Chapter 2: Biological Bases of Behavior

MULTIPLE CHOICE

1. What progressive neurological disorder is characterized by memory loss, personality deterioration, and emotional outbursts?
   a. Parkinson's disease
   b. Multiple Sclerosis
   c. Autism
   d. Alzheimer's disease

   ANS: D PTS: 1 DIF: Bloom's: Remember
   REF: 2.1 Introduction, Textbook | Video - Alzheimer's Disease, Online | Video - Declining Mental Acuity, Online OBJ: LO1 Describe Alzheimer's disease.
   MSC: TYPE: Easy

2. Charles has Alzheimer's disease. What can Charles and his family expect in the coming years?
   a. His condition will worsen.
   b. Charles' cognitive function will deteriorate, but his personality should not dramatically change.
   c. Charles will have to take medication for many months, but it is possible to cure his disease.
   d. The course of Alzheimer's is difficult to describe.

   ANS: A PTS: 1 DIF: Bloom's: Understand
   REF: 2.1 Introduction, Textbook | Video - Alzheimer's Disease, Online | Video - Declining Mental Acuity, Online OBJ: LO1 Describe Alzheimer's disease.
   MSC: TYPE: Easy

3. Which of the following statements best explains why psychologists should study the nervous system?
   a. The nervous system is controlled by the mind and psychologists focus on the mind.
   b. Behavior, both normal and abnormal, has its roots in the nervous system.
   c. Psychologists can perform brain surgery to cure illnesses such as Alzheimer's.
   d. It is required for licensing and insurance payments.

   ANS: B PTS: 1 DIF: Bloom's: Understand
   REF: 2.1 Introduction, Textbook OBJ: LO1 Describe Alzheimer's disease.
   MSC: TYPE: Medium

4. ____ are chains of chemicals arranged like rungs on a twisting ladder.
   a. Genes
   b. Neurons
   c. Opsins
   d. Neurotransmitters

   ANS: A PTS: 1 DIF: Bloom's: Remember
   REF: 2.2 Genes and Evolution, Textbook | Animation - Genes Overview, Online
   OBJ: LO2 Describe the structures and processes involved in genetic transmission.
   MSC: TYPE: Easy

5. Chromosomes consist of:
   a. zygotes
   b. sperm
   c. DNA
   d. phenotypes

   ANS: C PTS: 1 DIF: Bloom's: Remember
   REF: 2.2 Genes and Evolution, Textbook
   OBJ: LO2 Describe the structures and processes involved in genetic transmission.
   MSC: TYPE: Easy

6. A ____ is a specific segment on the long strand of DNA.
   a. gene
   b. zygote
   c. chromosome
   d. phenotype

   ANS: A PTS: 1 DIF: Bloom's: Remember
   REF: 2.2 Genes and Evolution, Textbook | Animation - Genes Overview, Online
   OBJ: LO2 Describe the structures and processes involved in genetic transmission.
   MSC: TYPE: Easy

7. Which statement is <u>most</u> accurate in describing the order from smallest to largest?
   a. zygote, genes, DNA, chromosomes
   b. genes, DNA, chromosomes, zygote
   c. DNA, zygote, genes, chromosomes
   d. DNA, genes, chromosomes, zygote

   ANS: D PTS: 1 DIF: Bloom's: Apply
   REF: 2.2 Genes and Evolution, Textbook
   OBJ: LO2 Describe the structures and processes involved in genetic transmission.
   MSC: TYPE: Medium

8. “The color of your eyes is due to genes.” Genes provide instructions for making:
   a. protein
   b. genomes
   c. DNA
   d. chromosomes

   ANS: A PTS: 1 DIF: Bloom's: Understand
   REF: 2.2 Genes and Evolution, Textbook | Animation - "Inheriting Eye Color," Online
   OBJ: LO2 Describe the structures and processes involved in genetic transmission.
   MSC: TYPE: Easy

9. A gene that has more than one version is called a:
   a. polymorphic gene
   b. zygote
   c. genome
   d. chromosome

   ANS: A PTS: 1 DIF: Bloom's: Remember
   REF: 2.2 Genes and Evolution, Textbook | Animation - Genes Overview, Online
   OBJ: LO2 Describe the structures and processes involved in genetic transmission.
   MSC: TYPE: Easy

10. What type of gene is expressed even if it is paired with a recessive gene?
    a. polymorphic gene
    b. zygote
    c. genome
    d. dominant

    ANS: D PTS: 1 DIF: Bloom's: Understand
    REF: 2.2 Genes and Evolution, Textbook
    OBJ: LO2 Describe the structures and processes involved in genetic transmission.
    MSC: TYPE: Easy

11. The gene for brown eyes is _____; the gene for blue eyes is _____.
    a. recessive; zygotic
    b. dominant; recessive
    c. recessive; dominant
    d. recessive; phenotypic

    ANS: B PTS: 1 DIF: Bloom's: Remember
    REF: 2.2 Genes and Evolution, Textbook | Animation - Inheriting Eye Color, Online
    OBJ: LO2 Describe the structures and processes involved in genetic transmission.
    MSC: TYPE: Easy

12. You inherited a gene for brown eyes from your father, but a gene for blue eyes from your mother. What color are your eyes?
    a. blue
    b. brown
    c. green
    d. impossible to predict

    ANS: B PTS: 1 DIF: Bloom's: Apply
    REF: 2.2 Genes and Evolution, Textbook | Animation - Inheriting Eye Color, Online
    OBJ: LO2 Describe the structures and processes involved in genetic transmission.
    MSC: TYPE: Easy

13. Which statement is <u>not</u> consistent with Darwin's view of evolution?
    a. Different species arouse from a common ancestor.
    b. Humans and chimps share at least 98% of their DNA.
    c. Present day humans descended from a creature that split off from apes.
    d. Humans belong to their own, unique family tree.

    ANS: D PTS: 1 DIF: Bloom's: Evaluate
    REF: 2.2 Genes and Evolution, Textbook
    OBJ: LO3 Articulate the forces believed to be responsible for the evolution of the human brain and describe the relevance of the theory of evolution in how psychologists conduct research today.
    MSC: TYPE: Medium

14. According to the theory of evolution:
    a. different species arose from different ancestors
    b. humans belong to their own, unique family tree
    c. present day humans descended from a creature related to apes
    d. humans and chimps share only 1% of their DNA

    ANS: C PTS: 1 DIF: Bloom's: Understand
    REF: 2.2 Genes and Evolution, Textbook
    OBJ: LO3 Articulate the forces believed to be responsible for the evolution of the human brain and describe the relevance of the theory of evolution in how psychologists conduct research today.
    MSC: TYPE: Medium

15. From the evolutionary perspective, mutations that improve our survival and functioning are called:
    a. polymorphic genes
    b. natural selections
    c. adaptations
    d. genome

    ANS: C PTS: 1 DIF: Bloom's: Understand
    REF: 2.2 Genes and Evolution, Textbook
    OBJ: LO3 Articulate the forces believed to be responsible for the evolution of the human brain and describe the relevance of the theory of evolution in how psychologists conduct research today.
    MSC: TYPE: Easy

16. The two groups of cells in your brain are:
    a. glial cells and astrocytes
    b. neurons and axons
    c. genes and peripheral cells
    d. neurons and glial cells

    ANS: D PTS: 1 DIF: Bloom's: Remember
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online OBJ: LO4 Identify the main functions of glial cells.
    MSC: TYPE: Easy

17. Which brain cells are responsible for providing insulation around the neuron?
    a. GABA cells
    b. curare cells
    c. axon cells
    d. glial cells

    ANS: D PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online OBJ: LO4 Identify the main functions of glial cells.
    MSC: TYPE: Easy

18. Glial cells are to ____ as neurons are to ____.
    a. support; transmit
    b. transmit; insulate
    c. support; insulate
    d. Alzheimer's disease; ADHD

    ANS: A PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online OBJ: LO4 Identify the main functions of glial cells.
    MSC: TYPE: Medium

19. The functions of neurons include:
    a. transmitting and receiving electrical messages
    b. providing support for glial cells
    c. insulating axons
    d. opening sodium gates in glial cells

    ANS: A PTS: 1 DIF: Bloom's: Remember
    REF: Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO5 Identify the various parts of the neuron and explain how a neuron functions.
    MSC: TYPE: Easy

20. Which structures specialize in receiving electrical signals and transmitting electrical signals?
    a. glial cells
    b. neurons
    c. dendrites
    d. astrocytes

    ANS: B PTS: 1 DIF: Bloom's: Remember
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO5 Identify the various parts of the neuron and explain how a neuron functions.
    MSC: TYPE: Easy

21. What do the two main extensions of a neuron do?
    a. receive and transmit electrical signals
    b. wrap around glial cells
    c. support mature glial cells
    d. provide the mechanisms by which glial cells repair themselves

    ANS: A PTS: 1 DIF: Bloom's: Remember
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO5 Identify the various parts of the neuron and explain how a neuron functions.
    MSC: TYPE: Easy

22. Electrical messages can be transmitted in the neuron up to:
    a. 2 miles per hour
    b. 200 miles per hour
    c. 2000 miles per hour
    d. 20,000 miles per hour

    ANS: B PTS: 1 DIF: Bloom's: Remember
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO5 Identify the various parts of the neuron and explain how a neuron functions.
    MSC: TYPE: Easy

23. The ____ keeps the neuron in working order and has specialized extensions that arise from it.
    a. axon
    b. myelin sheath
    c. cell body
    d. synapse

    ANS: C PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO5 Identify the various parts of the neuron and explain how a neuron functions.
    MSC: TYPE: Easy

24. Consider this scenario: The neuron is dying. All of the structures except the cell body are healthy and undamaged. Why might damage to the cell body be the reason for the neuron's impending death?
    a. The cell body is responsible for insulating the neuron.
    b. The nucleus may be damaged.
    c. The cell body receives nourishment from the glial cells.
    d. The cell body keeps the neuron in working order.

    ANS: D PTS: 1 DIF: Bloom's: Analyze
    REF: 2.3 Neurons: Structure, Function and Communication, Textbook
    OBJ: LO5 Identify the various parts of the neuron and explain how a neuron functions.
    MSC: TYPE: Medium

25. If the axon is the "output" structure of the neuron, the input structure is the:
    a. end bulb
    b. dendrite
    c. myelin
    d. lobe

    ANS: B PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO5 Identify the various parts of the neuron and explain how a neuron functions.
    MSC: TYPE: Easy

26. Which part of a neuron carries signals away from the cell body?
    a. axon
    b. cell body
    c. end bulb
    d. dendrites

    ANS: A PTS: 1 DIF: Bloom's: Remember
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO5 Identify the various parts of the neuron and explain how a neuron functions.
    MSC: TYPE: Easy

27. "This is a bad television set. We're getting lots of interference from other electrical appliances in our apartment." You remember the structures of the neuron and say, "Wish we had a television set covered with a(n)..."
    a. myelin sheath
    b. axon
    c. dendrite
    d. neurotransmitter

    ANS: A PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO5 Identify the various parts of the neuron and explain how a neuron functions.
    MSC: TYPE: Medium

28. Tiny sacs or vesicles that are filled with neurotransmitters are located in the:
    a. end bulbs
    b. axon
    c. dendrites
    d. synapse

    ANS: A PTS: 1 DIF: Bloom's: Remember
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO5 Identify the various parts of the neuron and explain how a neuron functions.
    MSC: TYPE: Easy

29. A synapse is the:
    a. part of the dendrite that receives incoming signals
    b. small space between the end bulb and its neighboring dendrite, muscle fiber, or body organ
    c. chemical that transmits signals from one neuron to another
    d. signal that travels from one neuron to another

    ANS: B PTS: 1 DIF: Bloom's: Remember
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO5 Identify the various parts of the neuron and explain how a neuron functions.
    MSC: TYPE: Easy

30. End bulbs release neurotransmitters into the:
    a. cell body
    b. synapse
    c. myelin sheath
    d. axon

    ANS: B PTS: 1 DIF: Bloom's: Remember
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO5 Identify the various parts of the neuron and explain how a neuron functions.
    MSC: TYPE: Easy

31. The membrane of the axon has the unique ability to:
    a. ionize itself
    b. change its size
    c. open and close its chemical gates
    d. negatively charge the dendrites

    ANS: C PTS: 1 DIF: Bloom's: Remember
    REF: 2.3 Neurons: Structure, Function and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO6 Describe the sequence of the action potential and neural impulse.
    MSC: TYPE: Medium

32. Opposite-charged ions ____ and like-charged ions ____.
    a. attract; repel
    b. are permeable; are semipermeable
    c. have sodium; have protein
    d. are positive; are negative

    ANS: A PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook
    OBJ: LO6 Describe the sequence of the action potential and neural impulse.
    MSC: TYPE: Medium

33. When a neuron is in a resting state, the majority of the particles in the fluid surrounding the neuron are:
    a. positive sodium ions
    b. sodium ions that have yet to pick up a charge
    c. chloride ions
    d. chemically inert

    ANS: A PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook
    OBJ: LO6 Describe the sequence of the action potential and neural impulse.
    MSC: TYPE: Medium

34. The "all-or-none law" explains what happens when:
    a. positively and negatively charged ions meet
    b. an impulse starts at the beginning of an axon
    c. electrical impulses spread throughout the body
    d. your brain gets the idea of a six-pack

    ANS: B PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook
    OBJ: LO6 Describe the sequence of the action potential and neural impulse.
    MSC: TYPE: Medium

35. What accounts for the action potential moving down the axon at a constant speed?
    a. all-or-none law
    b. paced resistance principle
    c. snowball effect
    d. neuronal push rule

    ANS: A PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO6 Describe the sequence of the action potential and neural impulse.
    MSC: TYPE: Medium

36. If the stimulation is strong enough, the neuron's chemical gates ____ and ____ will come into the neuron.
    a. open; negative sodium ions
    b. open; positive sodium ions
    c. close; positive sodium ions
    d. close; vesicles

    ANS: B PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO6 Describe the sequence of the action potential and neural impulse.
    MSC: TYPE: Medium

37. If the positive sodium ions rush inside the axon, the axon will:
    a. enter the resting state
    b. release a neurotransmitter
    c. change its threshold
    d. experience an action potential

    ANS: D PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook
    OBJ: LO6 Describe the sequence of the action potential and neural impulse.
    MSC: TYPE: Medium

38. Which statement is true if there is an action potential at a particular point along the axon? At that point in the axon, the
    a. inside of the axon is positively charged; the outside is negatively charged
    b. inside of the axon is negatively charged; the outside is positively charged
    c. sodium pumps are highly active
    d. chemical gates are closed to sodium ions

    ANS: A PTS: 1 DIF: Bloom's: Analyze
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook
    OBJ: LO6 Describe the sequence of the action potential and neural impulse.
    MSC: TYPE: Difficult

39. A tiny electrical current generated in the axon is called a(n)
    a. electropotential
    b. ion wave
    c. action potential
    d. resting potential

    ANS: C PTS: 1 DIF: Bloom's: Remember
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook
    OBJ: LO6 Describe the sequence of the action potential and neural impulse.
    MSC: TYPE: Easy

40. What structure in the neuron helps to speed up the transmission of the action potential?
    a. axon
    b. dendrites
    c. myelin sheath
    d. end bulb

    ANS: C PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO6 Describe the sequence of the action potential and neural impulse.
    MSC: TYPE: Easy

41. While speeding down an axon, the impulse reaches an incredible speed by jumping at the breaks in the:
    a. end bulb
    b. dendrite
    c. myelin sheath
    d. synapse

    ANS: C PTS: 1 DIF: Bloom's: Remember
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO6 Describe the sequence of the action potential and neural impulse.
    MSC: TYPE: Easy

42. ____ is/are (a) chemical messenger(s) that transmit(s) information between nerves and body organs.
    a. Transmitters
    b. Ion
    c. THC
    d. Enzymes

    ANS: A PTS: 1 DIF: Bloom's: Remember
    REF: 2.3 Neurons: Structure, Function and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO7 Describe neurotransmitters and explain how neurons communicate at chemical synapses.
    MSC: TYPE: Easy

43. Neurotransmitters are found in the:
    a. myelin sheath
    b. sodium ions
    c. inhibitory sodium
    d. end-bulbs

    ANS: D PTS: 1 DIF: Bloom's: Remember
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO7 Describe neurotransmitters and explain how neurons communicate at chemical synapses.
    MSC: TYPE: Easy

44. What substance is found in the end bulbs?
    a. neurotransmitters
    b. sodium ions
    c. inhibitory sodium
    d. precursors

    ANS: A PTS: 1 DIF: Bloom's: Remember
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO7 Describe neurotransmitters and explain how neurons communicate at chemical synapses.
    MSC: TYPE: Easy

45. If receptors in muscle fibers are thought of as locks, the keys are:
    a. the action potential of the axon
    b. synapses
    c. the resting state of the axon
    d. neurotransmitters

    ANS: D PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook
    OBJ: LO7 Describe neurotransmitters and explain how neurons communicate at chemical synapses.
    MSC: TYPE: Easy

46. After the release of neurotransmitters in the synapse, neurotransmitters cross the synapse and:
    a. fit into specially designed axons
    b. cause the second neuron to open its chemical locks
    c. cause the process known as reuptake
    d. fit into specially designed receptors located on the second neuron's dendrites

    ANS: D PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO7 Describe neurotransmitters and explain how neurons communicate at chemical synapses.
    MSC: TYPE: Medium

47. If a neurotransmitter key *opens* the receptor's lock, then the neurotransmitter is said to be:
    a. at the threshold
    b. excitatory
    c. positively charged
    d. at an action potential

    ANS: B PTS: 1 DIF: Bloom's: Apply
    REF: 2.3 Neurons: Structure, Function and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO7 Describe neurotransmitters and explain how neurons communicate at chemical synapses.
    MSC: TYPE: Medium

48. If a neurotransmitter key *closes* the receptor's lock, then the neurotransmitter is said to be:
    a. at the threshold
    b. inhibitory
    c. positively charged
    d. at an action potential

    ANS: B PTS: 1 DIF: Bloom's: Apply
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO7 Describe neurotransmitters and explain how neurons communicate at chemical synapses.
    MSC: TYPE: Medium

49. Excitatory neurotransmitters:
    a. open the receptor's lock
    b. slow down the speed of a nerve impulse
    c. reverse the charge of a sodium ion
    d. are released during the resting state

    ANS: A PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO7 Describe neurotransmitters and explain how neurons communicate at chemical synapses.
    MSC: TYPE: Medium

50. Inhibitory neurotransmitters:
    a. close the receptor's lock
    b. slow down the speed of a nerve impulse
    c. reverse the charge of a sodium ion
    d. are released during the resting state

    ANS: A PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO7 Describe neurotransmitters and explain how neurons communicate at chemical synapses.
    MSC: TYPE: Medium

51. The effect of a neurotransmitter on an adjacent neuron, muscle, or organ is:
    a. excitatory
    b. inhibitory
    c. either excitatory or inhibitory
    d. determined by the all-or-none law

    ANS: C PTS: 1 DIF: Bloom's: Understand
    REF: 2,3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO7 Describe neurotransmitters and explain how neurons communicate at chemical synapses.
    MSC: TYPE: Easy

52. Excitatory transmitters ____ chemical locks; inhibitory transmitters ____ chemical locks.
    a. close; open
    b. open; close
    c. destroy; open
    d. open; destroy

    ANS: B PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO7 Describe neurotransmitters and explain how neurons communicate at chemical synapses.
    MSC: TYPE: Easy

53. A child puts her hand on a hot stove. She quickly removes it. This is an example of a(n) ____, and it involves ____.
    a. learned response; reflexes
    b. activating stimulus; voluntary reaction
    c. reflex; involuntary reaction
    d. excitatory signal; efferent neurons

    ANS: C PTS: 1 DIF: Bloom's: Analyze
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook
    OBJ: LO8 Describe the sequence of the reflex response. MSC: TYPE: Medium

54. Neurons that carry information from the senses to the spinal cord are called ____ neurons.
    a. spinal
    b. motor
    c. afferent
    d. efferent

    ANS: C PTS: 1 DIF: Bloom's: Remember
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook
    OBJ: LO8 Describe the sequence of the reflex response. MSC: TYPE: Easy

55. If all the efferent neurons were removed from your nervous system, you would be unable to:
    a. process language
    b. move your body
    c. solve complex problems
    d. control your emotions

    ANS: B PTS: 1 DIF: Bloom's: Analyze
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook
    OBJ: LO8 Describe the sequence of the reflex response. MSC: TYPE: Medium

56. Efferent neurons carry information away from the:
    a. axon
    b. muscles
    c. synapse
    d. spinal cord

    ANS: D PTS: 1 DIF: Bloom's: Remember
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook
    OBJ: LO8 Describe the sequence of the reflex response. MSC: TYPE: Easy

57. The nerves in the body (excluding the brain and spinal cord) make up the:
    a. peripheral nervous system
    b. central nervous system
    c. primary nervous system
    d. secondary nervous system

    ANS: A PTS: 1 DIF: Bloom's: Understand
    REF: 2.4 Nervous System, Textbook | Animation - Nervous Systems, Online
    OBJ: LO10 Classify the major divisions and subdivisions of the nervous system.
    MSC: TYPE: Easy

58. As you're waiting to visit a friend in the hospital, you overhear a physician talking to a patient's parents. You don't hear the entire conversation, but only bits and pieces. There is something about an accident and a question regarding nerves reattaching. The physician replied that the nerves do have the ability to regrow. From your education in psychology, you guess that the nerves were probably part of the:
    a. spinal cord
    b. central nervous system
    c. peripheral nervous system
    d. limbic system

    ANS: C PTS: 1 DIF: Bloom's: Analyze
    REF: 2.4 Nervous System, Textbook | Animation - Nervous Systems, Online
    OBJ: LO10 Classify the major divisions and subdivisions of the nervous system.
    MSC: TYPE: Medium

59. Afferent is to efferent as ____ is to ____.
    a. sensory; motor
    b. motor; sensory
    c. sensory; spinal
    d. spinal; neuron

    ANS: A PTS: 1 DIF: Bloom's: Understand
    REF: 2.4 Nervous System, Textbook | Animation - Nervous Systems, Online
    OBJ: LO11 Differentiate the functions of the major divisions and subdivisions of the nervous system.
    MSC: TYPE: Medium

60. The somatic nervous system contains:
    a. sympathetic division and parasympathetic division
    b. afferent and efferent fibers
    c. sensory and afferent fibers
    d. motor fibers and latent fibers

    ANS: B PTS: 1 DIF: Bloom's: Understand
    REF: 2.4 Nervous System, Textbook | Animation - Nervous Systems, Online
    OBJ: LO11 Differentiate the functions of the major divisions and subdivisions of the nervous system.
    MSC: TYPE: Easy

61. Karen was able to live in a coma for several years even when taken off the respirator. This is because parts of the body not under conscious control continue to function. These parts are regulated by the:
    a. central nervous system
    b. autonomic nervous system
    c. somatic nervous system
    d. forebrain

    ANS: B PTS: 1 DIF: Bloom's: Analyze
    REF: 2.4 Nervous System, Textbook | Animation - Nervous Systems, Online
    OBJ: LO11 Differentiate the functions of the major divisions and subdivisions of the nervous system.
    MSC: TYPE: Medium

62. The specific part of the nervous system that is responsible for returning the body to a relaxed state is the:
    a. parasympathetic nervous system
    b. somatic nervous system
    c. autonomic nervous system
    d. peripheral nervous system

    ANS: A PTS: 1 DIF: Bloom's: Remember
    REF: 2.4 Nervous System, Textbook | Animation - Nervous Systems, Online
    OBJ: LO11 Differentiate the functions of the major divisions and subdivisions of the nervous system.
    MSC: TYPE: Easy

63. The two divisions of the nervous system are:
    a. sympathetic division and parasympathetic division
    b. somatic nervous system and central nervous system
    c. autonomic nervous system and central nervous system
    d. peripheral nervous system and central nervous system

    ANS: D PTS: 1 DIF: Bloom's: Remember
    REF: 2.4 Nervous System, Textbook | Animation - Nervous Systems, Online
    OBJ: LO11 Differentiate the functions of the major divisions and subdivisions of the nervous system.
    MSC: TYPE: Easy

64. You're looking at a book entitled *Your Autonomic Nervous System*. One of the chapter titles is really confusing based upon your knowledge of the autonomic nervous system. Which chapter seems to <u>not</u> fit your knowledge?
    a. The Sympathetic Division: Activating in Times of Stress
    b. Relaxing with the Parasympathetic Division
    c. The Autonomic Nervous System: You CAN Control It All!
    d. The Autonomic Nervous System: Part of The Peripheral Nervous System

    ANS: C PTS: 1 DIF: Bloom's: Evaluate
    REF: 2.4 Nervous System, Textbook | Animation - Autonomic Nervous System, Online
    OBJ: LO11 Differentiate the functions of the major divisions and subdivisions of the nervous system.
    MSC: TYPE: Medium

65. What part of your nervous system, which requires deep thought, do you use to correctly answer this question?
    a. central nervous system
    b. somatic nervous system
    c. autonomic nervous system
    d. parasympathetic division

    ANS: A PTS: 1 DIF: Bloom's: Understand
    REF: 2.4 Nervous System, Textbook
    OBJ: LO11 Differentiate the functions of the major divisions and subdivisions of the nervous system.
    MSC: TYPE: Easy

66. Which technique uses radio frequencies to study the structure of the brain?
    a. MRI scan
    b. SET scan
    c. PET scan
    d. the stereotaxic procedure

    ANS: A PTS: 1 DIF: Bloom's: Analyze
    REF: 2.5 Studying the Living Brain, Textbook
    OBJ: LO12 Describe the different technologies used to investigate the brain.
    MSC: TYPE: Medium

67. fMRI is to ____ as MRI is to ____.
    a. structure; function
    b. function; structure
    c. organization; function
    d. x-ray; gamma ray

    ANS: B PTS: 1 DIF: Bloom's: Analyze
    REF: 2.5 Studying the Living Brain, Textbook
    OBJ: LO12 Describe the different technologies used to investigate the brain.
    MSC: TYPE: Easy

68. Ivan is having his brain scanned. As the machine is working, he is asked to read words on a screen. He is most likely having a(n):
    a. MRI scan
    b. SET scan
    c. fMRI scan
    d. x-ray scan

    ANS: C PTS: 1 DIF: Bloom's: Analyze
    REF: 2.5 Studying the Living Brain, Textbook
    OBJ: LO12 Describe the different technologies used to investigate the brain.
    MSC: TYPE: Easy

69. What is the main advantage of fMRI over PET scans?
    a. PET scans can cause brain damage
    b. cost
    c. fMRI can be done with the person awake
    d. fMRI does not require injection of a radioactive solution

    ANS: D PTS: 1 DIF: Bloom's: Evaluate
    REF: 2.5 Studying the Living Brain, Textbook
    OBJ: LO12 Describe the different technologies used to investigate the brain.
    MSC: TYPE: Medium

70. Positron Emission Tomography (PET) differs from Magnetic Resonance Imaging (MRI) in that a PET scan:
    a. studies the structure of the brain
    b. studies activity in the brain
    c. uses radio frequencies
    d. identifies spinal cord injuries

    ANS: B PTS: 1 DIF: Bloom's: Analyze
    REF: 2.5 Studying the Living Brain, Textbook
    OBJ: LO12 Describe the different technologies used to investigate the brain.
    MSC: TYPE: Medium

71. Positron emission tomography (PET) is a technique used to:
    a. transplant fetal brain tissue
    b. repair damaged neurons in the spinal cord
    c. study the function of brain areas
    d. perform a frontal lobotomy

    ANS: C PTS: 1 DIF: Bloom's: Understand
    REF: 2.5 Studying the Living Brain, Textbook
    OBJ: LO12 Describe the different technologies used to investigate the brain.
    MSC: TYPE: Easy

72. Stereotaxic procedures:
    a. cause a great deal of brain damage
    b. are used for brain tissue transplants
    c. have been shown to be ineffective in treating Parkinson's disease
    d. have only been performed on animals

    ANS: B PTS: 1 DIF: Bloom's: Remember
    REF: 2.5 Studying the Living Brain, Textbook
    OBJ: LO13 Describe experimental procedures to treat the brain.
    MSC: TYPE: Easy

73. In treating Parkinson's disease with brain stimulation, the patient:
    a. undergoes painful shock treatment while under general anesthesia
    b. often develops uncontrollable seizures
    c. develops unwanted jerky movement
    d. controls the amount of stimulation

    ANS: D PTS: 1 DIF: Bloom's: Understand
    REF: 2.5 Studying the Living Brain, Textbook | Video - A Brain Pacemaker, Online
    OBJ: LO13 Describe experimental procedures to treat the brain.
    MSC: TYPE: Easy

74. .The three main divisions of the human brain are:
    a. forebrain, midbrain, and cerebrain
    b. topbrain, midbrain, and hindbrain
    c. forebrain, midbrain, and hindbrain
    d. neobrain, lateralbrain, and medialbrain

    ANS: C PTS: 1 DIF: Bloom's: Remember
    REF: 2.6 Brain: Structures and Functions, Textbook | Animation - Parts of the Brain, Online
    OBJ: LO14 Identify and locate the major parts of the brain, and state their functions.
    MSC: TYPE: Easy

75. The part of the brain that directly allows you to contemplate the answer to this question is the:
    a. hindbrain
    b. midbrain
    c. forebrain
    d. cerebellum

    ANS: C PTS: 1 DIF: Bloom's: Understand
    REF: 2.6 Brain: Structures and Functions, Textbook | Animation - Parts of the Brain, Online
    OBJ: LO14 Identify and locate the major parts of the brain, and state their functions.
    MSC: TYPE: Easy

76. Rex is an evil scientist and wants to take away humans' ability to use language, plan, and make decisions. What part of the brain should his newly invented "Death Ray Gun" destroy?
    a. limbic system
    b. reticular formation
    c. thalamus
    d. forebrain

    ANS: D PTS: 1 DIF: Bloom's: Analyze
    REF: 2.6 Brain: Structures and Functions, Textbook
    OBJ: LO14 Identify and locate the major parts of the brain, and state their functions.
    MSC: TYPE: Medium

77. You are listening to a few songs that you really like since they are very relaxing. What part of your brain has a reward or pleasure center that is very active as you listen to the songs?
    a. Broca's area
    b. medulla
    c. cerebellum
    d. midbrain

    ANS: D PTS: 1 DIF: Bloom's: Analyze
    REF: 2.6 Brain: Structures and Functions, Textbook
    OBJ: LO14 Identify and locate the major parts of the brain, and state their functions.
    MSC: TYPE: Medium

78. In what brain area do you find the reticular formation?
    a. midbrain
    b. medulla
    c. occipital lobe
    d. cerebellum

    ANS: A PTS: 1 DIF: Bloom's: Understand
    REF: 2.6 Brain: Structure and Functions,Textbook | Animation - Parts of the Brain, Online
    OBJ: LO14 Identify and locate the major parts of the brain, and state their functions.
    MSC: TYPE: Easy

79. The pons:
    a. controls vital reflexes such as respiration, heart rate, and blood pressure
    b. coordinates voluntary movements
    c. contains Purkinje cells
    d. connects the spinal cord to the brain and makes chemicals important in sleep

    ANS: D PTS: 1 DIF: Bloom's: Remember
    REF: 2.6 Brain: Structures and Functions,Textbook | Video - "Hindbrain Structures," Online
    OBJ: LO14 Identify and locate the major parts of the brain, and state their functions.
    MSC: TYPE: Easy

80. The medulla:
    a. controls vital reflexes such as respiration, heart rate, and blood pressure
    b. initiates voluntary movements
    c. regulates the production of speech
    d. connects the spinal cord to the brain and makes chemicals important in sleep

    ANS: A PTS: 1 DIF: Bloom's: Remember
    REF: 2.6 Brain: Structures and Functions, Textbook | Video - "Hindbrain Structures," Online
    OBJ: LO14 Identify and locate the major parts of the brain, and state their functions.
    MSC: TYPE: Easy

81. The cerebellum is an important part of the hindbrain that:
    a. initiates voluntary movement
    b. influences social-emotional behavior
    c. coordinates voluntary movements
    d. makes humans distinct from all other animals

    ANS: C PTS: 1 DIF: Bloom's: Understand
    REF: 2.6 Brain: Structures and Functions, Textbook | Video - Hindbrain Structures, Online
    OBJ: LO14 Identify and locate the major parts of the brain, and state their functions.
    MSC: TYPE: Easy

82. Which of the following activities would most likely involve the cerebellum?
    a. experiencing emotion
    b. long-term memory
    c. dancing
    d. listening to a foreign language

    ANS: C PTS: 1 DIF: Bloom's: Analyze
    REF: 2.6 Brain: Structures and Functions, Textbook | Video - Hindbrain Structures, Online
    OBJ: LO14 Identify and locate the major parts of the brain, and state their functions.
    MSC: TYPE: Medium

83. The thin layer of cells that cover the surface of the forebrain is called the:
    a. cortex
    b. myelin sheath
    c. cerebellum
    d. thalamus

    ANS: A PTS: 1 DIF: Bloom's: Remember
    REF: 2.6 Brain: Structures and Functions,Textbook | Animation - Parts of the Brain, Online | Video - The Cortex, Online
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Easy

84. The human cortex is wrinkled because:
    a. it is very old compared to more primitive brains
    b. wrinkling increases the surface area
    c. the cell body causes a constriction at the surface
    d. the axons pull down on certain parts of the cortex

    ANS: B PTS: 1 DIF: Bloom's: Analyze
    REF: 2.6 Brain: Structures and Functions, Textbook | Video - The Cortex, Online
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Easy

85. The forebrain can be divided into lobes. Which of the following is not a lobe?
    a. frontal
    b. parietal
    c. lateral
    d. occipital

    ANS: C PTS: 1 DIF: Bloom's: Analyze
    REF: 2.6 Brain: Structures and Functions, Textbook | Animation - Parts of the Brain, Online
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Easy

86. Which of the following descriptions of the lobes of the cortex is incorrect?
    a. frontal—involved with personality and emotion
    b. parietal—involved with motor behaviors
    c. temporal—involved with processing auditory experience
    d. occipital—involved with processing visual information

    ANS: B PTS: 1 DIF: Bloom's: Analyze
    REF: 2.6 Brain: Structures and Functions, Textbook | Animation - Parts of the Brain, Online | Video - The Cortex, Online
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Medium

87. The brain area that <u>most</u> distinguishes us from animals is the:
    a. thyroid
    b. cerebellum
    c. pons
    d. cortex

    ANS: D PTS: 1 DIF: Bloom's: Analyze
    REF: 2.6 Brain: Structures and Functions, Textbook | Video - The Cortex, Online
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Medium

88. The frontal lobe is involved in:
    a. social-emotional behaviors
    b. reflexive actions
    c. sensory experiences
    d. Wernicke's Aphasia

    ANS: A PTS: 1 DIF: Bloom's: Remember
    REF: 2.6 Brain: Structures and Functions, Textbook | Video - The Cortex, Online
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Easy

89. After a serious blow to the head, Hector underwent a dramatic personality change. A well-organized, extroverted person before the accident, he no longer could plan, or adjust to new social situations. Hector would also laugh uncontrollably at inappropriate times. What part of Hector's brain appears to have been damaged?
    a. thalamus
    b. temporal lobe
    c. frontal lobe
    d. hippocampus

    ANS: C PTS: 1 DIF: Bloom's: Analyze
    REF: 2.6 Brain: Structures and Functions, Textbook
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Medium

90. The story of Phineas Gage demonstrates that:
    a. the frontal lobe seems to be involved in emotion and decision making
    b. a person cannot live if the frontal lobe is damaged
    c. a person cannot walk if the frontal lobe is damaged
    d. the frontal lobe seems to be a large mass of tissue that does not have any particular function

    ANS: A PTS: 1 DIF: Bloom's: Analyze
    REF: 2.6 Brain: Structures and Functions, Textbook
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Medium

91. Based upon your textbook, the cognitive functions of the frontal lobe include all but one of the following. Which one is <u>not</u> among the functions found in the frontal lobe?
    a. attention
    b. decision making
    c. organizing
    d. processing tactile information

    ANS: D PTS: 1 DIF: Bloom's: Analyze
    REF: 2.6 Brain, Structures and Functions,Textbook
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Medium

92. The motor cortex is located in the ____ lobe.
    a. somatosensory
    b. frontal
    c. temporal
    d. occipital

    ANS: B PTS: 1 DIF: Bloom's: Remember
    REF: 2.6 Brain: Structures and Functions, Textbook | Animation - Parts of the Brain, Online | Video - The Cortex, Online
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Easy

93. The strip of the cortex in the frontal lobe that is involved in the initiation of all voluntary movements is called:
    a. the somatosensory cortex
    b. the sensory homunculus
    c. Broca's area
    d. the motor cortex

    ANS: D PTS: 1 DIF: Bloom's: Understand
    REF: 2.6 Brain: Structures and Functions, Textbook | Animation - Parts of the Brain, Online | Video - The Cortex, Online
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Easy

94. The motor cortex initiates all voluntary movements and is found in:
    a. the limbic system
    b. the parietal lobe
    c. Broca's area
    d. the frontal lobe

    ANS: D PTS: 1 DIF: Bloom's: Understand
    REF: 2.6 Brain: Structures and Functions, Textbook | Animation - Parts of the Brain, Online | Video - The Cortex, Online
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Easy

95. The somatosensory cortex is located in the:
    a. frontal lobe
    b. parietal lobe
    c. motor cortex
    d. occipital lobe

    ANS: B PTS: 1 DIF: Bloom's: Remember
    REF: 2.6 Brain: Structures and Functions, Textbook | Animation - Parts of the Brain, Online | Video - The Cortex, Online
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Easy

96. If your parietal lobe is damaged, you would have difficulty:
    a. imitating motor movements
    b. coordinating movements on the left side and right side of your body
    c. with visual perception
    d. recognizing through touch the shape of a telephone in a dark room

    ANS: D PTS: 1 DIF: Bloom's: Analyze
    REF: 2.6 Brain: Structures and Functions, Textbook
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Medium

97. Wernicke's area is located in the ____ lobe, whereas Broca's area is located in the ____ lobe.
    a. occipital; temporal
    b. temporal; frontal
    c. parietal; occipital
    d. frontal; parietal

    ANS: B PTS: 1 DIF: Bloom's: Remember
    REF: 2.6 Brain: Structures and Functions, Textbook | Animation - Broca's and Wernicke's Aphasia, Online
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Easy

98. Wernicke's aphasia and Broca's aphasia are evidence that:
    a. language abilities are more inherited than acquired
    b. special areas of the lobes of the cortex control language abilities
    c. if one area is damaged, the other takes over for it
    d. human language is so complex that a number of things can go wrong with it

    ANS: B PTS: 1 DIF: Bloom's: Analyze
    REF: 2.6 Brain: Structures and Functions,Textbook | Animation - "Broca's and Wernicke's Aphasia," Online
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Medium

99. Which of the following is located in the occipital lobe?
    a. primary visual
    b. primary auditory
    c. sensory
    d. motor

    ANS: A PTS: 1 DIF: Bloom's: Remember
    REF: 2.6 Brain: Structures and Functions, Textbook
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Easy

100. A person with visual agnosia would have problems:
    a. transmitting electrical messages from the eyes
    b. recognizing objects or persons they know
    c. seeing fine parts of a visual stimulus
    d. seeing objects on a particular side of his or her body

    ANS: B PTS: 1 DIF: Bloom's: Analyze
    REF: 2.6 Brain: Structures and Functions, Textbook
    OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
    MSC: TYPE: Medium

101. What part of the brain do we share in common with the alligator?
    a. Broca's area
    b. cortex
    c. limbic system
    d. Wernicke's area

    ANS: C PTS: 1 DIF: Bloom's: Analyze
    REF: 2.6 Brain: Structures and Functions, Textbook | Video - Limbic System, Online
    OBJ: LO16 Identify and locate key structures in the limbic system, and state their functions.
    MSC: TYPE: Easy

102. One of the functions of the limbic system is to:
   a. regulate motivational and emotional behaviors
   b. moderate pain signals from the muscles
   c. regulate blood pressure and heart rate
   d. pass information from one hemisphere of the brain to the other

   ANS: A PTS: 1 DIF: Bloom's: Understand
   REF: 2.6 Brain: Structures and Functions, Textbook | Video - Limbic System, Online
   OBJ: LO16 Identify and locate key structures in the limbic system, and state their functions.
   MSC: TYPE: Easy

103. You are watching a really scary movie. The main character is about to be attacked by a monster. You look over to the person sitting next to you and see fear in his face. What part of the limbic system allows you to evaluate his expression?
   a. hypothalamus
   b. hippocampus
   c. thalamus
   d. amygdala

   ANS: D PTS: 1 DIF: Bloom's: Analyze
   REF: 2.6 Brain: Structures and Functions, Textbook | Video - Limbic System, Online
   OBJ: LO16 Identify and locate key structures in the limbic system, and state their functions.
   MSC: TYPE: Medium

104. A patient known as H. M., while undergoing brain surgery, suffered accidental brain damage. After the surgery, while he retained all of his old memories, he could no longer make new ones. H. M. could not retain new information for more than about 30 seconds. What part of his limbic system was damaged?
   a. hypothalamus
   b. thalamus
   c. hippocampus
   d. cortex

   ANS: C PTS: 1 DIF: Bloom's: Analyze
   REF: 2.6 Brain: Structures and Functions, Textbook | Video - Limbic System, Online
   OBJ: LO16 Identify and locate key structures in the limbic system, and state their functions.
   MSC: TYPE: Medium

105. The hippocampus is involved with:
   a. receiving sensory information
   b. putting memories into permanent storage
   c. regulating sexual behavior
   d. controlling the secretion of hormones

   ANS: B PTS: 1 DIF: Bloom's: Understand
   REF: 2.6 Brain: Structures and Functions, Textbook | Video - Limbic System, Online
   OBJ: LO16 Identify and locate key structures in the limbic system, and state their functions.
   MSC: TYPE: Easy

106. What part of the brain could be compared to a switchboard receiving calls from all over the country and then directing the paths of these incoming calls?
   a. thalamus
   b. hypothalamus
   c. occipital lobe
   d. cerebellum

   ANS: A PTS: 1 DIF: Bloom's: Understand
   REF: 2.6 Brain: Structures and Functions, Textbook | Video - Limbic System, Online
   OBJ: LO16 Identify and locate key structures in the limbic system, and state their functions.
   MSC: TYPE: Medium

107. Hormones are secreted from glands located throughout the body. These glands are called the:
a. endocrine system
b. endorphin system
c. limbic system
d. pituitary system

ANS: A PTS: 1 DIF: Bloom's: Understand
REF: 2.7 The Endocrine System, Textbook
OBJ: LO19 Locate and describe the key elements of the endocrine system.
MSC: TYPE: Easy

108. The endocrine system and the nervous system are basically:
a. similar—they are both chemical systems
b. similar—they both send information throughout the body
c. different—the nervous system affects the brain and the endocrine system affects the body
d. different—the nervous system causes positive functioning and the endocrine system causes dysfunctions

ANS: B PTS: 1 DIF: Bloom's: Analyze
REF: 2.7 The Endocrine System, Textbook
OBJ: LO19 Locate and describe the key elements of the endocrine system.
MSC: TYPE: Medium

109. ____ are secreted by the glands that make up the endocrine system.
a. Gonads
b. Hormones
c. Rhodopsins
d. Pancreas

ANS: B PTS: 1 DIF: Bloom's: Remember
REF: 2.7 The Endocrine System, Textbook
OBJ: LO19 Locate and describe the key elements of the endocrine system.
MSC: TYPE: Easy

110. The structure known as the "control center" of the endocrine system is the:
a. thyroid
b. adrenal
c. hypothalamus
d. parathyroid

ANS: C PTS: 1 DIF: Bloom's: Remember
REF: 2.7 The Endocrine System, Textbook
OBJ: LO19 Locate and describe the key elements of the endocrine system.
MSC: TYPE: Easy

111. Which of the following regulates growth through secretion of growth hormone?
a. pancreas
b. gonads
c. thyroid
d. anterior pituitary

ANS: D PTS: 1 DIF: Bloom's: Remember
REF: 2.7 The Endocrine System, Textbook
OBJ: LO20 Discuss some ways that hormones regulate behavior.
MSC: TYPE: Easy

112. Hormones that regulate sexual development and the growth of the sex organs are produced by the:
a. pancreas
b. gonads
c. adrenal glands
d. posterior pituitary

ANS: B PTS: 1 DIF: Bloom's: Understand
REF: 2.7 The Endocrine System, Textbook
OBJ: LO20 Discuss some ways that hormones regulate behavior.
MSC: TYPE: Easy

TRUE/FALSE

1. A family history of Alzheimer's disease does not affect an individual's risk of Alzheimer's.

ANS: F PTS: 1 DIF: Bloom's: Understand
REF: 2.1 Introduction, Textbook OBJ: LO1 Describe Alzheimer's disease.
MSC: TYPE: Medium

2. DNA is made up of chromosomes.

ANS: F PTS: 1 DIF: Bloom's: Remember
REF: 2.2 Genes and Evolution, Textbook | Animation - Genes Overview, Online
OBJ: LO2 Describe the structures and processes involved in genetic transmission.
MSC: TYPE: Easy

3. There are 23 pairs of chromosomes in humans.

ANS: T PTS: 1 DIF: Bloom's: Remember
REF: 2.2 Genes and Evolution, Textbook | Animation - Genes Overview, Online
OBJ: LO2 Describe the structures and processes involved in genetic transmission.
MSC: TYPE: Easy

4. Glial cells are the most numerous brain cells.

ANS: T PTS: 1 DIF: Bloom's: Remember
REF: 2.3 Neuron's: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online OBJ: LO4 Identify the main functions of glial cells.
MSC: TYPE: Easy

5. The dendrite is the input portion of the neuron.

ANS: T PTS: 1 DIF: Bloom's: Remember
REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
OBJ: LO5 Identify the various parts of the neuron and explain how a neuron functions.
MSC: TYPE: Easy

6. The space between neurons is called the synapse.

   ANS: T PTS: 1 DIF: Bloom's: Remember
   REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
   OBJ: LO5 Identify the various parts of the neuron and explain how a neuron functions.
   MSC: TYPE: Easy

7. As the action potential is traveling down the axon, it can increase or decrease in speed.

   ANS: F PTS: 1 DIF: Bloom's: Understand
   REF: 2.3 Neurons: Structure, Function and Communication, Textbook | Animation - Neuron and Transmitters, Online
   OBJ: LO6 Describe the sequence of the action potential and neural impulse.
   MSC: TYPE: Easy

8. The nerve impulse is called an action potential.

   ANS: T PTS: 1 DIF: Bloom's: Remember
   REF: 2.3 Neurons: Structure, Function and Communication, Textbook | Animation - Neuron and Transmitters, Online
   OBJ: LO6 Describe the sequence of the action potential and neural impulse.
   MSC: TYPE: Easy

9. The action potential occurs when negative sodium ions rush inside the axon.

   ANS: F PTS: 1 DIF: Bloom's: Understand
   REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
   OBJ: LO6 Describe the sequence of the action potential and neural impulse.
   MSC: TYPE: Easy

10. Inhibitory neurotransmitters close the chemical locks in the heart muscle.

    ANS: T PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO7 Describe neurotransmitters and explain how neurons communicate at chemical synapses.
    MSC: TYPE: Easy

11. The relationship between a neurotransmitter and receptor is like a key and lock.

    ANS: T PTS: 1 DIF: Bloom's: Understand
    REF: 2.3 Neurons: Structure, Function, and Communication, Textbook | Animation - Neuron and Transmitters, Online
    OBJ: LO7 Describe neurotransmitters and explain how neurons communicate at chemical synapses.
    MSC: TYPE: Easy

12. The autonomic nervous system is part of the central nervous system.

ANS: F PTS: 1 DIF: Bloom's: Understand
REF: 2.4 Nervous System, Textbook | Animation - Nervous Systems, Online | Animation - Autonomic Nervous System, Online
OBJ: LO11 Differentiate the functions of the major divisions and subdivisions of the nervous system.
MSC: TYPE: Easy

13. The sympathetic nervous system returns the body to a calmer state.

ANS: F PTS: 1 DIF: Bloom's: Understand
REF: 2.4 Nervous System, Textbook | Animation - Nervous Systems, Online
OBJ: LO11 Differentiate the functions of the major divisions and subdivisions of the nervous system.
MSC: TYPE: Easy

14. MRI scans require an injection of a radioactive material into the patient's blood.

ANS: F PTS: 1 DIF: Bloom's: Analyze
REF: 2.5 Studying the Living Brain, Textbook
OBJ: LO12 Describe the different technologies used to investigate the brain.
MSC: TYPE: Easy

15. The cerebellum controls vital reflexes.

ANS: F PTS: 1 DIF: Bloom's: Remember
REF: 2.6 Brain: Structures and Functions, Textbook | Video - Hindbrain Structures, Online
OBJ: LO14 Identify and locate the major parts of the brain, and state their functions.
MSC: TYPE: Easy

16. The frontal lobes govern executive functions.

ANS: T PTS: 1 DIF: Bloom's: Remember
REF: 2.6 Brain: Structures and Functions, Textbook | Video - Cerebral Cortex, Online
OBJ: LO14 Identify and locate the major parts of the brain, and state their functions.
MSC: TYPE: Easy

17. In Broca's aphasia, the person has difficulty speaking in a fluent way.

ANS: T PTS: 1 DIF: Bloom's: Understand
REF: 2.6 Brain: Structures and Functions, Textbook | Video - Cerebral Cortex, Online | Animation - Broca's and Wernicke's Aphasia, Online
OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
MSC: TYPE: Easy

18. The primary visual cortex turns visual sensation into a complete, meaningful perception.

ANS: F PTS: 1 DIF: Bloom's: Remember
REF: 2.6 Brain: Structures and Functions, Textbook | Video - Cerebral Cortex, Online
OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
MSC: TYPE: Easy

19. The hippocampus relays sensory information to areas of the cortex.

ANS: F PTS: 1 DIF: Bloom's: Remember
REF: 2.6 Brain: Structures and Functions, Textbook | Video - Limbic System, Online
OBJ: LO16 Identify and locate key structures in the limbic system, and state their functions.
MSC: TYPE: Easy

20. The hypothalamus plays a major role in eating, drinking and other drives.

ANS: T PTS: 1 DIF: Bloom's: Remember
REF: 2.6 Brain: Structures and Functions, Textbook | Video - Limbic System, Online
OBJ: LO16 Identify and locate key structures in the limbic system, and state their functions.
MSC: TYPE: Easy

21. When a child watches violence on TV, there is an increase in the activity of the cerebellum.

ANS: F PTS: 1 DIF: Bloom's: Analyze
REF: 2.6 Brain: Structures and Functions, Textbook | Video - Limbic System, Online
OBJ: LO16 Identify and locate key structures in the limbic system, and state their functions.
MSC: TYPE: Medium

22. Male and female brains look identical in brain scans during problem solving.

ANS: F PTS: 1 DIF: Bloom's: Understand
REF: 2.6 Brain: Structures and Functions, Textbook | Video - Inside the Female Brain, Online
OBJ: LO17 Identify sex differences in the brain. MSC: TYPE: Easy

23. Women have 15-20% more neurons in their brain compared to men.

ANS: T PTS: 1 DIF: Bloom's: Remember
REF: 2.6 Brain: Structures and Functions, Textbook | Video - Limbic System, Online
OBJ: LO17 Identify sex differences in the brain. MSC: TYPE: Easy

24. Women’s brains are more effective at solving rotating figures problems men’s brains.

ANS: F PTS: 1 DIF: Bloom's Analyze
REF: 2.6 Brain: Structures and Functions, Textbook | Video - Limbic System, Online
OBJ: LO17 Identify sex differences in the brain. MSC: TYPE: Easy

25. The left hemisphere is good at recognizing tone of voice.

ANS: F PTS: 1 DIF: Bloom's: Analyze
REF: 2.6 Brain: Structures and Functions, Textbook
OBJ: LO18 Describe lateralization of brain functions. MSC: TYPE: Medium

26. The left hemisphere is good at language functions.

ANS: T PTS: 1 DIF: Bloom's: Analyze
REF: 2.6 Brain: Structures and Functions, Textbook
OBJ: LO18 Describe lateralization of brain functions. MSC: TYPE: Medium

27. The right hemisphere is better at math skills than is the left hemisphere.

ANS: F PTS: 1 DIF: Bloom's: Analyze
REF: 2.6 Brain: Structures and Functions, Textbook
OBJ: LO18 Describe lateralization of brain functions. MSC: TYPE: Medium

28. The left hemisphere processes information by examining each separate piece rather than the whole.

ANS: T PTS: 1 DIF: Bloom's: Analyze
REF: 2.6 Brain: Structures and Functions, Textbook
OBJ: LO18 Describe lateralization of brain functions. MSC: TYPE: Medium

SHORT ANSWER

1. Why should psychologists study the brain?

ANS:
Answers may vary, but should note the relationship of the brain to mental functions and behavior.

PTS: 1 DIF: Bloom's: Analyze REF: 2.1 Introduction, Textbook
OBJ: LO1 Describe Alzheimer's disease. MSC: TYPE: Medium

2. What is the relationship between chromosomes, DNA, and genes?

ANS:
A **chromosome** is a short, rodlike, microscopic structure that contains tightly coiled strands of the chemical DNA.

DNA is made up of four chemicals. The order in which the four different chemicals combine creates a microscopic chemical alphabet. This chemical alphabet is used to write instructions for the development and assembly of the 100 trillion highly specialized cells that make up the brain and body.

A **gene** is a specific segment on the strand of DNA that contains instructions for making proteins.

PTS: 1 DIF: Bloom's: Understand
REF: 2.2 Genes and Evolution, Textbook | Animation - Genes Overview, Online
OBJ: LO2 Describe the structures and processes involved in genetic transmission.
MSC: TYPE: Easy

3. Briefly explain the function of the neuron cell body, dendrites, axon, myelin sheath, and end bulbs. Draw a diagram showing the structures.

ANS:
The **cell body** (or soma) is a relatively large, egg-shaped structure that provides fuel, manufactures chemicals, and maintains the entire neuron in working order.

Dendrites are branchlike extensions that arise from the cell body; they receive signals from other neurons, muscles, or sense organs and pass these signals to the cell body.

The **axon** is a single threadlike structure that extends from, and carries signals away from, the cell body to neighboring neurons, organs, or muscles.

The **myelin sheath** looks like separate tubelike segments composed of fatty material that wraps around and insulates an axon. The myelin sheath prevents interference from electrical signals generated in adjacent axons.

End bulbs or **terminal bulbs** look like tiny bubbles that are located at the extreme ends of the axon's branches. Each end bulb is like a miniature container that stores chemicals called neurotransmitters, which are used to communicate with neighboring cells.

PTS: 1 DIF: Bloom's: Understand
REF: 2.3 Neurons: Structure, Function and Communication, Textbook | Animation - Neuron and Transmitters, Online
OBJ: LO5 Identify the various parts of the neuron and explain how a neuron functions.
MSC: TYPE: Medium

4. What roles do afferent neurons, interneurons, and efferent neurons play in a reflex?

ANS:
Afferent, or **sensory, neurons** carry information from the sensors to the spinal cord.

An **interneuron** is a relatively short neuron whose primary task is making connections between other neurons.

Efferent, or **motor, neurons** carry information away from the spinal cord to produce responses in various muscles and organs throughout the body.

PTS: 1 DIF: Bloom's: Understand
REF: 2.3 Neurons: Structure, Function, & Communication, Textbook
OBJ: LO8 Describe the sequence of the reflex response. MSC: TYPE: Easy

5. Differentiate between nerves and neurons.

ANS:
Nerves are stringlike bundles of axons and dendrites that come from the spinal cord and are held together by connective tissue. Nerves carry information from the senses, skin, muscles, and the body's organs to and from the spinal cord.
A **neuron** is a brain cell with two specialized extensions. One extension is for receiving electrical signals, and a second, longer extension is for transmitting electrical signals.

PTS: 1 DIF: Bloom's: Remember
REF: 2.4 Nervous System, Textbook OBJ: LO9 Differentiate between nerves and neurons.
MSC: TYPE: Easy

6. Describe the major divisions of the nervous system and their subdivisions.

ANS:
The **central nervous system** is made up of the brain and spinal cord. From the bottom of the brain emerges the spinal cord, which is made up of neurons and bundles of axons and dendrites that carry information back and forth between the brain and the body.

The **peripheral nervous system** includes all the nerves that extend from the spinal cord and carry messages to and from various muscles, glands, and sense organs located throughout the body.

Subdivisions of the Peripheral Nervous System
The **somatic nervous system** consists of a network of nerves that connect either to sensory receptors or to muscles that you can move voluntarily, such as muscles in your limbs, back, neck, and chest.

The **autonomic nervous system** regulates heart rate, breathing, blood pressure, digestion, hormone secretion, and other functions. The autonomic nervous system usually functions without conscious effort, which means that only a few of its responses, such as breathing, can also be controlled voluntarily.

Subdivisions of the Autonomic Nervous System
The **sympathetic division,** which is triggered by threatening or challenging physical or psychological stimuli, increases physiological arousal and prepares the body for action.

The **parasympathetic division** returns the body to a calmer, relaxed state and is involved in digestion.

PTS: 1 DIF: Bloom's: Remember
REF: 2.4 Nervous System, Textbook | Animation - Nervous Systems, Online
OBJ: LO11 Differentiate the functions of the major divisions and subdivisions of the nervous system.
MSC: TYPE: Easy

7. Describe the role that MRI, fMRI, and PET scans have played in helping us to understand the human brain.

ANS:
MRI, or **magnetic resonance imaging,** involves passing nonharmful radio frequencies through the brain. A computer measures how these signals interact with brain cells and transforms this interaction into an incredibly detailed image of the brain (or body). MRIs are used to study the structure of the brain.

A newer and different version of the MRI is called the fMRI. The "f" in **fMRI** stands for ***functional.*** The fMRI measures the **changes in** activity of specific neurons that are functioning during cognitive tasks, such as thinking, listening, or reading. *fMRI* scans can map activities of neurons that are involved in various cognitive *functions.* In comparison, *MRI* scans show the location of *structures* inside the brain as well as identify sites of brain damage.

A **PET scan,** or positron emission tomography, involves injecting a slightly radioactive solution into the blood and then measuring the amount of radiation absorbed by neurons. Very active neurons absorb more radioactive solution than less active ones. Different levels of absorption are represented by colors: red and yellow indicate maximum activity of neurons, while blue and green indicate minimal activity.

PTS: 1 DIF: Bloom's: Understand
REF: 2.5 Studying the Living Brain, Textbook
OBJ: LO12 Describe the different technologies used to investigate the brain.
MSC: TYPE: Easy

8. What does the case of Phineas Gage teach us about the brain?

   ANS:
   Answer may vary, but should note the importance of the frontal lobe in emotional regulation and decision making.

   PTS: 1 DIF: Bloom's: Analyze
   REF: 2.6 Brain: Structures and Functions, Textbook
   OBJ: LO15 Identify and locate the four lobes in the cerebral cortex, and state their key functions.
   MSC: TYPE: Medium

9. Illustrate the different functions of the hemispheres.

   ANS:
   Left Hemisphere
   Verbal The left hemisphere is very good at all language-related abilities: speaking, understanding language, carrying on a conversation, reading, writing, and spelling.
   Mathematical The left hemisphere is very good at mathematical skills: adding, subtracting, multiplying, dividing, and so on. Generally, the right hemisphere can perform simple addition and subtraction but not more complex mathematics.
   Analytic The left hemisphere appears to process information by analyzing each separate piece that makes up a whole. For example, the left hemisphere would recognize a face by analyzing piece by piece its many separate parts: nose, eyes, lips, cheeks, and so on.

   Right Hemisphere
   Nonverbal Although usually mute, the right hemisphere has a childlike ability to read, write, spell, and understand speech. For example, the right hemisphere can understand simple sentences and read simple words.
   Spatial The right hemisphere is very good at solving spatial problems, such as arranging blocks to match a geometric design. Because the hemispheres control opposite sides of the body, the left hand (right hemisphere) is best at completing spatial tasks.
   Holistic The right hemisphere appears to process information by combining parts into a meaningful whole. For example, the right hemisphere is better at recognizing and identifying whole faces.

   PTS: 1 DIF: Bloom's: Remember
   REF: 2.5 Brain: Structures and Functions, Textbook
   OBJ: LO18 Describe lateralization of brain functions. MSC: TYPE: Easy