensory cortex
    C) parietal lobe — motor cortex
    D) temporal lobe — auditory cortex

157. Sensory and motor information is integrated in the _____ areas of the cortex.
    A) association
    B) correlation
    C) relational
    D) coordination

158. The brain's association areas:
    A) are more precisely localized than are the sensory and motor areas.
    B) receive and analyze sensory stimuli.
    C) make up the majority of the cortical surface.
    D) are smaller than the sensory or motor areas.

159. Language processing involves synthesizing information from many different brain areas. Broca's and Wernicke's areas are therefore considered _____ areas.
    A) integration
    B) coordination
    C) correlation
    D) association

160. Research cited in the text found an association between number of Facebook friends and the density of the gray matter in a brain area important to social interaction. This association is MOST likely a(n) _____ correlation.
    A) inverse
    B) negative
    C) perfect
    D) positive

161. The _____ is a group of interrelated structures involved in people's experiences of emotion, motivation, and memory.
    A) reticular formation
    B) limbic system
    C) hindbrain
    D) corpus callosum

162. Which structure is NOT part of the limbic system?
    A) amygdala
    B) hippocampus
    C) medulla
    D) thalamus

163. The brain area that is MOST active when a person is shown intense, emotional pictures is the:
    A) thalamus.
    B) hypothalamus.
    C) hippocampus.
    D) amygdala.

164. Darnell underwent surgery to control his severe epilepsy. Now, however, Darnell cannot form new memories of his experiences, although he does remember events in the past. Most likely, the surgery destroyed a portion of the _____ in Darnell's brain.
    A) hypothalamus
    B) hippocampus
    C) amygdala
    D) thalamus

165. The amygdala is to emotion as the hippocampus is to:
    A) problem solving.
    B) motivation.
    C) arousal.
    D) memory.

166. The ____ may be considered the brain's sensory relay station.
    A) amygdala
    B) hippocampus
    C) thalamus
    D) hypothalamus

167. Pizza! Beer! Sex! Our motivation or drive for such things is based in part on the activity of the brain structure known as the:
    A) hypothalamus.
    B) hippocampus.
    C) thalamus.
    D) pons.

168. The hypothalamus is located immediately _____ the thalamus.
    A) below
    B) above
    C) in front of
    D) behind

169. Which function is correctly matched with its corresponding limbic system structure?
    A) sensation — amygdala
    B) emotion — hippocampus
    C) motivation — hypothalamus
    D) memory — thalamus

170. Which limbic system structure is correctly matched with the potential effects of damage to that structure?
    A) amygdala — unusual emotional or aggressive behavior
    B) hippocampus — difficulties in learning and memory
    C) hypothalamus — poor regulation of hunger and eating
    D) All of these structures are correctly matched.

171. The reticular activating system is located in the _____. It regulates _____.
    A) midbrain; arousal
    B) forebrain; movement
    C) forebrain; arousal
    D) hindbrain; movement

172. The pons serves to:
    A) regulate arousal.
    B) relay sensory information.
    C) coordinate movement.
    D) consolidate memories.

173. The hindbrain includes each of the following structures EXCEPT the:
    A) medulla.
    B) pons.
    C) cerebellum.
    D) thalamus.

174. Which choice correctly identifies the structures in the brainstem?
    A) medulla, thalamus, amygdala
    B) reticular formation, thalamus, amygdala
    C) pons, reticular formation, amygdala
    D) medulla, pons, reticular formation

175. The part of the brainstem closest to the spinal cord is the _____; it is important for such functions as _____.
    A) pons; breathing and heart rate
    B) pons; movement
    C) medulla; breathing and heart rate
    D) medulla; movement

176. The word “cerebellum” means “little brain.” Where in the brain is the cerebellum located in relation to the brainstem?
    A) in front of
    B) beneath
    C) behind
    D) above

177. Yves has been drinking. When a police officer asks him to walk a straight line, he has difficulty doing so. Apparently Yves's _____ , which normally helps him balance, is functioning poorly.
    A) cerebellum
    B) thalamus
    C) medulla
    D) amygdala

178. Kira seems uncoordinated, often tripping or stumbling. She also sometimes displays emotional reactions that do not fit the situation. Kira's _____ may be damaged.
    A) medulla
    B) pons
    C) cerebellum
    D) hippocampus

Answer Key

1. D
2. C
3. B
4. A
5. A
6. B
7. C
8. D
9. C
10. B
11. A
12. C
13. B
14. D
15. D
16. A
17. B
18. A
19. C
20. A
21. D
22. B
23. D
24. B
25. D
26. A
27. C
28. A
29. A
30. C
31. B
32. D
33. B
34. B
35. B
36. B
37. D
38. B
39. D
40. D
41. C
42. A
43. C
44. C

45. C
46. A
47. B
48. A
49. A
50. D
51. A
52. C
53. A
54. C
55. B
56. C
57. A
58. C
59. A
60. D
61. D
62. B
63. B
64. B
65. B
66. D
67. A
68. D
69. A
70. B
71. C
72. D
73. B
74. B
75. D
76. A
77. C
78. D
79. A
80. A
81. D
82. C
83. B
84. C
85. B
86. D
87. A
88. D
89. C
90. D

91. A
92. A
93. A
94. B
95. C
96. B
97. B
98. D
99. C
100. C
101. D
102. B
103. A
104. B
105. D
106. A
107. D
108. B
109. C
110. D
111. B
112. A
113. C
114. A
115. A
116. C
117. D
118. B
119. A
120. D
121. C
122. C
123. B
124. D
125. A
126. D
127. B
128. B
129. D
130. C
131. A
132. C
133. B
134. B
135. D
136. D

137. C
138. B
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140. A
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142. C
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145. B
146. A
147. D
148. B
149. C
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165. D
166. C
167. A
168. A
169. C
170. D
171. A
172. C
173. D
174. D
175. C
176. C
177. A
178. C