Chapter 3 NON-Multiple Choice

COMPLETION

1. The _____ is the junction between two neurons.

   ANS: synapse

   PTS: 1 REF: 3.1 Communication in the Nervous System

2. The branchlike extensions of neurons that receive messages from other neurons are called _____.

   ANS: dendrites

   PTS: 1 REF: 3.1 Communication in the Nervous System

3. The cells that provide support and nourishment for the cells that communicate in the nervous system are called _____.

   ANS: glia

   PTS: 1 REF: 3.1 Communication in the Nervous System

4. In the disease multiple sclerosis, the _____ deteriorates, which causes disruption in the transmission of the neural impulse.

   ANS: myelin sheath

   PTS: 1 REF: 3.1 Communication in the Nervous System

5. An inhibitory postsynaptic potential _____ the likelihood that the postsynaptic neuron will fire action potentials.

   ANS: decreases

   PTS: 1 REF: 3.1 Communication in the Nervous System

6. A neuron in its nonfiring state is said to be at its _____ .

   ANS: resting potential

   PTS: 1 REF: 3.1 Communication in the Nervous System

7. A marathon runner may well experience a phenomenon known as “runner’s high” after a long run due to the release of _____ in the brain.

   ANS: endorphins

   PTS: 1 REF: 3.1 Communication in the Nervous System

8. The nervous system that is made up of the somatic and autonomic nervous systems is the _____ nervous system.

   ANS: peripheral

   PTS: 1 REF: 3.2 Organization of the Nervous System

9. The _____ division of the autonomic nervous system is responsible for the fight or flight response.

   ANS: sympathetic

   PTS: 1 REF: 3.2 Organization of the Nervous System

10. Internal functions such as heartbeat, breathing, and stomach contractions are controlled by the _____ nervous system.

    ANS: autonomic

    PTS: 1 REF: 3.2 Organization of the Nervous System

11. The _____ nervous system contains the brain and spinal cord, while the sensory and motor neurons that transmit messages to the muscles make up the _____ nervous system.

    ANS: central; peripheral

    PTS: 1 REF: 3.2 Organization of the Nervous System

12. ~~A car accident victim died instantly because the bullet entered t~~The _____~~,~~is the portion of the hindbrain that regulates breathing.

    ANS: medulla

    PTS: 1 REF: 3.3 The Brain and Behavior

13. The _____ serves as a bridge between the brainstem and the cerebellum.

    ANS: pons

    PTS: 1 REF: 3.3 The Brain and Behavior

14. The _____ serves as a relay station for sensory information.

    ANS: thalamus

    PTS: 1 REF: 3.3 The Brain and Behavior

15. The primary processing for auditory sensations is in the _____ lobes of the cerebrum.

    ANS: temporal

PTS: 1 REF: 3.3 The Brain and Behavior

16. The reasoning center of the brain thought to contain some sort of executive control system that plays a role in decision-making is the _____.

ANS: prefrontal cortex

PTS: 1 REF: 3.3 The Brain and Behavior

17. Patients with damage to Wernicke's area have sustained damage to the _____ lobe and will have trouble _____.

ANS: temporal; understanding speech

PTS: 1 REF: 3.4 Right Brain/Left Brain: Cerebral Specialization

18. In most individuals, the _____ hemisphere is better at processing visual-spatial information.

ANS: right

PTS: 1 REF: 3.4 Right Brain/Left Brain: Cerebral Specialization

19. _____ are the basic building blocks of heredity and are carried on 23 pairs of _____.

ANS: Genes; chromosomes

PTS: 1 REF: 3.6 Heredity and Behavior: Is It All in the Genes?

20. In evolutionary theory, _____ refers to the reproductive success (number of descendants) of an individual organism relative to the average reproductive success in the population.

ANS: fitness

PTS: 1 REF: 3.7 The Evolutionary Bases of Behavior

~~**TRUE/FALSE**~~

~~1. Neurons are the only cells in the nervous system that are capable of transmission and integration of information.~~

~~ANS: F PTS: 1 REF: Communication in the Nervous System OBJ: 3.1~~

~~2. The nucleus of a neuron is found in the axon.~~

~~ANS: F PTS: 1 REF: Communication in the Nervous System OBJ: 3.1~~

3. A neural impulse is initiated when a neuron's charge momentarily changes from positive to negative.

ANS: F PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2

4. A chemical that transfers information from one neuron to another is referred to as a neurotransmitter.

ANS: T PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2

5. An action potential travels along the axon.

ANS: T PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2

6. Synaptic transmission takes place when the electrical neural impulse (action potential) jumps across the fluid-filled synaptic cleft between neurons much like the spark from a sparkplug does in an automobile.

ANS: F PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2

7. Neurotransmitter binding to receptor sites on the postsynaptic membrane is very specialized; thus some neurotransmitters that are released will not cause any effect in the postsynaptic cell.

ANS: T PTS: 1 REF: Communication in the Nervous System
OBJ: 3.2

8. GABA only produces inhibitory postsynaptic potentials and appears to be responsible for much of the inhibition in the central nervous system.

ANS: T PTS: 1 REF: Communication in the Nervous System
OBJ: 3.3

9. GABA, dopamine, and serotonin are monoamines.

ANS: F PTS: 1 REF: Communication in the Nervous System
OBJ: 3.3

10. The brain structure responsible for relaying sensory information to various locations in the brain is the thalamus.

ANS: T PTS: 1 REF: The Brain and Behavior
OBJ: 3.6

11. The limbic system is a network of structures that play a role in learning, memory, and the regulation of emotion.

ANS: T PTS: 1 REF: The Brain and Behavior
OBJ: 3.6

12. The largest and most complex part of the human brain is the cerebellum.

ANS: F PTS: 1 REF: The Brain and Behavior
OBJ: 3.6

13. Recent studies have shown that the brain forms all the neurons it will ever have by the end of infancy, and that no new neurons form in adult brains.

ANS: F PTS: 1 REF: The Brain and Behavior
OBJ: 3.7

14. A split-brain person has a severed cerebellum.

ANS: F PTS: 1 REF: Right Brain/Left Brain: Cerebral Specialization
OBJ: 3.8

15. Dr. Small is interested in comparing the hereditary nature of shyness in people; the best method for him to use to determine whether shyness is inherited is through twin studies.

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

SHORT ANSWER

1. What are glial cells? What functions do they serve?

ANS:
Glial cells are found throughout the nervous system and account for ~~over~~about 50% of the brain's volume. They provide various types of support for the neuron including providing nourishment to neurons, helping to remove waste products and providing insulation around the axons. Research also suggests that glia play a role in ~~memory~~schizophrenia, Alzheimer's disease, some depressive disorders, and the experience of chronic pain. More recently it has been suggested that in addition to their support roles, some type of glia may also detect neural impulses and send and receive chemical signals.

PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Understand

2. Neuronal communication involves two mechanisms: a chemical one and an electrical one. Explain how they combine to produce electro-chemical neuronal communication.

ANS:
The neural impulse, or the action potential, is a brief exchange in a neuron's electrical charge that moves along an axon. The action potential, an electrical mechanism, triggers the release of chemicals called neurotransmitters that diffuse across a synapse to communicate with other neurons. The neurotransmitters bind with receptors in the postsynaptic cell membrane, causing graded electrical potentials called postsynaptic potentials. Patterns of excitatory and inhibitory postsynaptic potentials combine to produce (or not produce) an action potential in the second cell.

PTS: 1 REF: Communication in the Nervous System
DIF: Apply

3. You are about to give your first speech in front of your speech class and are nervous about getting up in front of everyone. As you anticipate getting up in front of the class, you begin to feel butterflies in your stomach and a pounding in your chest. Using this example, explain how the sympathetic and parasympathetic divisions of the autonomic nervous system work together to help your body react to this situation.

   ANS:
   As you prepare to go to class, the autonomic nervous system made up of nerves that connect to the heart, blood vessels, smooth muscles, and glands begins to control automatic, involuntary visceral functions like heart rate and digestion. The autonomic nervous system mediates most of the physiological arousal associated with emotions, specifically the fight-or-flight response. The two divisions of the system—the sympathetic and parasympathetic—work in opposition to each other. As you begin to walk to the front of the classroom to give your speech, your palms will sweat, your heart will begin to beat faster, your breathing will speed up and you will get goosebumps~~your stomach will do flip-flops, and your mouth will go dry~~. This is the result of the activation of the sympathetic system, which mobilizes bodily resources: it will slow digestion, send signals to the adrenal gland, and trigger the release of hormones that will ready the body for exertion. Once you have completed your speech, the parasympathetic division will allow the body to slow down by activating processes that allow the body to save and store energy; for example, slowing the heart rate, reducing blood pressure, and promoting digestion.

   PTS: 1 REF: 3.2 Organization of the Nervous System
   DIF: Apply

4. Pick two different types of brain-imaging techniques and describe what aspects of brain functioning they are used to explore. What are the advantages and disadvantages of each method?

   ANS:
   There are numerous possible imaging procedures that could be discussed. These include computerized tomography (CT scan), positive emission tomography (PET), magnetic resonance imaging (MRI), and functional magnetic resonance imaging (fMRI).

   PTS: 1 REF: 3.3 The Brain and Behavior DIF: Understand

5. Imagine meeting four separate individuals who have each sustained injuries to different sections of their brain. Person A has irreversible damage to her frontal lobe. Person B has irreversible damage to his parietal lobe. Person C has irreversible damage to her temporal lobe, and person D has irreversible damage to his occipital lobe. Briefly, what would be the effects of each of these injuries?

   ANS:
   Person A: Frontal lobe is the site of the primary motor cortex, therefore, damage would likely lead to problems with the control of movement of muscles. The frontal lobe is also the site of the prefrontal cortex, which is believed to contribute to higher-order functions such as memory and decision-making.

   Person B: Parietal lobe is the site of the primary somatosensory cortex; therefore, damage would likely lead to problems with touch and physical sensation processing.

   Person C: Temporal lobe is the location of the primary auditory cortex, therefore, damage would likely lead to problems with hearing and processing of speech and language.

Person D: Occipital lobe is the location of the primary visual cortex; therefore, damage would likely lead to problems with vision and visual processing.

PTS: 1 REF: 3.3 The Brain and Behavior DIF: Apply

6. Summarize the functions of the brain's two hemispheres and explain their relationship.

ANS:
The cerebrum is divided into the right and left hemispheres connected by the corpus callosum. Evidence suggests that the left cerebral hemisphere usually processes language and verbal information and that the right hemisphere specializes in visual-spatial functions and perception of emotion.

PTS: 1 REF: 3.4 Right Brain/Left Brain: Cerebral Specialization
DIF: Understand

7. Choose a specific hormone or class of hormones and discuss the impact it has on behavior and how it does so.

ANS:
Answers might include discussion of adrenal hormones or oxytocin.

PTS: 1 REF: 3.5 The Endocrine System: Another Way to Communicate
DIF: Understand

8. Describe the three methods used by researchers to investigate the effects of genetics and experience on behavior.

ANS:
Psychologists use family studies, adoption studies, and twin studies to investigate the combined influence of genetics and environment on behavior.

Family studies assess hereditary influence by examining blood relatives to see how much they resemble one another on a specific trait.

Twin studies assess hereditary influence by comparing the resemblance of identical and fraternal twins with respect to a given trait.

Adoption studies assess hereditary influence by examining the resemblance between adopted children and both their biological and adoptive parents.

PTS: 1 REF: 3.6 Heredity and Behavior: Is It All in the Genes?
DIF: Understand

9. Briefly explain the three textbook themes highlighted in this chapter.

ANS:
Three of the seven themes are highlighted in this chapter.
Theme # 1: Psychology is empirical.
Theme # 4: Behavior is determined by multiple causes.
Theme # 6: Hereditary and environmental influences jointly influence behavior.

PTS: 1 REF: 3.8 Reflecting on the Chapter's Themes

DIF: Apply

ESSAY

1. Choose a specific neurotransmitter or class of neurotransmitters and discuss its impact on behavior.

   ANS:
   Acetylcholine: the only neurotransmitter between motor neurons and voluntary muscles, so it mediates all voluntary movement. Also contributes to attention, arousal, and memory. Alzheimer's disease is associated with an insufficient supply of this neurotransmitter.

   Monoamines (dopamine, serotonin, and norepinephrine): dopamine—mediates voluntary movement. A deficiency is associated with Parkinson's disease; overactivity is associated with schizophrenia. Serotonin—regulates sleep, ~~ing and waking~~arousal, and aggressive behavior; deficiency is associated with depression. Norepinephrine—~~also regulates arousal. A deficiency is~~ deficiency associated with depression.

   GABA: Has inhibitory effects only. Too little GABA is associated with anxiety.

   PTS: 1 REF: 3.1 Communication in the Nervous System
   DIF: Understand

2. Compare and contrast the nervous system and the endocrine system.

   ANS:
   Both are internal communication systems; both use chemical messengers. The nervous system utilizes neurotransmitters, which travel short distances at high speeds; the endocrine system uses hormones, which are slow-acting and travel long distances.

   PTS: 1
   REF: 3.1 Communication in the Nervous System | 3.5 The Endocrine System: Another Way to Communicate DIF: Apply

3. Compare and contrast lesioning and electrical stimulation of the brain.

   ANS:
   Both are methods of studying brain function; both involve the introduction of electric current into a specific brain structure via an implanted electrode. Lesioning uses a fairly strong electric current to destroy brain tissue, thus eliminating the relevant behavior from the subject's repertoire. Since lesioning produces permanent brain damage, it is employed with animal subjects only. Electrical stimulation of the brain introduces a weak current to artificially stimulate a brain structure and produce a behavioral response. It does not permanently damage the brain and so, under certain medical circumstances, may be used with humans; however, the technique is more frequently applied to animals.

   PTS: 1 REF: 3.3 The Brain and Behavior DIF: Apply

4. Assume that trait X is primarily an inherited characteristic. Imagine that trait X is investigated using family studies, twin studies, and adoption studies. Briefly describe each of these three methods and indicate what information each would be expected to yield regarding trait X.

ANS:
Family studies: there should be more similarity on trait X among relatives who share a greater percentage of genes. For example, there should be more similarity on trait X between identical twins than among siblings, who in turn should exhibit more similarity than cousins.

Twin studies: identical twins should exhibit more similarity on trait X than fraternal twins.

Adoption studies: children adopted in early infancy should more closely resemble their biological parents on trait X than they do their adoptive parents.

PTS: 1 REF: 3.6 Heredity and Behavior: Is It All in the Genes?
DIF: Apply

5. Imagine the following scenario: administrators at the local high school have been impressed by recent media reports of cerebral hemispheric specialization and are considering curricular reform to achieve a better balance between "left-brained" and "right-brained" activities. You have been hired to advise them on this issue. What would your recommendation be, and why?

ANS:
Although there is some evidence that the cerebral hemispheres are specialized to a degree, there is no basis for saying that people have two independent streams of consciousness or that each hemisphere has its own cognitive style. There is little basis for labeling some people as "left-brained" and others as "right-brained," or for relating these differences to distinctive task preferences, personalities, or vocations. All information reaches both hemispheres, since they communicate via the corpus callosum. Thus, cerebral specialization is not a sound basis for educational reform.

PTS: 1
REF: 3.4 Right Brain/Left Brain: Cerebral Laterality | 3.9 Personal Application: Evaluating the Concept of "Two Minds in One" DIF: Think Critically

6. Imagine taking a bite of a pizza. Briefly discuss the role that each part of the brain ~~takes~~plays in this simple act.

ANS:

Medulla	controls my unconscious vital functions like heart and respiration rates.
Pons	helps me to stay awake and aroused as I wait for the pizza delivery person to arrive.
Cerebellum	allows me to walk in a smooth and coordinated way to answer the door and to smoothly guide my hand up toward my face with the pizza.
Reticular formation	works in conjunction with the pons to allow me to remain alert and attentive while waiting for the pizza to arrive.
Thalamus	serves as the sensory relay station for all of my sensory inputs except smell.
Hypothalamus	contributes to my experience and control over my hunger and thirst.
Amygdala	one of the many limbic system structures involved in my experience of emotion.
Hippocampus	plays a role in establishment of and recollection of my memory of this experience.

Parietal lobe	allows me to detect the temperature and texture of the pizza slice I hold in my hand.
Occipital lobe	allows me to see the pizza.
Temporal lobe	allows me to hear the door bell when the delivery person arrives at my home and the crunch of the pizza crust as I bite into it.
Frontal lobe	allows me to control the movement of muscles in my arms, hands, and fingers so that I can pick up the piece of pizza.
Prefrontal cortex	as the executive control system, it monitors, organizes, and directs my thought process about the best way to bite in to the pizza.

PTS: 1 REF: Chapter 3 DIF: Think Critically

MULTIPLE CHOICE

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

   ANS: D PTS: 1 REF: 3.1 Communication in the Nervous System
   DIF: Understand
   NOTES: Correct = 94%

2. Which of the following is NOT one of the main functions of neurons?
   a. receiving information
   b. generating information
   c. transmitting information
   d. integrating information

   ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
   DIF: Apply
   NOTES: Correct = 82%

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

   ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
   DIF: Apply

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

   ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
   DIF: Think Critically

~~5. The correct order that information passes through in a neuron is~~
   ~~a. dendrite, soma, axon.~~
   ~~b. axon, soma, dendrite.~~
   ~~c. dendrite, axon, soma.~~
   ~~d. axon, dendrite, soma.~~

   ~~ANS: A PTS: 1 REF: 3.1 Communication in the Nervous System~~
   ~~DIF: Understand~~

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

   ANS: D PTS: 1 REF: 3.1 Communication in the Nervous System
   TOP: WWW DIF: Understand

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

   ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
   DIF: Understand

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

   ANS: D PTS: 1 REF: 3.1 Communication in the Nervous System
   DIF: Understand

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

   ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
   DIF: Understand

9. Which of the following statements about myelin is NOT true?
   a. The myelin sheath affects the speed of neural transmission.
   b. The myelin sheath is a factor in multiple sclerosis.
   c. Myelin sometimes prevents axons from sprouting in new directions.
   d. All axons have a myelin sheath.

   ANS: D PTS: 1 REF: 3.1 Communication in the Nervous System DIF: Understand

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

ANS: D PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Understand

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

    ANS: A PTS: 1 REF: 3.1 Communication in the Nervous System
    DIF: Understand

12. The cells that provide nourishment and insulation for neurons are called
    a. glia.
    b. somata.
    c. neuromodulators.
    d. dendrites.

    ANS: A PTS: 1
    REF: 3.1 Communication in the Nervous System DIF: Understand
    NOTES: Correct = 80%

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

    ANS: C PTS: 1 REF: 3.1 Communication in the Nervous System
    DIF: Understand

14. Based on recent research, we would expect that people with schizophrenia, Alzheimer's disease, or chronic pain may have dysfunction in their
    a. occipital lobes.
    b. glial cells.
    c. endorphin systems.
    d. somatic nuclei.

    ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
    DIF: Understand

15. The difference in the flow rates of sodium and potassium ions across the cell membrane when a neuron is at rest leads to
    a. a slightly higher concentration of negatively charged ions inside the cell.
    b. a negatively charged action potential.
    c. a slightly lower concentration of negatively charged ions inside the cell.
    d. both a negatively charged action potential and a slightly lower concentration of negatively charged ions inside the cell.

    ANS: A PTS: 1 REF: 3.1 Communication in the Nervous System
    DIF: Think Critically

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

    ANS: C PTS: 1 REF: 3.1 Communication in the Nervous System
    DIF: Understand

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

    ANS: C PTS: 1 REF: 3.1 Communication in the Nervous System
    DIF: Understand

18. Bradley is deeply relaxed and his muscles are not moving at all. This suggests that, for Bradley's motor neurons,
    a. sodium ions are concentrated inside the neurons and ~~potassium~~chloride ions are concentrated outside the neurons.
    b. sodium ions and potassium ions are both concentrated inside the neurons.
    c. sodium ions and potassium ions are both concentrated outside the neurons.
    d. sodium ions are concentrated outside the neurons and ~~potassium~~chloride ions are concentrated inside the neurons.

    ANS: D PTS: 1 REF: 3.1 Communication in the Nervous System
    DIF: Apply

19. Neurotransmitters are secreted from the
    a. myelin sheath.
    b. terminal buttons.
    c. neuromodulators.
    d. dendrites.

    ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
    TOP: WWW DIF: Understand
    NOTES: Correct = 60%

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

    ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
    DIF: Understand

21. Leonard's mother became dehydrated during a recent illness, and the levels of sodium in her body were significantly reduced. If enough sodium was lost, you might expect that
    a. her nervous system would become highly activated and action potentials would be

generated continuously.
b. fewer action potentials would occur in her nervous system.
c. more neurotransmitters would be produced in her terminal buttons.
d. glial cells would start to degenerate and die.

ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Think Critically

22. The minimum length of time between action potentials is determined by
a. transduction capacity.
b. transduction incapacity.
c. the absolute refractory period.
d. the relative threshold period.

ANS: C PTS: 1
REF: 3.1 Communication in the Nervous System DIF: Understand
NOTES: Correct = 81%

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

ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Apply

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

ANS: A PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Think Critically

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

ANS: C PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Think Critically

26. Peggy smells a very strong odor; Harry smells an odor that is barely detectable. Based on what is known about neural transmission, you could predict that the action potentials will
a. travel more quickly in Peggy's system because the stimulus is more intense.
b. be weaker in Harry's system because the stimulus is less intense.

c. travel a shorter distance in Peggy's system because the stimulus is more intense.
d. be the same in both individuals due to the all-or-none principle.

ANS: D PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Think Critically

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

~~ANS: A PTS: 1 REF: 3.1 Communication in the Nervous System~~
~~TOP: WWW DIF: Understand~~

27. ~~When a neuron is firing its~~During an action potential, the neuron's electrical charge is
a. negative and travels along the axon.
b. negative and travels along the dendrite.
c. positive and travels along the axon.
d. positive and travels along the dendrite.

ANS: C PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Understand

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

ANS: A PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Understand

29. An impulse moves from one neuron to another through the action of
a. neurotransmitters.
b. hormones.
c. action potentials.
d. neuromodulators.

ANS: A PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Understand

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

ANS: C PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Understand

31. The microscopic gap between the terminal buttons of one neuron and the cell membrane of another neuron is the
a. neurotransmitter cleft.
b. synaptic cleft.

c. presynaptic space.
d. postsynaptic space.

ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Understand

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

ANS: C PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Understand

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

ANS: C PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Understand

34. Reabsorption of neurotransmitters into the presynaptic neuron is referred to as
a. cyclomyosis.
b. regrading.
c. uploading.
d. reuptake.

ANS: D PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Understand

35. The elimination of old, less active synapses is known as
a. synaptic reuptake.
b. synaptic pruning.
c. neurogenesis.
d. synaptic sculpting.

ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Understand

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

ANS: C PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Understand

37. If inhibitory postsynaptic potentials did not exist,
a. it would be “easier” for a neuron to fire its action potential.
b. it would be “harder” for a neuron to fire its action potential.
c. there would not be any effect on the ease at which a neuron fires its action potential.

d. it would be impossible for neural impulses to travel across the synapse.

ANS: A PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Think Critically

38. Jeremy is sitting quietly when the muscles in his left leg begin to "twitch." This activation of movement in his voluntary muscles is most likely due to the release of the neurotransmitter
a. serotonin.
b. dopamine.
c. acetylcholine.
d. norepinephrine.

ANS: C PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Think Critically

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

ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Think Critically

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

ANS: C PTS: 1
REF: 3.1 Communication in the Nervous System DIF: Think Critically
NOTES: Correct = 80%

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

ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Apply

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

c. serotonin
d. endorphins

ANS: A PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Apply

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

ANS: A PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Apply

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

ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Understand

45. Some theorists believe that the rewarding effects of most abused drugs depend on
a. decreased activity in specific dopamine pathways.
b. decreased activity in specific glutamate pathways.
c. increased activity in specific glutamate pathways.
d. increased activity in specific dopamine pathways.

ANS: D PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Understand

46. The neurotransmitter(s) released by motor neurons that results in movement of the voluntary muscles is(are)
a. endorphins.
b. monoamines.
c. acetylcholine.
d. dopamine.

ANS: C PTS: 1 REF: 3.1 Communication in the Nervous System
DIF: Understand

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

ANS: A PTS: 1 REF: Commincation in the Nervous System
TOP: Apply

48. Which of the following neurotransmitters is NOT a monoamine?
    a. norepinephrine
    b. serotonin
    c. dopamine
    d. acetylcholine

    ANS: D PTS: 1 REF: 3.1 Communication in the Nervous System
    DIF: Understand

49. Monoamines have been associated with all of the following EXCEPT
    a. aggressive behavior.
    b. pain reduction.
    c. schizophrenia.
    d. depression.

    ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
    DIF: Think Critically

50. The neurotransmitter believed to be associated with schizophrenia is
    a. dopamine.
    b. acetylcholine.
    c. endorphin.
    d. serotonin.

    ANS: A PTS: 1 REF: 3.1 Communication in the Nervous System
    TOP: WWW DIF: Understand

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

    ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
    DIF: Think Critically

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

    ANS: D PTS: 1 REF: 3.1 Communication in the Nervous System
    DIF: Apply

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

    ANS: A PTS: 1
    REF: 3.1 Communication in the Nervous System DIF: Understand

NOTES: Correct = 77%

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

    ANS: B PTS: 1 REF: 3.1 Communication in the Nervous System
    DIF: Understand

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

    ANS: B PTS: 1 REF: 3.2 Organization of the Nervous System
    DIF: Understand

56. Nerves outside the skull and spine comprise the
    a. peripheral nervous system.
    b. vascular nervous system.
    c. vagus nervous system.
    d. skeletal nervous system.

    ANS: A PTS: 1
    REF: 3.2 Organization of the Nervous System DIF: Understand
    NOTES: Correct = 76%

57. The somatic nervous system and the autonomic nervous system comprise the
    a. central nervous system.
    b. peripheral nervous system.
    c. skeletal nervous system.
    d. afferent nervous system.

    ANS: B PTS: 1 REF: 3.2 Organization of the Nervous System
    DIF: Understand

58. Sensory information is carried from your eyes to your brain by way of
    a. afferent fibers.
    b. autonomic fibers.
    c. efferent fibers.
    d. motor fibers.

    ANS: A PTS: 1 REF: 3.2 Organization of the Nervous System
    DIF: Apply

59. ____ nerves transmit ~~receive~~ information to the central nervous system, while ____ nerves carry out instructions from the central nervous system.
    a. Afferent; efferent
    b. Motor; sensory
    c. Somatic; autonomic
    d. Autonomic; skeletal

ANS: A PTS: 1
REF: 3.2 Organization of the Nervous System DIF: Apply
NOTES: Correct = 50%

60. When you are walking, the brain sends messages to the skeletal muscles in the legs by way of
a. efferent fibers.
b. sensory fibers.
c. afferent fibers.
d. central fibers.

ANS: A PTS: 1
REF: 3.2 Organization of the Nervous System DIF: Apply
NOTES: Correct = 32%

61. The movement of voluntary skeletal muscles involved in doing calisthenics is under the control of the
a. somatic nervous system.
b. parasympathetic nervous system.
c. sympathetic nervous system.
d. autonomic nervous system.

ANS: A PTS: 1
REF: 3.2 Organization of the Nervous System DIF: Apply
NOTES: Correct = 63%

62. The part of the nervous system that controls digestion and blood flow is the
a. somatic nervous system.
b. motor nervous system.
c. sensory nervous system.
d. autonomic nervous system.

ANS: D PTS: 1 REF: 3.2 Organization of the Nervous System
DIF: Understand

63. The ____ nervous system mobilizes the body when one needs to exert tremendous energy (such as flee from an attacker).
a. somatic
b. central
c. sympathetic
d. parasympathetic

ANS: C PTS: 1 REF: 3.2 Organization of the Nervous System
DIF: Understand

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

ANS: C PTS: 1 REF: 3.2 Organization of the Nervous System
DIF: Apply

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

    ANS: C PTS: 1 REF: 3.2 Organization of the Nervous System
    DIF: Apply

66. The ____ is most likely to be in control of bodily processes during periods of rest and recovery for the body.
    a. somatic nervous system
    b. sympathetic nervous system
    c. parasympathetic nervous system
    d. hypothalamus

    ANS: C PTS: 1
    REF: 3.2 Organization of the Nervous System DIF: Understand
    NOTES: Correct = 67%

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

    ANS: D PTS: 1 REF: 3.2 Organization of the Nervous System
    DIF: Apply

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

    ANS: A PTS: 1 REF: 3.2 Organization of the Nervous System
    DIF: Apply

~~68. Efferent nerve fibers transmit messages ____ the brain and spinal cord.~~
    ~~a. within or between~~
    ~~b. away from~~
    ~~c. toward~~
    ~~d. away from and toward~~

    ~~ANS: B PTS: 1 REF: 3.2 Organization of the Nervous System~~
    ~~DIF: Apply~~

69. The heart, glands, and smooth muscles are controlled by the
    a. peripheral nervous system.
    b. somatic nervous system.

c. efferent nervous system.
d. autonomic nervous system.

ANS: D PTS: 1 REF: 3.2 Organization of the Nervous System
DIF: Understand

70. The "fight or flight" response is a direct result of activation of the
a. afferent nervous system.
b. efferent nervous system.
c. sympathetic nervous system.
d. parasympathetic nervous system.

ANS: C PTS: 1 REF: 3.2 Organization of the Nervous System
TOP: WWW DIF: Understand

71. While the ____ nervous system is associated with conserving bodily resources, the ____ nervous system mobilizes the body's resources for emergencies.
a. parasympathetic; sympathetic
b. sympathetic; parasympathetic
c. peripheral; central
d. central; peripheral

ANS: A PTS: 1 REF: 3.2 Organization of the Nervous System
DIF: Understand

72. The central nervous system consists of
a. the body's sensory and motor neurons.
b. the brain and the spinal cord.
c. the somatic and autonomic nervous systems.
d. the sympathetic and parasympathetic nervous systems.

ANS: B PTS: 1 REF: 3.2 Organization of the Nervous System
DIF: Understand

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

ANS: B PTS: 1
REF: 3.2 Organization of the Nervous System DIF: Understand
NOTES: Correct = 64%

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

ANS: B PTS: 1
REF: 3.3 The Brain and Behavior TOP: WWW DIF: Understand
NOTES: Correct = 93%

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

    ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
    DIF: Think Critically

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

    ANS: B PTS: 1
    REF: 3.3 The Brain and Behavior DIF: Think Critically
    NOTES: Correct = 87%

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

    ANS: A PTS: 1 REF: 3.3 The Brain and Behavior
    DIF: Understand

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

    ANS: B PTS: 1 REF: 3.3 The Brain and Behavior
    DIF: Apply

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

    ANS: B PTS: 1 REF: 3.3 The Brain and Behavior
    DIF: Understand

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

b. computerized tomography.
c. stereotaxic instrumentation.
d. EKG.

ANS: B PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand

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

ANS: B PTS: 1
REF: 3.3 The Brain and Behavior DIF: Apply
NOTES: Correct = 37%

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

ANS: B PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Apply

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

ANS: A PTS: 1 REF: 3.3 The Brain and Behavior
TOP: WWW DIF: Understand

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

ANS: B PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand

85. Which of the following structures is NOT part of the hindbrain?
a. cerebellum
b. thalamus
c. medulla
d. pons

ANS: B PTS: 1

REF: 3.3 The Brain and Behavior DIF: Understand
NOTES: Correct = 77%

86. The brain structure that controls unconscious but essential functions such as breathing and circulation is the
a. pons.
b. medulla.
c. cerebellum.
d. corpus callosum.

ANS: B PTS: 1
REF: 3.3 The Brain and Behavior DIF: Understand
NOTES: Correct = 57%

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

ANS: A PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Think Critically

88. In carrying out the "fight or flight" response, the role of supervisor is assigned to the
a. adrenal gland.
b. pituitary gland.
c. hypothalamus.
d. parasympathetic nervous system.

ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Apply

89. The brain structure responsible for the coordination of motor movements and sense of equilibrium is the
a. hypothalamus.
b. cerebrum.
c. pons.
d. cerebellum.

ANS: D PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand

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

ANS: D PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Think Critically

91. The hindbrain structure involved with sleep and arousal is the
    a. hypothalamus.
    b. cerebrum.
    c. thalamus.
    d. pons.

    ANS: D PTS: 1 REF: 3.3 The Brain and Behavior
    DIF: Understand
    NOTES: Correct = 40%

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

    ANS: A PTS: 1 REF: 3.3 The Brain and Behavior
    DIF: Understand

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

    ANS: A PTS: 1 REF: 3.3 The Brain and Behavior
    DIF: Apply
    NOTES: Correct = 61%

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

    ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
    DIF: Apply

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

    ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
    DIF: Understand

96. Which brain structure appears to play an active role in integrating sensory information?
    a. hypothalamus
    b. limbic system

c. thalamus
d. cerebrum

ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand
NOTES: Correct = 40%

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

ANS: B PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Think Critically

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

ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Think Critically

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

ANS: A PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand

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

~~ANS: D PTS: 1~~
~~REF: 3.3 The Brain and Behavior DIF: Think Critically~~
~~NOTES: Correct = 52%~~

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

b. the hypothalamus.
c. the reticular formation.
d. the hippocampus.

ANS: B PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Think Critically

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

ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Think Critically

102. The hypothalamus influences or regulates all of the following EXCEPT
a. the autonomic nervous system.
b. basic biological needs.
c. memory.
d. feeding.

ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
TOP: WWW DIF: Apply

103. Amy has lost her senses of sight, hearing, and touch. Her symptoms are found to be caused by pressure applied to the brain by a tumor. Where is the tumor likely to be found?
a. cerebrum
b. amygdale
c. thalamus
d. medial forebrain bundle

ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Think Critically

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

ANS: D PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand

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

ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Apply

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

ANS: A PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Apply

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

ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Think Critically

108. Recent research suggests that which of the following structures is involved in higher-order cognitive functions such as attention and planning?
a. pons
b. medulla
c. cerebellum
d. brainstem

ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
TOP: Understand

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

ANS: D PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Think Critically

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

ANS: B PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand

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

ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand

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

ANS: C PTS: 1
REF: 3.3 The Brain and Behavior DIF: Apply
NOTES: Correct = 20%

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

ANS: B PTS: 1
REF: 3.3 The Brain and Behavior TOP: WWW DIF: Understand
NOTES: Correct = 61%

114. The brain structure that is responsible for the human ability to engage in higher mental activity such as thinking and remembering is the
a. corpus callosum.
b. cerebrum.
c. cerebellum.
d. hypothalamus.

ANS: B PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand

115. The structure that connects the two cerebral hemispheres is the
a. corpus callosum.
b. pineal gland.
c. thalamus.
d. parietal lobe.

ANS: A PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand
NOTES: Correct = 91%

116. When Jeffrey slipped on the stairs and hit his head, he saw “stars” for several minutes. The “stars” were MOST likely a result of activity in Jeffrey’s

a. temporal lobes.
b. prefrontal cortex.
c. occipital lobes.
d. primary somatosensory cortex.

ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Apply

117. In which of the lobes of the cerebrum is the somatosensory cortex located?
a. frontal
b. parietal
c. temporal
d. occipital

ANS: B PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand

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

ANS: B PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Apply
NOTES: Correct = 75%

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

~~ANS: A PTS: 1 REF: 3.3 The Brain and Behavior~~
~~DIF: Apply~~

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

ANS: A PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Apply

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

ANS: A PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Think Critically
NOTES: Correct = 73%

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

ANS: B PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand

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

ANS: D PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand

123. In humans, the prefrontal cortex accounts for ____ of the cerebral cortex.
a. nearly one-half
b. approximately one-third
c. just over 10%
d. less than 5%

ANS: B PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand

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

ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Apply

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

ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand
NOTES: Correct = 51%

126. Some theorists believe that a sort of "executive control system," which is responsible for monitoring, directing, and organizing thought processes, is housed in the

a. corpus callosum.
b. prefrontal cortex.
c. hindbrain.
d. medial forebrain bundle.

ANS: B PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Apply

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

ANS: A PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand

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

ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Apply

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

ANS: D PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand

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

ANS: A PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Think Critically

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

ANS: B PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Think Critically

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

ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Apply

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

ANS: B PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand

134. Which of the following statements concerning plasticity in the brain is FALSE?
a. Damage to one area of brain tissue may result in changes in other areas of the brain that compensate for the damage.
b. Experience can change the features of brain structures.
c. Older brains show more plasticity than younger brains.
d. Even adult brains are able to form additional neurons.

ANS: C PTS: 1 REF: 3.3 The Brain and Behavior
DIF: Understand

135. The area of the frontal lobe that plays an important role in the production of speech is called
a. Wernicke's area.
b. Broca's area.
c. Cannon's area.
d. Sperry's area.

ANS: B PTS: 1 REF: 3.4 Right Brain/Left Brain: Cerebral Specialization
DIF: Understand
NOTES: Correct = 78%

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

ANS: B PTS: 1 REF: 3.4 Right Brain/Left Brain: Cerebral Specialization
DIF: Apply

~~139. If you have difficulty understanding the meaning of someone's speech, you may suspect damage to~~
~~a. the pituitary gland.~~
~~b. Wernicke's area.~~

~~c. the corpus callosum.~~
~~d. Korsakoff's area.~~

~~ANS: B PTS: 1~~
~~REF: 3.4 Right Brain/Left Brain: Cerebral Specialization DIF: Apply~~
~~NOTES: Correct = 39%~~

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

ANS: C PTS: 1 REF: 3.4 Right Brain/Left Brain: Cerebral Specialization
DIF: Apply

138. The main reason for the characterization of the left hemisphere as the "dominant" hemisphere was
a. the evidence that the left hemisphere usually processes language.
b. the evidence that the left hemisphere usually processes complex information.
c. the fact that the majority of people are right-handed.
d. that split-brain patients use only their left hemisphere for processing information.

ANS: A PTS: 1 REF: 3.4 Right Brain/Left Brain: Cerebral Specialization
DIF: Apply

139. For most people, the production of language resides in the
a. posterior cerebral hemisphere.
b. central cerebral hemisphere.
c. right cerebral hemisphere.
d. left cerebral hemisphere.

ANS: D PTS: 1
REF: 3.4 Right Brain/Left Brain: Cerebral Specialization TOP: WWW
DIF: Apply
NOTES: Correct = 75%

140. Surgically disconnecting the cerebral hemispheres has its origins in the treatment of
a. epilepsy.
b. comas.
c. schizophrenia.
d. psychopathology.

ANS: A PTS: 1
REF: 3.4 Right Brain/Left Brain: Cerebral Specialization DIF: Understand
NOTES: Correct = 82%

141. If the left hemisphere of the brain were damaged, which part of the body would be MOST directly affected?
a. the left half
b. the right half
c. the upper portion
d. the entire body

ANS: B PTS: 1
REF: 3.4 Right Brain/Left Brain: Cerebral Specialization DIF: Understand
NOTES: Correct = 97%

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

ANS: A PTS: 1
REF: 3.4 Right Brain/Left Brain: Cerebral Specialization DIF: Think Critically
NOTES: Correct = 38%

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

ANS: D PTS: 1 REF: 3.4 Right Brain/Left Brain: Cerebral Specialization
DIF: Apply

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

ANS: B PTS: 1
REF: 3.4 Right Brain/Left Brain: Cerebral Specialization DIF: Think Critically
NOTES: Correct = 82%

145. The brain structure involved in comprehension of speech is
a. Broca's area.
b. Wernicke's area.
c. the prefrontal cortex.
d. the parietal cortex.

ANS: B PTS: 1 REF: 3.4 Right Brain/Left Brain: Cerebral Specialization
DIF: Understand

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

ANS: A PTS: 1 REF: 3.4 Right Brain/Left Brain: Cerebral Specialization

DIF: Think Critically

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

ANS: D PTS: 1 REF: 3.4 Right Brain/Left Brain: Cerebral Specialization
DIF: Think Critically

~~151. Weak cerebral lateralization is associated with~~
~~a. increased risk of depression.~~
~~b. poor math skills.~~
~~c. poor driving ability.~~
~~d. lower IQ.~~

~~ANS: D PTS: 1 REF: 3.4 Right Brain/Left Brain: Cerebral Specialization TOP: Understand~~

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

ANS: A PTS: 1
REF: 3.4 Right Brain/Left Brain: Cerebral Specialization DIF: Understand
NOTES: Correct = 72%

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

ANS: A PTS: 1 REF: 3.4 Right Brain/Left Brain: Cerebral Specialization
DIF: Apply

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

ANS: A PTS: 1 REF: 3.4 Right Brain/Left Brain: Cerebral Specialization
DIF: Apply

151. Recent research suggests that the two hemispheres of the brain

a. are in constant collaboration.
b. cannot be adequately studied with current brain imaging techniques.
c. operate independently for most complex cognitive tasks.
d. are linked primarily in the hindbrain.

ANS: A PTS: 1 REF: 3.4 Right Brain/Left Brain: Cerebral Specialization
DIF: Understand

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

~~ANS: A PTS: 1~~
~~REF: 3.5 The Endocrine System: Another Way to Communicate DIF: Understand~~
~~NOTES: Correct = 94%~~

152. People who have hormonal imbalances have problems with their
a. endocrine system.
b. reticular formation.
c. limbic system.
d. left brain/right brain communication.

ANS: A PTS: 1
REF: 3.5 The Endocrine System: Another Way to Communicate TOP: WWW
DIF: Understand

153. ____ function in the endocrine system much like ____ in the nervous system.
a. Hormones; dendrites
b. Hormones; neurotransmitters
c. Endorphins; sensory neurons
d. Neurotransmitters; hormones

ANS: B PTS: 1
REF: 3.5 The Endocrine System: Another Way to Communicate
DIF: Understand

154. Hormones are transported throughout the body via the
a. nervous system.
b. limbic system.
c. bloodstream.
d. lymph nodes.

ANS: C PTS: 1
REF: 3.5 The Endocrine System: Another Way to Communicate DIF: Understand
NOTES: Correct = 46%

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

ANS: C PTS: 1
REF: 3.5 The Endocrine System: Another Way to Communicate DIF: Understand
NOTES: Correct = 46%

156. Much of the endocrine system is controlled by the nervous system through the
a. medulla.
b. hypothalamus.
c. thalamus.
d. cerebellum.

ANS: B PTS: 1
REF: 3.5 The Endocrine System: Another Way to Communicate DIF: Understand

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

ANS: B PTS: 1
REF: 3.5 The Endocrine System: Another Way to Communicate DIF: Apply

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

ANS: C PTS: 1
REF: 3.5 The Endocrine System: Another Way to Communicate DIF: Think Critically

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

ANS: B PTS: 1
REF: 3.5 The Endocrine System: Another Way to Communicate DIF: Understand

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

ANS: A PTS: 1
REF: 3.5 The Endocrine System: Another Way to Communicate DIF: Understand

161. The “master gland” of the endocrine system is the
a. hypothalamus.
b. adrenal gland.

c. pituitary gland.
d. gonads.

ANS: C PTS: 1
REF: 3.5 The Endocrine System: Another Way to Communicate DIF: Understand

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

ANS: A PTS: 1
REF: 3.6 Heredity and Behavior: Is It All in the Genes? DIF: Understand
NOTES: Correct = 95%

163. With the exception of the sex cells, every cell in the human body contains
a. 23 chromosomes.
b. 46 chromosomes.
c. 23 recessive genes and 23 dominant genes.
d. 46 heterozygous pairs.

ANS: B PTS: 1 REF: 3.6 Heredity and Behavior: Is It All in the Genes?
DIF: Understand

164. Which of the following are generally considered the key functional units in hereditary transmission?
a. dichromats
b. limens
c. chromosomes
d. genes

ANS: D PTS: 1 REF: 3.6 Heredity and Behavior: Is It All in the Genes?
TOP: WWW DIF: Understand

165. A ____ contains thousands of ____.
a. DNA; genes
b. DNA; chromosomes
c. chromosome; genes
d. gene; chromosomes

ANS: C PTS: 1 REF: 3.6 Heredity and Behavior: Is It All in the Genes?
DIF: Understand

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

ANS: D PTS: 1
REF: 3.6 Heredity and Behavior: Is It All in the Genes? DIF: Understand
NOTES: Correct = 83%

167. Skin color is determined by three to five gene pairs. This makes skin color

a. a monogenic trait.
b. a dominant trait.
c. a polygenic trait.
d. a polymorphous trait.

ANS: C PTS: 1
REF: 3.6 Heredity and Behavior: Is It All in the Genes? DIF: Apply
NOTES: Correct = 88%

168. Which of the following kinds of studies can truly demonstrate that specific traits are indeed inherited?
a. family studies
b. twin studies
c. adoption studies
d. none of the above

ANS: D PTS: 1 REF: 3.6 Heredity and Behavior: Is It All in the Genes?
DIF: Apply

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

ANS: A PTS: 1
REF: 3.6 Heredity and Behavior: Is It All in the Genes? DIF: Understand
NOTES: Correct = 94%

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

ANS: B PTS: 1 REF: 3.6 Heredity and Behavior: Is It All in the Genes?
DIF: Think Critically

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

ANS: C PTS: 1 REF: 3.6 Heredity and Behavior: Is It All in the Genes?
DIF: Think Critically

172. The research on adopted children and intelligence has found that there is a significant similarity between them and
a. their biological parents.
b. their adoptive parents.

c. both sets of parents.
d. their adoptive siblings.

ANS: C PTS: 1
REF: 3.6 Heredity and Behavior: Is It All in the Genes? DIF: Understand
NOTES: Correct = 62%

173. Donavon was adopted at birth by Mr. and Mrs. Erndt. Although neither of his biological parents had much musical ability, Donavon has become an excellent pianist, just like Mr. Erndt. This information could be used as evidence to suggest that
a. environmental factors have more influence than genetic factors in musical talent.
b. both genetic and environmental factors contribute equally to musical talent.
c. genetic factors have more influence than environmental factors in musical talent.
d. neither genetic nor environmental factors contribute to musical talent.

ANS: A PTS: 1 REF: 3.6 Heredity and Behavior: Is It All in the Genes?
DIF: Think Critically

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

ANS: D PTS: 1 REF: 3.6 Heredity and Behavior: Is It All in the Genes?
DIF: Think Critically

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

ANS: B PTS: 1 REF: 3.6 Heredity and Behavior: Is It All in the Genes?
DIF: Understand

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

ANS: C PTS: 1 REF: 3.6 Heredity and Behavior: Is It All in the Genes?
DIF: Think Critically

177. Determining the location of specific genes on specific chromosomes is referred to as
a. genetic mapping.
b. phenomapping.
c. chromosomal atlasing.
d. genome projection.

ANS: A PTS: 1
REF: 3.6 Heredity and Behavior: Is It All in the Genes?
DIF: Understand
NOTES: Correct = 84%

178. Researchers using genetic mapping techniques have had the MOST difficulty identifying the genes responsible for
a. muscular dystrophy.
b. intelligence.
c. height.
d. cystic fibrosis.

ANS: B PTS: 1 REF: 3.6 Heredity and Behavior: Is It All in the Genes?
DIF: Apply

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

ANS: B PTS: 1 REF: 3.6 Heredity and Behavior: Is It All in the Genes?
DIF: Think Critically

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

ANS: C PTS: 1 REF: 3.7 The Evolutionary Bases of Behavior
DIF: Apply

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

ANS: A PTS: 1 REF: 3.7 The Evolutionary Bases of Behavior
DIF: Understand

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

ANS: C PTS: 1 REF: 3.7 The Evolutionary Bases of Behavior
DIF: Understand

183. ____ refers to the reproductive success of an individual organism relative to the average reproductive success in the population.
a. Natural selection
b. Polygenic transmission
c. Fitness
d. Gene flow

ANS: C PTS: 1 REF: 3.7 The Evolutionary Bases of Behavior
DIF: Understand

184. Darwin believed that a trait contributed to evolution by providing
a. a reproductive advantage.
b. a survival advantage.
c. both a reproductive and a survival advantage.
d. either a reproductive or survival advantage.

ANS: D PTS: 1 REF: 3.7 The Evolutionary Bases of Behavior
DIF: Understand

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

ANS: A PTS: 1 REF: 3.7 The Evolutionary Bases of Behavior
DIF: Understand

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

ANS: B PTS: 1 REF: 3.7 The Evolutionary Bases of Behavior
DIF: Apply

187. Contemporary models account for or explain evolutionary theory in
a. global terms.
b. behavioral terms.
c. genetic terms.
d. biological terms.

ANS: C PTS: 1 REF: 3.7 The Evolutionary Bases of Behavior
DIF: Understand

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

ANS: B PTS: 1 REF: 3.7 The Evolutionary Bases of Behavior
DIF: Apply

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

ANS: B PTS: 1 REF: 3.7 The Evolutionary Bases of Behavior
DIF: Apply

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

ANS: C PTS: 1 REF: 3.8 Reflecting on the Chapter's Themes
DIF: Apply

191. Schizophrenia may be related to abnormalities in neurotransmitter activity, structural defects in the brain, and genetic vulnerabilities. These observations MOST directly relate to the text's unifying theme that
a. behavior is determined by multiple causes.
b. psychology is empirical.
c. heredity and environment jointly influence behavior.
d. behavior is shaped by cultural heritage.

ANS: A PTS: 1 REF: 3.8 Reflecting on the Chapter's Themes
DIF: Understand

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

ANS: A PTS: 1 REF: 3.8 Reflecting on the Chapter's Themes
DIF: Think Critically

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

ANS: B PTS: 1
REF: 3.9 Personal Application: Evaluating the Concept of "Two Minds in One"

TOP: WWW DIF: Think Critically

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

ANS: B PTS: 1
REF: 3.9 Personal Application: Evaluating the Concept of "Two Minds in One"
DIF: Apply

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

ANS: B PTS: 1
REF: 3.9 Personal Application: Evaluating the Concept of "Two Minds in One"
DIF: Understand

196. The seminal research on critical periods in neural development was conducted in the 1960s on which of the following subjects?
a. rats
b. adult monkeys
c. preschool children
d. newborn kittens

ANS: D PTS: 1
REF: 3.10 Critical Thinking Application: Building Better Brains DIF: Understand

197. In summarizing recent research in neuroscience, science writer Ronald Kotulak concluded that which of the following periods is critically important to an individual's brain development?
a. the first 3 years of life
b. 6 to 10 years of age
c. adolescence
d. the college years

ANS: A PTS: 1
REF: 3.10 Critical Thinking Application: Building Better Brains DIF: Understand

198. All of the studies that highlighted the possible importance of early experience in animals had which of the following features in common?
a. They used extreme conditions to make their comparisons.
b. They used relatively crude measures of brain growth.
c. The researchers used very small samples.
d. They were supported by a grant from the United States Department of Education.

ANS: A PTS: 1
REF: 3.10 Critical Thinking Application: Building Better Brains DIF: Understand

199. Which of the following statements is MOST accurate?

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

ANS: B PTS: 1
REF: 3.10 Critical Thinking Application: Building Better Brains DIF: Apply

200. Which of the following has NOT been demonstrated through scientific research?
a. Rats raised in enriched environments have more synapses than rats raised in impoverished environments.
b. Kittens deprived of visual stimulation in one eye early in life become permanently blind in that eye.
c. After listening to classical music, college students show increased performance on some tasks.
d. Young infants exposed to classical music show higher cognitive performance in preschool.

ANS: D PTS: 1
REF: 3.10 Critical Thinking Application: Building Better Brains
DIF: Understand