# Test Bank for Psychology An Exploration 4th Edition by Ciccarelli

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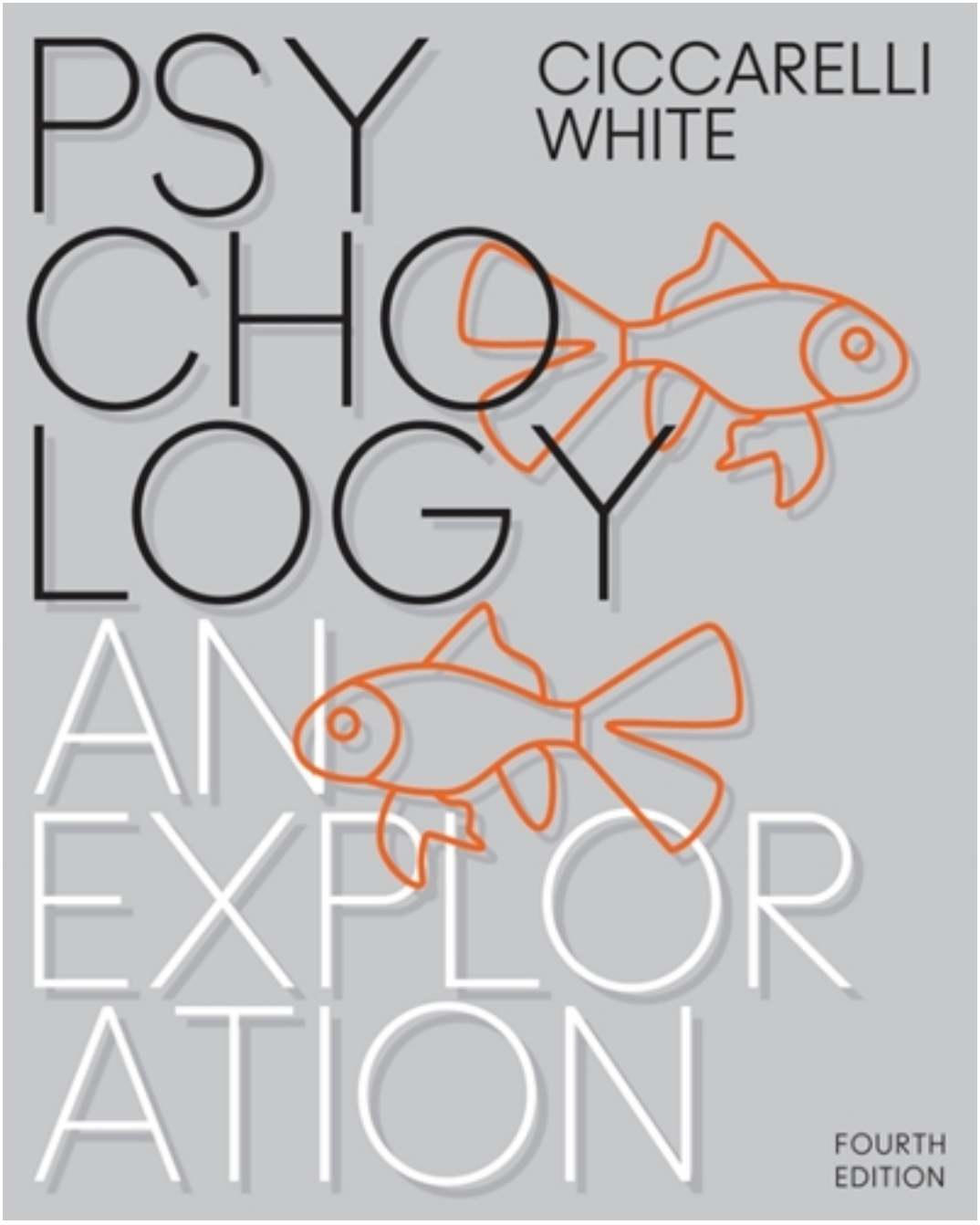


# Test Bank

# TOTAL ASSESSMENT GUIDE

# Chapter 2

## The Biological Perspective

| Learning Objectives | Remember the Facts | Understand the Concepts | Apply What You Know | Analyze It |
|---|---|---|---|---|
| LO 2.1 Identify the parts of a neuron and describe the function of each. | 1-11, 13-14, 18-20, 22-28, 242-245, 274-275, 290 | 16, 21 | 17 | 12, 15 |
| LO 2.2 Explain the action potential. | 29-31, 33, 246-248, 274, 290 | 32, 34-35, 37-38 | | 36 |
| LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body. | 39-43, 45, 49, 51, 53, 55-57, 59-60, 250, 276-278 | 46-47, 62-63, 249 | 50, 52, 54, 61 | 44, 48, 58 |
| LO 2.4 Describe how the components of the central nervous system interact and how they may respond to experience or injury | 64-67,69-72, 74, 251-255, 291 | 75, 79-80 | 73, 76, 78 | 68, 77, 279 |
| LO 2.5 Differentiate the roles of the somatic and autonomic nervous systems. | 81-82, 84-85, 87-88, 92-93, 95-97, 101, 256-257, 292 | 83, 86, 90 | 89, 91, 94, 98-100, 102-103 | 279-280 |
| LO 2.6 Explain why the pituitary gland is known as the “master gland.” | 105, 107, 293 | 104, 106 | | |
| LO 2.7 Recall the role of various endocrine glands. | 108-110, 113-114, 258-262, 281, 293 | | 111-112, 115 | |
| LO 2.8 Describe how the autonomic nervous system and body are impacted by stress | 116, 118-119, 123-125, 127, 130-131, 134-136, 263-265, 282, 294 | 117, 120, 126, 128, 133 | 121-122, 129, 283, 295 | 132 |
| LO 2.9 Describe how lesioning studies and brain stimulation are used to study the brain. | 137, 139 | 138 | 296 | |
| LO 2.10 Compare and contrast neuroimaging techniques for mapping the brain’s structure and function. | 140, 144, 147-148, 150, 266, 284 | 143 | 141-142, 145-146, 149, 151-153, 296 | |
| LO 2.11 Identify the different structures of the hindbrain and the function of each. | 154-155, 158-159, 161, 163, 168-169, 267 | | 156-157, 160, 162, 164, 166-167, 170-174 | 165 |
| LO 2.12 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation. | 175-178, 181-182, 185, 188-190, 194, 269 | 183 | 180, 184, 186-187, 191-193, 268 | 179 |

| | | | | |
|---|---|---|---|---|
| LO 2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body. | 195-198, 200, 202-204, 207-208, 211-212, 216, 222, 269-270, 297 | 199, 205, 213, 220, 285 | 201, 206, 209-210, 214-215, 217-219, 221 | |
| LO 2.14 Name the parts of the cortex responsible for higher forms of thought, such as language. | 223-224, 226, 271, 286-287, 297 | | 225, 227-228 | |
| LO 2.15 Explain how some brain functions differ between the left and right hemispheres. | 229, 232, 236-237, 272, 288 | 233, 235, 238, 273 | 230-231, 234 | 289 |
| LO 2.16 Identify some potential causes of attention-deficit/hyperactivity disorder. | 241 | | 240 | |

**Name _____**

## Chapter 2 - Quick Quiz 1

1. The two main divisions of the nervous system are the _____ and _____.
   a) brain; spinal cord
   b) autonomic; somatic nervous systems
   c) peripheral nervous system; central nervous system
   d) glands; muscles

2. Which part of the neuron is responsible for maintaining the life of the cell?
   a) axon
   b) soma
   c) dendrite
   d) cell membrane

3. _____ plays a critical role as a neurotransmitter that stimulates skeletal muscles to contract.
   a) acetylcholine
   b) GABA
   c) Dopamine
   d) Endorphin

4. Which part of the nervous system takes the information received from the senses, makes sense out of it, makes decisions, and sends commands out to the muscles and the rest of the body?
   a) spinal cord
   b) brain
   c) reflexes
   d) interneurons

5. The part of the autonomic nervous system that is responsible for reacting to stressful events and bodily arousal is called the _____ nervous system.
   a) central
   b) somatic
   c) sympathetic
   d) parasympathetic

6. The field of _____ studies the effects of psychological factors such as stress, emotions, thinking, and behavior on the immune system.
   a) social psychology
   b) psychoneuroimmunology
   c) organic medicine
   d) interactive psychology

7. A brain-imaging method using radio waves and magnetic fields of the body to produce detailed images of the brain is called _____.
   a) magnetic resonance imaging (MRI)
   b) electroencephalography (EEG)
   c) positron-emission tomography (PET)
   d) computerized axial tomography (CT)

8. What part of the brain acts as a relay station for incoming sensory information?
   a) hypothalamus
   b) thalamus
   c) cerebellum
   d) pituitary gland

9. Which of the following regions contains the primary visual cortex?
   a) frontal lobe
   b) parietal lobe
   c) temporal lobe
   d) occipital lobe

10. Which of the following is a function of the right hemisphere?
    a) perception, expression of emotion, and recognition of patterns
    b) sense of time and rhythm
    c) speech, handwriting, and calculation
    d) language processing in most individuals

## Chapter 2 - Quick Quiz 1
## Answer Key

1. c — Explanation: These are the two main divisions of the nervous system. (Topic: An Overview of the Nervous System, Remember the Facts, 1 - Easy, LO 2.4 - Describe how the components of the central nervous system interact and how they may respond to experience and injury, APA 1.1)

2. b — Explanation: The soma is responsible for maintaining the life of the cell. (Topic: Neurons and Nerves: Building the Network, Remember the Facts, 2 - Moderate, LO 2.1 - Identify the parts of a neuron and the function of each, APA 1.1)

3. a — Explanation: *Acetylcholine is an excitatory neurotransmitter that stimulates muscles to contract.* (Topic: Neurons and Nerves: Building the Network, Remember the Facts, 1 - Easy, LO 2.3 - Describe how neurons use neurotransmitters to communicate with each other and with the body, APA 1.1)

4. b — Explanation: That is the responsibility of the brain. (Topic: An Overview of the Nervous System, Remember the Facts, 1 - Easy, LO 2.4 - Describe how the components of the central nervous system interact and how they may respond to experience or injury, APA 1.1)

5. c — Explanation: The sympathetic nervous system is responsible for reacting to stressful events and bodily arousal. (Topic: An Overview of the Nervous System, Remember the Facts, 2 - Moderate, LO 2.5 - Differentiate the roles of the somatic and autonomic nervous systems, APA 1.1)

6. b — Explanation: Psychoneuroimmunology is concerned with the effects of stress on the immune system. (Topic: The Endocrine Gland, Remember the Facts, 1 - Easy, LO=2.8 – Describe how the autonomic nervous system and body are impacted by stress, APA=1.1)

7. a — Explanation: MRI is a brain-imaging method using ratio waves and magnetic fields of the body. (Topic: Looking Inside the Living Brain, Remember the Facts, 3 - Difficult, LO 2.10 - Compare and contrast neuroimaging techniques for mapping the brain's structure and function, APA 1.1)

8. b — Explanation: The thalamus acts as a relay station. (Topic: From the Bottom Up: The Structures of the Brain, Remember the Facts, 3 - Difficult, LO 2.12 - Identify the structures of the brain that are involved in emotion, learning, memory, and motivation, APA 1.1)

9. d — Explanation: The occipital lobes contain the primary visual cortex. (Topic: From the Bottom Up: The Structures of the Brain, Remember the Facts, 1 - Easy, LO 2.13 - Identify the parts of the cortex that process the different senses and those that control movement of the body, APA 1.1)

10. a — Explanation: These are functions of the right hemisphere. (Topic: From the Bottom Up: The Structures of the Brain, Understand the Concepts, 2 - Moderate, LO 2.15 – Explain how some brain functions differ between the left and right hemispheres, APA 1.1)

**Name _____**

## Chapter 2 - Quick Quiz 2

1. The branchlike structures that receive messages from other neurons are called _____.
   a) axons
   b) nerve bundles
   c) dendrites
   d) synapses

2. Which of the following are tiny sacs in a synaptic knob that release chemicals into the synapse?
   a) synaptic vesicles
   b) synaptic nodes
   c) terminal buttons
   d) synaptic gaps

3. Which of the following are responsible for acting as a facilitator of communication between neurons?
   a) motor neurons
   b) interneurons
   c) sensory neurons
   d) reflexes

4. Every deliberate action you make, such as pedaling a bike, walking, scratching, or smelling a flower, involves neurons in the _____ nervous system.
   a) sympathetic
   b) somatic
   c) parasympathetic
   d) autonomic

5. Which endocrine gland controls all of the other endocrine glands?
   a) thyroid
   b) adrenal
   c) thymus
   d) pituitary

6. Which parts of the nervous system are associated with the general adaptation syndrome?
   a) somatic and parasympathetic
   b) autonomic and sympathetic
   c) sympathetic and parasympathetic
   d) central and somatic

7. Signals from the neurons of which sense are NOT sent to the cortex by the thalamus?
   a) hearing
   b) smell
   c) taste
   d) vision

8. Which of the following is the section of the brain located at the rear and bottom of each cerebral hemisphere and contains the visual centers of the brain?
   a) occipital lobe
   b) parietal lobe
   c) temporal lobe
   d) frontal lobe

9. The area of the frontal lobe that is devoted to the production of fluent speech is _____ area.
   a) Broca's
   b) Gall's
   c) Wernicke's
   d) Korsakoff's

10. Which of the following is the upper part of the brain consisting of two cerebral hemispheres and the structures that connect them?
    a) occipital lobe
    b) cerebrum
    c) corpus callosum
    d) cerebellum

## Chapter 2 - Quick Quiz 2
## Answer Key

1. c — Explanation: Dendrites receive messages from other neurons. (Topic: Neurons and Nerves: Building the Network, Remember the Facts, 1 - Easy, LO 2.1 - Identify the parts of a neuron and describe the function of each, APA 1.1)

2. a — Explanation: Synaptic vesicles are structures within the synaptic knobs. (Topic: Neurons and Nerves: Building the Network, Remember the Facts, 2 - Moderate, LO 2.3 - Describe how neurons use neurotransmitters to communicate with each other and with the body, APA 1.1)

3. b — Explanation: Interneurons connect the sensory neurons to the motor neurons. (Topic: An Overview of the Nervous System, Remember the Facts, 1 - Easy, LO 2.4 - Describe how the component of the central nervous system interact and how they may respond to experience or injury, APA 1.1)

4. b — Explanation: The somatic nervous system controls voluntary muscle movement. (Topic: An Overview of the Nervous System, Understand the Concepts, 3 - Difficult, LO 2.5 - Differentiate the roles of the somatic and autonomic nervous systems, APA 1.1)

5. d — Explanation: The pituitary gland controls all other endocrine glands. (Topic: Distant Connections: The Endocrine Glands, Remember the Facts, 1 - Easy, LO 2.7 - Recall the role of various endocrine glands, APA 1.1)

6. c — Explanation: The sympathetic nervous and the parasympathetic systems are associated with the general adaptation syndrome. (Topic: The Endocrine System, Understand the Concepts, 3 - Difficult, LO=2.8 – Describe how the autonomic nervous system and body are impacted by stress, APA=1.1)

7. b — Explanation: Signals from the neurons of the sense of smell go directly into special parts of the brain called olfactory bulbs that are the structures responsible for smell. (Topic: From the Bottom Up: The Structures of the Brain, Remember the Facts, 2 - Moderate, LO 2.12 - Identify the structures of the brain that are involved in emotion, learning, memory, and motivation, APA 1.1)

8. a — Explanation: The occipital lobes contain the visual centers of the brain. (Topic: From the Bottom Up: The Structures of the Brain, Remember the Facts, 1 - Easy, LO 2.13 - Identify the parts of the cortex that process the different senses and those that control movement of the body, APA 1.1)

9. a — Explanation: Broca's area is devoted to the production of fluent speech. (Topic: From the Bottom Up: The Structures of the Brain, Remember the Facts, 2 - Moderate, LO 2.14 - Name the parts of the cortex responsible for higher forms of thought, such as language, APA 1.1)

10. b — Explanation: The cerebrum consists of the two cerebral hemispheres and the structures that connect them. (Topic: From the Bottom Up: The Structures of the Brain, Remember the Facts, 3 - Difficult, LO 2.15 - Explain how some brain functions differ between the left and right hemispheres, APA 1.1)

# 2 The Biological Perspective

**Key: Topic, Answer, Type, Learning Objective, Level, Learning Outcomes**

**Bloom Types**
***Remember the Facts***
***Understand the Concepts***
***Apply What You Know***
***Analyze It***

**Level**
***(1)=Easy; (2)=Moderate; (3)=Difficult***

**LO=Learning Objective**
**APA=Learning Outcomes**

**MULTIPLE CHOICE**

## Neurons and Nerves: Building the Network

### Structure of the Neurons: The Nervous System's Building Block

**Learning Objective 2.1 -** Identify the parts of a neuron and the function of each.

**TB_02_01_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
The function of the _____ is to carry information to and from all parts of the body.
a) soma
*Incorrect. The primary responsibility of the soma is to maintain the life of the neuron.*
b) synapse
c) nervous system
*Correct. Sending information to and from all parts of the body is the primary function of the nervous system.*
d) endorphins
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: c, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (1)**
**% correct 91 a= 2 b= 4 c= 91 d=33 *r* = .32**
**% correct 100 a= 0 b= 0 c= 100 d= 0 *r* = .00**
**APA=1.1**

**TB_02_02_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
The nervous system is defined as_____.
a) a complex network of cells that carries information to and from all parts of the body
*Correct. The nervous system is a complex network of cells that carry information to and from all parts of the body.*
b) a specialized cell that makes up the brain and spinal cord
c) all nerves and neurons that are not contained in the brain and spinal cord but that run throughout the body itself
*Incorrect. The nervous system includes networks of neurons that are in the brain and spinal cord.*
d) a gland located in the brain that secretes human growth hormone
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (1)**

**% correct 92 a= 92 b= 1 c= 6 d= 1 *r* = .27**
**% correct 94 a= 94 b= 1 c=4 d= 0 *r* = .26**
**APA=1.1**

**TB_02_03_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.2**
The branch of life sciences which involves the structure and function of the brain and nervous system is called _____.

a) neuroscience

*Correct. This is the branch of life sciences that covers these topics.*

b) bioscience

*Incorrect. The correct answer is neuroscience.*

c) brain scientology
d) neurostemology

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (1)**
**APA=1.2**

**TB_02_04_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.2**
The branch of neuroscience that focuses on the biological bases of psychological processes, behavior, and learning is called _____.

a) biological psychology

*Correct. This is the branch of neuroscience that covers these topics.*

b) bioscience

*Incorrect. The correct answer is biological psychology, which is also called behavioral neuroscience.*

c) brain scientology
d) neurostemology

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (2)**
**APA=1.2**

**TB_02_05_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
Looking at the structure of a cell, you can immediately identify it as a neuron because of the presence of a(n)

a) nucleus.

*Incorrect. All cells have a nucleus.*

b) cell body.
c) axon.

*Correct. Axon, unique to neurons, can be used to differentiate a neuron from other cells.*

d) cell membrane.

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: c, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (1)**
**APA=1.1**

**TB_02_06_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
A specialized cell that makes up the nervous system that receives and sends messages within that system is called a _____.

a) glial cell

*Incorrect. Glial cells serve as a structure for neurons.*

b) neuron

*Correct. A neuron is a specialized cell that makes up the nervous system that receives and sends messages within that system.*

c) cell body
d) myelin sheath

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: b, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (1)**
**% correct 96 a= 4 b= 96 c= 0 d= 0 *r* = .19**
**% correct 97 a= 2 b= 97 c= 1 d= 0 *r* = .39**

**APA=1.1**

**TB_02_07_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
The part of the neuron whose name literally means "branch" is _____.
a) axon
*Incorrect. Dendrite is the correct answer.*
b) dendrite
*Correct. Dendrite comes from the word tree.*
c) myelin
d) soma
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: b, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (2)**
**% correct 77 a= 20 b= 77 c= 1 d= 1 *r* = .32**
**APA=1.1**

**TB_02_08_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
The branchlike structures that *receive* messages from other neurons are called _____.
a) axons
*Incorrect. Axons send but do not receive messages.*
b) nerve bundles
c) dendrites
*Correct. Dendrites receive messages from other neurons.*
d) synapses
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: c, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (1)**
**% correct 84 a= 10 b= 2 c= 84 d= 4 *r* = .39**
**% correct 83 a=11 b= 0 c= 83 d= 5 *r* = .31**
**APA=1.1**

**TB_02_09_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
Which part of the neuron is responsible for maintaining the life of the cell?
a) axon
b) soma
*Correct. The soma is responsible for maintaining the life of the cell.*
c) dendrite
d) cell membrane
*Incorrect. The soma is responsible for maintaining the life of the cell.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: b, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (2)**
**APA=1.1**

**TB_02_10_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
The part of a neuron that contains the nucleus and keeps the entire cell alive and functioning is the _____.
a) axon
b) cell membrane
*Incorrect. The soma is responsible for maintaining the life of the cell.*
c) dendrite
d) soma
*Correct. The soma is responsible for maintaining the life of the cell.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: d, Remember the Facts, LO= 2.1 Identify the parts of a neuron and the function of each., (2)**
**% correct 67 a= 7 b= 23 c= 2 d= 67 *r* = .56**
**APA=1.1**

**TB_02_11_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
By what other name is a soma called?

a) axon
b) cell body

*Correct. The soma is also called the cell body.*

c) dendrite
d) cell membrane

*Incorrect. The soma is also called the cell body.*

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: b, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (1)**
**APA=1.1**

**TB_02_12_Neurons and Nerves: Building the Network_Analyze_LO 2.1, APA 1.1**
Dendrite is to axon as:

a) send is to receive.

*Incorrect. This is the opposite of the correct answer.*

b) send is to regulate.
c) receive is to send.

*Correct. Dendrites are treelike parts of the neuron that are designed to receive messages. The axon sends messages to other neurons.*

d) receive is to release.

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: c, Analyze It, LO=2.1 Identify the parts of a neuron and the function of each., (2)**
**APA=1.1**

**TB_02_13_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
Which part of a neuron is attached to the soma and carries messages out to other cells?

a) soma
b) axon

*Correct. The axon carries messages to other cells.*

c) dendrite

*Incorrect. Dendrites receive messages.*

d) cell membrane

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: b, Remember the Facts, LO= 2.1 Identify the parts of a neuron and the function of each., (1)**
**% correct 81 a= 2 b= 81 c= 14 d= 4 *r* = .31**
**APA=1.1**

**TB_02_14_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
The function of the neuron's axon is to _____.

a) carry messages to other cells

*Correct. The function of the axon is to carry messages to other cells.*

b) regulate the neuron's life processes
c) receive messages from neighboring neurons

*Incorrect. Dendrites, not axons, receive messages.*

d) insulate against leakage of electrical impulses

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (2)**
**% correct 67 a= 67 b= 2 c= 10 d= 21 *r* = .41**
**% correct 80 a= 80 b= 6 c= 13 d= 2 *r* = .30**
**APA=1.1**

**TB_02_15_Neurons and Nerves: Building the Network_Analyze_LO 2.1, APA 1.1**
_____ receive messages from other neurons and _____ send messages to other neurons.

a) Axons; dendrites

*Incorrect. Axons send messages, and dendrites receive messages.*

b) Axon; soma
c) Soma; glial cells

d) Dendrites; axons

*Correct. Dendrites receive messages, and axons carry messages to other cells.*

**TOPIC: Neurons and Nerves: Building the Network**

**ANS: d, Analyze It, LO=2.1 Identify the parts of a neuron and the function of each., (2)**

**% correct 71 a= 23 b= 3 c= 4 d= 71 *r* = .39**

**% correct 78 a= 17 b= 3 c= 1 d= 78 *r* = .46**

**APA=1.1**

**TB_02_16_Neurons and Nerves: Building the Network_Understand_LO 2.1, APA 1.1**

Which of the following BEST represents the order in which a neuron receives and transmits information?

a) dendrites, cell body, axon, axon terminals

*Correct. The dendrite receives a message, the cell body processes it, the axon takes a message to the axon terminals, and the terminal buttons release neurotransmitters.*

b) axon terminals, dendrites, cell body, axon

c) cell body, dendrites, axon terminals, axon

*Incorrect. Every part of this answer is out of the correct order.*

d) axon, cell body, dendrites, axon terminals

**TOPIC: Neurons and Nerves: Building the Network**

**ANS: a, Understand the Concepts, LO=2.1 Identify the parts of a neuron and the function of each., (2)**

**APA=1.1**

**TB_02_17_Neurons and Nerves: Building the Network_Apply_LO 2.1, APA 1.1**

Your teacher asks you to describe the sequence of parts of a neuron that the impulse travels during neural conduction. Which of the following sequences will you offer?

a) dendrites, axon, soma, synaptic knob

b) terminal buttons, axon, soma, dendrites

c) axon, soma, dendrites, synaptic knob

*Incorrect. The neural impulse begins with the receipt of messages from the dendrites.*

d) dendrites, soma, axon, synaptic knob

*Correct. This answer describes the correct sequence.*

**TOPIC: Neurons and Nerves: Building the Network**

**ANS: d, Apply What You Know, LO=2.1 Identify the parts of a neuron and the function of each., (2)**

**APA=1.1**

**TB_02_18_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**

What is the term used to describe the bulbs located at the end of the axon?

a) axon terminals

*Correct. The axon terminals are located at the end of the axon.*

b) synaptic vesicles

*Incorrect. Synaptic vesicles are structures within the synaptic knobs.*

c) synapses

d) receptor sites

**TOPIC: Neurons and Nerves: Building the Network**

**ANS: a, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (2)**

**% correct 59 a= 59 b= 15 c= 3 d= 22 *r* = .48**

**% correct 52 a= 52 b= 20 c= 13 d= 15 *r* = .38**

**APA=1.1**

**TB_02_19_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**

What is the term used to describe the rounded areas on the ends of the axon terminals?

a) synaptic vesicles

*Incorrect. Synaptic vesicles are structures within the synaptic knobs.*

b) axons

c) dendrites

d) synaptic knobs

*Correct. Synaptic knobs are located at the tip of each axon terminal.*

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: d, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (2)**
**% correct 73 a= 24 b= 1 c= 2 d= 73 *r* = .33**
**% correct 75 a= 19 b= 1 c= 5 d= 75 *r* = .20**
**APA=1.1**

**TB_02_20_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
Cells that direct and guide the migration of neurons during development are known as
a) mitochondrial cells.
b) glial cells.
*Correct. Glial cells provide a variety of support for neurons, including directing and guiding neuron cells during development.*
c) terminal cells.
d) stem cells.
*Incorrect. Stem cells, found in tissues of the body, are capable of manufacturing other cell types and replace damaged cells.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: b, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (1)**
**APA=1.1**

**TB_02_21_Neurons and Nerves: Building the Network_Understand_LO 2.1, APA 1.1**
What are two roles of glial cells?
a) acting as insulation and providing structure to surrounding neurons
*Correct. This answer defines two roles of glial cells.*
b) shaping cells and moving new neurons into place
*Incorrect. Glial cells provide structure and insulation to neurons.*
c) regulating metabolic activity and serving as pain detectors
d) monitoring neural transmission and releasing hormones in the brain
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: a, Understand the Concepts, LO=2.1 Identify the parts of a neuron and the function of each., (3)**
**% correct 59 a= 59 b= 4 c= 11 d= 22 *r* = .32**
**% correct 61 a= 61 b= 8 c= 7 d= 24 *r* = .32**
**APA=1.1**

**TB_02_22_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
A cell in the human nervous system whose primary function is to provide insulation and structure for neurons on which they may develop and work is called a(n) _____.
a) epidermal cell
b) adipose cell
c) glial cell
*Correct. Glial cells serve as a structure on which neurons develop and work.*
d) myelin sheath
*Incorrect. The myelin sheath does not serve as a structure on which neurons develop and work.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: c, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (3)**
**% correct 46 a= 3 b= 1 c= 46 d= 51 *r* = .34**
**APA=1.1**

**TB_02_23_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
Two specialized types of glial cells are called _____ and _____
a) occipital; lobitical
b) oligodendrocytes; Schwann cells
*Correct. These are the two types according to the text.*
c) occipital; Schwann
*Incorrect. B is the correct answer.*
d) oligodendrocytes; lobitical

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: b, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (3)**
**APA=1.1**

**TB_02_24_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
What is the function of myelin?
a) to serve as a structure for neurons
*Incorrect. This is the function of glial cells, not myelin.*
b) to monitor neural activity
c) to speed up the neural impulse
*Correct. Myelin speeds up the neural impulse.*
d) to produce neurotransmitters
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: c, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (2)**
**% correct 71 a= 14 b= 7 c= 71 d= 9 *r* = .33**
**% correct 62 a= 28 b= 3 c= 62 d= 8 *r* = .44**
**APA=1.1**

**TB_02_25_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
Which of the following is TRUE about myelin?
a) It is made of a fatty substance.
*Correct. Myelin is made up of a fatty type of tissue called glial cells.*
b) It is covered by axons.
*Incorrect. Myelin covers axons. It is not covered by axons.*
c) It inhibits neural communication.
d) It slows down neuronal operations.
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (2)**
**APA=1.1**

**TB_02_26_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
One purpose of the _____ is to speed up the neural message traveling down the axon.
a) receptor site
b) axon terminal
*Incorrect. The axon terminal does not speed up the neural impulse.*
c) myelin
*Correct. Myelin speeds up the neural impulse.*
d) synaptic vesicle
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: c, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (2)**
**% correct 78 a= 2 b= 8 c= 78 d= 13 *r* = .31**
**APA=1.1**

**TB_02_27_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
A group of axons bundled together coated in myelin that travels together through the body is called a _____.
a) synaptic vesicle
b) nerve
*Correct. Bundles of myelin-coated axons travel together in cables called nerves.*
c) neurilemma
*Incorrect. Neurilemma enable damaged neurons to repair themselves.*
d) myelinated pathway
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: b, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (2)**
**% correct 60 a= 20 b= 60 c= 6 d= 14 *r* = .49**
**APA=1.1**

**TB_02_28_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
A nerve is a group of _____ bundled together.
a) axons
*Correct. Nerves are bundles of myelin-coated axons.*
b) interneurons
c) dendrites
*Incorrect. Dendrites are part of the neuron.*
d) glial cells
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (3)**
**% correct 37 a= 37 b= 37 c= 8 d= 18 *r* = .31**
**APA=1.1**

## Generating the Message Within the Neuron: The Neural Impulse

**Learning Objective 2.2 -** Explain the action potential.

**TB_02_29_Neurons and Nerves: Building the Network_Remember_LO 2.2, APA 1.1**
When a cell is "at rest," it is in a state called the _____.
a) stopping point
b) obcipitation junction
*Incorrect. This is a fictitious word.*
c) resting potential
*Correct. A cell at rest is in a state called the resting potential.*
d) action potential
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: c, Remember the Facts, LO=2.2 Explain the action potential., (1)**
**% correct 85 a= 1 b= 0 c= 85 d= 13 *r* = .41**
**APA=1.1**

**TB_02_30_Neurons and Nerves: Building the Network_Remember_LO 2.2, APA 1.1**
What do we call the state of a neuron when it is NOT firing a neural impulse?
a) action potential
*Incorrect. Action potential is the state a neuron is in when firing a neural impulse.*
b) resting potential
*Correct. Resting potential is the state a neuron is in when not firing a neural impulse.*
c) myelination signal
d) transmission impulse
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: b, Remember the Facts, LO=2.2 Explain the action potential., (1)**
**% correct 84 a= 11 b= 84 c= 1 d=4 *r* = .18**
**APA=1.1**

**TB_02_31_Neurons and Nerves: Building the Network_Remember_LO 2.2, APA 1.1**
The state during which a neuron contains more negatively charged ions inside the cell than outside the cell and is NOT firing is referred to as the _____.
a) action potential
*Incorrect. Action potential is the state a neuron is in when firing.*
b) quiet potential
c) synaptic potential
d) resting potential
*Correct. Resting potential is the state a neuron is in when a cell is not firing a neural impulse.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: d, Remember the Facts, LO=2.2 Explain the action potential., (1)**
**% correct 85 a= 4 b= 4 c= 7 d= 85 *r* = .19**

**APA=1.1**

**TB_02_32_Neurons and Nerves: Building the Network_Understand_LO 2.2, APA 1.1**
The charge that a neuron at rest maintains is due to the presence of a high number of _____ charged ions inside the neuron's membrane.

a) actively
b) passively
c) negatively

*Correct. Negatively charged ions inside the neuron's membrane are what give rise to a negative resting potential.*

d) positively

*Incorrect. It is during the action potential that the positively charged ions flow into the neuron and outnumber the negatively charged ions.*

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: c, Understand the Concepts, LO=2.2 Explain the action potential., (2)**
**APA=1.1**

**TB_02_33_Neurons and Nerves: Building the Network_Remember_LO 2.2, APA 1.1**
When the electrical potential in a cell is in action versus a resting state, this electrical charge reversal is known as the _____.

a) resting potential

*Incorrect. This would be when a cell continued to be at rest.*

b) excitation reaction
c) action potential

*Correct. This is the state where the electrical charge is reversed.*

d) permeable reaction

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: c, Remember the Facts, LO=2.2 Explain the action potential., (2)**
**% correct 75 a= 14 b= 10 c= 75 d= 1 *r* = .31**
**APA=1.1**

**TB_02_34_Neurons and Nerves: Building the Network_Understand_LO 2.2, APA 1.1**
The electrical reversal that occurs in the action potential begins at the:

a) axon hillock.

*Correct. The axon hillock, on the axon and closest to the soma, is the start point for the electrical reversal that occurs during the action potential.*

b) dendrites.

*Incorrect. The dendrites receive messages from other neurons, but the action potential begins at the start of the axon, at the axon hillock.*

c) axon terminals.
d) vesicles.

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO=2.2 Explain the action potential., (1)**
**APA=1.1**

**TB_02_35_Neurons and Nerves: Building the Network_Understand_LO 2.2, APA 1.1**
The term "fire" when referring to neural transmission indicates that a neuron:

a) has become less positive in charge.
b) has received, in its dendrites, appropriate inputs from other neurons.

*Correct. A neuron fires after the dendrites receive enough stimulation to trigger the cell body to generate an action potential.*

c) is unable to transmit information to another neuron.
d) has become more negative in charge.

*Incorrect. In fact, the firing state of the neuron occurs when it generates a positive charge rather than a negative charge.*

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: b, Understand the Concepts, LO=2.2 Explain the action potential., (3)**

**APA=1.1**

**TB_02_36_Neurons and Nerves: Building the Network_Analyze_LO 2.2, APA 1.1**
During action potential, the electrical charge inside the neuron is _____ the electrical charge outside the neuron.
a) positive compared to
*Correct. There are more positively charged ions inside the cell than outside.*
b) larger than
c) negative compared to
*Incorrect. During resting potential, the inside is more negatively charged.*
d) smaller than
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: a, Analyze It, LO=2.2 Explain the action potential., (3)**
**APA=1.1**

**TB_02_37_Neurons and Nerves: Building the Network_Understand_LO 2.2, APA 1.1**
When you tap your finger on the desk, the message from the neuron
a) will slow down as it reaches the end of the axon.
b) will speed up as it reaches the end of the axon.
c) travels down the dendrite, not the axon.
*Incorrect. The action potential message travels down the axon, not the dendrite.*
d) neither speeds up nor slows down as it travels down the axon.
*Correct. The action potential message fires in an all-or-none- manner, neither speeding up or slowing down as it travels down the axon.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: d. Understand the Concepts, LO2.2 Explain the action potential., (3)**
**APA-1.1**

**TB_02_38_Neurons and Nerves: Building the Network_Understand_LO 2.2, APA 1.1**
When a neuron fires, it fires in a(n) _____ fashion, as there is no such thing as "partial" firing.
a) all-or-none
*Correct. This is the term used to describe how neurons fire according to the book.*
b) rapid fire
c) accidental patterned
d) quick successioned
*Incorrect. This is not the term referred to in the book.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: a, Understand the Concepts, LO=2.2 Explain the action potential., (2)**
**APA=1.1**

## Neurotransmission

**Learning Objective 2.3 -** Describe how neurons use neurotransmitters to communicate with each other and with the body.

**TB_02_39_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
The saclike structures found inside the synaptic knob containing chemicals are called _____.
a) axon terminals
*Incorrect. The axon terminals are limb-like structures.*
b) synapses
c) synaptic vesicles
*Correct. Synaptic vesicles are structures within the synaptic knobs.*
d) receptor sites
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: c, Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (2)**

**% correct 69 a= 5 b= 8 c= 69 d= 17 *r* = .53**
**% correct 64 a= 20 b= 12 c= 64 d= 14 *r* = .45**
**APA=1.1**

**TB_02_40_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
Which of the following are tiny sacs in an axon terminal that release chemicals into the synapse?
a) synaptic vesicles
*Correct. Synaptic vesicles are structures within the synaptic knobs.*
b) synaptic nodes
c) terminal buttons
*Incorrect. Terminal buttons are the same as synaptic knobs.*
d) synaptic gaps
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (3)**
**APA=1.1**

**TB_02_41_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
A chemical found in the synaptic vesicles which, when released, has an effect on the next cell is called a _____.
a) glial cell
b) neurotransmitter
*Correct. Neurotransmitters are stored in the synaptic vesicles.*
c) precursor cell
d) synapse
*Incorrect. The synapse is the space between the synaptic knob of one cell and the dendrites of the next cell.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: b, Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (2)**
**% correct 74 a= 4 b= 74 c= 4 d= 18 *r* = .34**
**APA=1.1**

**TB_02_42_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
The term *neurotransmitter* refers to _____.
a) a chemical found in the synaptic vesicles that is released into the synapse
*Correct. Neurotransmitters are chemicals.*
b) any one of a number of chemical compounds that increase the activity of the endocrine system
c) the chemical substance found in the cell membrane
*Incorrect. The neurotransmitter is found in the synaptic vesicle.*
d) the DNA contained in the nucleus of every neuron
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (2)**
**APA=1.1**

**TB_02_43_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
The fluid-filled space between the synaptic knob of one cell and the dendrites of the next cell is called the _____.
a) receptor site
*Incorrect. Molecules that float across the synapse fit themselves into receptor sites, thus activating the next cell.*
b) synapse
*Correct. The synapse is the space between the axon of a sending neuron and the dendrites of a receiving neuron.*
c) synaptic knob
d) axon terminal
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: b, Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (1)**

**APA=1.1**

**TB_02_44_Neurons and Nerves: Building the Network_Analyze_LO 2.3, APA 1.1**
The action potential causes neurotransmitters to be released into the _____.
a) myelin sheath
b) axon
c) synapse
*Correct. Neurotransmitters are released into the synapse.*
d) synaptic vesicle
*Incorrect. Neurotransmitters are stored in the synaptic vesicle.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: c, Analyze It, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (3)**
**% correct 59 a= 8 b= 11 c= 59 d= 22 *r* = .32**
**% correct 56 a= 5 b= 16 c= 56 d= 27 *r* = .35**
**APA=1.1**

**TB_02_45_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
_____ are three-dimensional proteins on the surface of the dendrites or certain cells of the muscles and glands that are shaped to fit only certain neurotransmitters.
a) Neurotransmitters
b) Axons
c) Synaptic vesicles
*Incorrect. Neurotransmitters are stored in the synaptic vesicle.*
d) Receptor sites
*Correct. Molecules that float across the synapse fit themselves into receptor sites like keys fitting into a lock, thus activating the next cell.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: d, Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (1)**
**APA=1.1**

**TB_02_46_Neurons and Nerves: Building the Network_Understand_LO 2.3, APA 1.1**
Which structure is like a locked door that only certain neurotransmitter keys can unlock?
a) synapses
*Incorrect. Synapses are microscopic fluid-filled spaces between neurons.*
b) receptor sites
*Correct. Only certain neurotransmitters can fit into receptor sites.*
c) neural chiasms
d) response terminals
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: b, Understand the Concepts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (2)**
**APA=1.1**

**TB_02_47_Neurons and Nerves: Building the Network_Understand_LO 2.3, APA 1.1**
_____ synapses make it more likely that a neuron will send its message to other neurons, whereas _____ synapses make it less likely that a neuron will send its message.
a) Excitatory; inhibitory
*Correct. Excitatory synapses turn cells on and inhibitory ones turn cells off.*
b) Inhibitory; excitatory
*Incorrect. Inhibitory synapses turn cells off and excitatory ones turn cells on.*
c) Augmentation; depletion
d) Depletion; augmentation

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: a, Understand the Concepts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (1)**
**% correct 89 a= 89 b= 8 c= 3 d= 0 *r* = .48**
**APA=1.1**

**TB_02_48_Neurons and Nerves: Building the Network_Analyze_LO 2.3, APA 1.1**
Agonist is to antagonist as:
a) neuromodulator is to neurotransmitter.
b) reuptake is to receptor.
c) mimic is to block.
*Correct. Agonists mimic neurotransmitters by stimulating specific receptor sites, and antagonists block receptor sites.*
d) block is to mimic.
*Incorrect. This is the opposite of the correct answer.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: c, Analyze It, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (2)**
**APA=1.1**

**TB_02_49_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
Curare, a poison, works by _____.
a) blocking receptor sites and acting as an antagonist for acetylcholine
*Correct. This drug acts as an antagonist for acetylcholine.*
b) stimulating the release of excessive amounts of acetylcholine
*Incorrect. This drug inhibits the release of acetylcholine.*
c) stimulating the release of neurotransmitters
d) inhibiting the production of inhibitory neurotransmitters
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (3)**
**% correct 30 a= 30 b= 26 c= 20 d= 24 *r* = .23**
**% correct 41 a= 41 b= 24 c= 22 d= 13 *r* = .22**
**APA=1.1**

**TB_02_50_Neurons and Nerves: Building the Network_Apply_LO 2.3, APA 1.1, 1.3**
After being bitten by a black widow spider, Emma starts to convulse. This is a result of _____.
a) a lack of GABA being released into her bloodstream
*Incorrect. The correct answer is d.*
b) a resurgence of neurotransmitters overstimulating her brain stem
c) a surge of chemicals blocking the transmission of fluids to the spinal cord
d) a flood of acetylcholine releasing into the body's muscle system
*Correct. This is the result of the bite. The result can also include death.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: d, Apply What You Know, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (3)**
**APA=1.1; 1.3**

**TB_02_51_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
_____ plays a critical role as a neurotransmitter that stimulates skeletal muscles to contract.
a) Acetylcholine
*Correct. Acetylcholine is an excitatory neurotransmitter that stimulates muscles to contract.*
b) GABA
*Incorrect. GABA is an inhibitory neurotransmitter.*
c) Dopamine
d) Endorphin

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (3)**
**APA=1.1**

**TB_02_52_Neurons and Nerves: Building the Network_Apply_LO 2.3, APA 1.1, 1.3**
Sofia has been experiencing a serious memory problem. An interdisciplinary team has ruled out a range of causes and believes that a neurotransmitter is involved. Which neurotransmitter is most likely involved in this problem?

a) GABA

*Incorrect. GABA has a tranquilizing effect.*

b) dopamine
c) serotonin
d) acetylcholine

*Correct. Acetylcholine is found in a part of the brain responsible for forming new memories.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: d, Apply What You Know, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (2)**
**% correct 33 a= 0 b= 26 c=41 d= 33 *r* = .19**
**APA=1.1; 1.3**

**TB_02_53_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
Which neurotransmitter is associated with sleep, mood, and appetite?

a) GABA

*Incorrect. GABA is associated with helping calm anxiety.*

b) serotonin

*Correct. Serotonin is associated with mood, sleep, and appetite.*

c) dopamine
d) acetylcholine

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: b, Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (3)**
**% correct 60 a= 6 b= 60 c= 25 d= 8 *r* = .26**
**APA=1.1**

**TB_02_54_Neurons and Nerves: Building the Network_Apply_LO 2.3, APA 1.1, 1.3**
Ben has decided to seek medical help for mood disturbances and appetite problems. Which neurotransmitter is most likely involved in the problems Ben is experiencing?

a) GABA

*Incorrect. GABA is involved in sleep and inhibits movement but is not associated with mood or appetite.*

b) dopamine
c) serotonin

*Correct. Serotonin is associated with mood and appetite.*

d) acetylcholine

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: c, Apply What You Know, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (2)**
**APA=1.1; 1.3**

**TB_02_55_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
GABA functions as _____.

a) the major neurotransmitter involved in voluntary movements
b) an inhibitory neurotransmitter in the brain

*Correct. GABA is an inhibitory neurotransmitter.*

c) the neurotransmitter responsible for slowing intestinal activity during stress
d) the major excitatory neurotransmitter in the brain

*Incorrect. GABA is an inhibitory neurotransmitter.*

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: b, Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (3)**
**APA=1.1**

**TB_02_56_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
Endorphins are _____.
a) found where neurons meet skeletal muscles
b) less powerful than enkaphalins
c) pain-controlling chemicals
*Correct. Endorphins are pain-controlling chemicals.*
d) radically different in function from neurotransmitters
*Incorrect. Endorphins* are *neurotransmitters.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: c, Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (2)**
**% correct 74 a= 4 b= 7 c= 74 d= 15 *r* = .41**
**APA=1.1**

**TB_02_57_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
Pain-controlling chemicals in the body are called _____.
a) neural regulators
*Incorrect. Not all neural regulators are endorphins.*
b) histamines
c) androgens
d) endorphins
*Correct. Endorphins are pain-controlling chemicals.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: d, Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (1)**
**% correct 81 a= 3 b= 7 c= 8 d= 81 *r* = .42**
**APA=1.1**

**TB_02_58_Neurons and Nerves: Building the Network_Analyze_LO 2.3, APA 1.1**
Because they have similar chemical structures, morphine and heroin are able to lock into receptor sites for _____.
a) GABA
*Incorrect. Opiates are not able to lock into GABA receptor sites.*
b) serotonin
c) dopamine
d) endorphins
*Correct. Endorphins are a natural substance that has the same effect as opiates.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: d, Analyze It, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (3)**
**APA=1.1**

**TB_02_59_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
Reuptake is _____.
a) a chemical that is released into the synaptic gap
*Incorrect. Reuptake is a process.*
b) a protein molecule on the dendrite or cell body of a neuron that will interact only with specific neurotransmitters
c) a process by which neurotransmitters are taken back into the synaptic vesicles
*Correct. This is the definition of reuptake.*
d) a chemical that plays a role in learning and attention

**TOPIC: Neurons and Nerves: Building the Network**
**ANS: c, Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (2)**
**% correct 77 a= 7 b= 13 c= 77 d= 3 *r* = .41**
**APA=1.1**

**TB_02_60_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
The process by which the structure of the neurotransmitter is altered so that it can no longer act on a receptor is known as
a) enzymatic degradation.
*Correct. This is the definition of enzymatic degradation.*
b) reuptake.
*Incorrect. This is the process by which neurotransmitters are taken back into the synaptic vesicles.*
c) synaptic alteration.
d) neurotransmitter adaptation.
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and the body., (2)**
**APA=1.1**

**TB_02_61_Neurons and Nerves: Building the Network_Apply_LO 2.3, APA 1.1, 1.3**
Hannah is putting mustard on her hot dog. She realizes she has put too much and sucks up some of it back into the squeeze bottle. This process is similar to:
a) the action potential.
b) receptor site bindings.
c) binding specificity.
*Incorrect. Binding specificity refers to the fact that receptor sites are designed to receive only one specific neurotransmitter.*
d) reuptake.
*Correct. Recall take occurs when excess neurotransmitters are reabsorbed into the sending neuron.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: d, Apply What You Know, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (3)**
**APA=1.1; 1.3**

**TB_02_62_Neurons and Nerves: Building the Network_Understand_LO 2.3, APA 1.1**
How is acetylcholine removed from the synapse?
a) It is broken down by an enzyme.
*Correct. It is broken down by an enzyme.*
b) It is taken back up in the synapse.
*Incorrect. It is broken down by an enzyme.*
c) It dissipates in the surrounding body fluids.
d) Acetylcholine is one of the few neurotransmitters that is continually present in the synapse.
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: a, Understand the Concepts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (3)**
**APA=1.1**

**TB_02_63_Neurons and Nerves: Building the Network_Understand_LO 2.3, APA 1.1**
Enzymatic degradation is the process by which an excess of a neurotransmitter called _____ is removed from synapses .Other neurotransmitters can be removed via the process of reuptake.
a) dopamine
b) GABA
c) norepinephrine
*Incorrect. NE can be removed via either process.*
d) acetylcholine

*Correct. ACh cannot be removed via reuptake, and so it requires enzymatic degradation.*
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: d, Understand the Concepts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (3)**
**APA=1.1**

## An Overview of the Nervous System

### The Central Nervous System

**Learning Objective 2.4 -** Describe how the components of the central nervous system interact and how they may respond to experience or injury.

**TB_02_64_An Overview of the Nervous System_Remember_LO 2.4, APA 1.1**
The two main divisions of the nervous system are the _____ and _____.
a) brain; spinal cord
b) autonomic; somatic nervous systems
*Incorrect. The autonomic and somatic nervous systems are divisions of the peripheral nervous system.*
c) peripheral nervous system; central nervous system
*Correct. These are the two main divisions of the nervous system.*
d) glands; muscles
**TOPIC: An Overview of the Nervous System**
**ANS: c, Remember the Facts, LO=2.4** Describe how the components of the central nervous system interact and how they may respond to experience or injury**., (1)**
**% correct 73 a=8 b= 18 c= 73 d= 0 *r* = .42**
**% correct 68 a= 18 b= 13 c= 68 d= 0 *r* = .47**
**APA=1.1**

**TB_02_65_An Overview of the Nervous System_Remember_LO 2.4, APA 1.1**
The brain and spinal cord are two components of the _____.
a) central nervous system
*Correct. The brain and spinal cord are two components of the central nervous system.*
b) somatic nervous system
c) peripheral nervous system
*Incorrect. The two components of the peripheral nervous system are the autonomic and somatic nervous systems.*
d) autonomic nervous system
**TOPIC: An Overview of the Nervous System**
**ANS: a, Remember the Facts, LO=2.4** Describe how the components of the central nervous system interact and how they may respond to experience or injury**., (1)**
**% correct 100 a= 100 b= 0 c= 0 d= 0 *r* = .00**
**% correct 94 a= 94 b= 2 c= 1 d= 2 *r* = .39**
**APA=1.1**

**TB_02_66_An Overview of the Nervous System_Remember_LO 2.4, APA 1.1**
The central nervous system consists of _____.
a) the parasympathetic and sympathetic divisions
*Incorrect. These are divisions of the autonomic nervous system.*
b) the brain and spinal cord
*Correct. The brain and spinal cord are the two most basic components of the central nervous system.*
c) muscles and glands
d) sense organs and sensory neurons
**TOPIC: An Overview of the Nervous System**
**ANS: b, Remember the Facts, LO=2.4** Describe how the components of the central nervous system interact and how they may respond to experience or injury**., (2)**

**% correct 77 a= 17 b= 77 c= 0 d= 6 *r* = .24**
**% correct 82 a= 16 b= 82 c= 1 d= 2 *r* = .32**
**APA=1.1**

**TB_02_67_An Overview of the Nervous System_Remember_LO 2.4, APA 1.1**
Which part of the nervous system takes the information received from the senses, makes sense out of it, makes decisions, and sends commands out to the muscles and the rest of the body?
a) spinal cord
*Incorrect. The spinal cord carries messages to and from the body to the brain.*
b) brain
*Correct. That is the responsibility of the brain.*
c) reflexes
d) interneurons
**TOPIC: An Overview of the Nervous System**
**ANS: b, Remember the Facts, LO=2.4** Describe how the components of the central nervous system interact and how they may respond to experience or injury.**, (1)**
**% correct 85 a= 7 b= 85 c= 1 d= 7 *r* = .21**
**APA=1.1**

**TB_02_68_An Overview of the Nervous System_Analyze_LO 2.4, APA 1.1**
Lufti thinks his high school is similar to the nervous system. The main hallway that runs from the front door straight through the main building is similar to the _____ nervous system, while the hallways that connect the various wings are similar to the _____ nervous system.
a) somatic; autonomous
b) autonomous; somatic
c) central; peripheral
*Correct. The central nervous system, consisting of the brain and spinal cord, is in the center of the body, while the peripheral nervous system extends form the center outward.*
d) peripheral; central
*Incorrect. It is the central nervous system that is in the center of the body, while the peripheral nervous system extends from the center outward.*
**TOPIC: An Overview of the Nervous System**
**ANS: c, Analyze What You Know, LO=2.4** Describe how the components of the central nervous system interact and how they may respond to experience or injury., (3)
APA: 1.1

**TB_02_69_An Overview of the Nervous System_Remember_LO 2.4, APA 1.1**
The long bundle of neurons that carries messages between the body and the brain and is responsible for very fast, lifesaving reflexes is called the _____.
a) spinal cord
*Correct. The spinal cord carries messages between the body and the brain.*
b) axon
*Incorrect. The axon is a structure of the neuron.*
c) reflexes
d) interneurons
**TOPIC: An Overview of the Nervous System**
**ANS: a, Remember the Facts, LO=2.4** Describe how the components of the central nervous system interact and how they may respond to experience or injury.**, (1)**
**APA=1.1**

**TB_02_70_An Overview of the Nervous System_Remember_LO 2.4, APA 1.1**
Which of the following is a long bundle of neurons that functions as a carrier of messages between the brain and the body and is responsible for certain reflexes?
a) spinal cord
*Correct. The spinal cord carries messages between the body and the brain.*
b) cerebellum

c) somatic nervous system

*Incorrect. The somatic nervous system carries information from the senses to the central nervous system (CNS) and from the CNS to voluntary muscles of the body.*

d) amygdala

**TOPIC: An Overview of the Nervous System**

**ANS: a, Remember the Facts, LO=2.4** Describe how the components of the central nervous system interact and how they may respond to experience or injury**., (2)**

**APA=1.1**

**TB_02_71_An Overview of the Nervous System_Remember_LO 2.4, APA 1.1**

Which of the following are the three basic types of neurons?

a) reflexes, sensory neurons, motor neurons

*Incorrect. Reflexes are not a type of neuron.*

b) sensory neurons, motor neurons, stem cells

c) motor neurons, stem cells, reflexes

d) interneurons, sensory neurons, motor neurons

*Correct. All of these are neurons.*

**TOPIC: An Overview of the Nervous System**

**ANS: d, Remember the Facts, LO=2.4** Describe how the components of the central nervous system interact and how they may respond to experience or injury**., (1)**

**% correct 89 a= 3 b= 7 c= 0 d= 89 *r* = .36**

**% correct 79 a= 13 b= 8 c= 0 d= 79 *r* = .31**

**APA=1.1**

**TB_02_72_An Overview of the Nervous System_Remember_LO 2.4, APA 1.1**

Neurons that carry information from the senses to the spinal cord are called _____.

a) motor neurons

b) interneurons

*Incorrect. Interneurons connect sensory neurons to the motor neurons.*

c) sensory neurons

*Correct. Sensory neurons carry information from the senses to the spinal cord.*

d) reflexes

**TOPIC: An Overview of the Nervous System**

**ANS: c, Remember the Facts, LO=2.4** Describe how the components of the central nervous system interact and how they may respond to experience or injury**., (2)**

**% correct 75 a= 19 b= 5 c= 75 d= 0 *r* = .32**

**% correct 80 a= 11 b= 9 c= 80 d= 1 *r* = .28**

**APA=1.1**

**TB_02_73_An Overview of the Nervous System_Apply_LO 2.4, APA 1.1, 1.3**

Emilia stepped on a piece of glass and quickly pulled her foot away from that sharp object. Which of the following are responsible for sending a message to the muscles in Emilia's foot, resulting in her pulling her foot away from the piece of glass?

a) motor neurons

*Correct. Motor neurons carry messages from the central nervous system to the muscles of the body.*

b) interneurons

*Incorrect. Interneurons connect the sensory neurons to the motor neurons.*

c) sensory neurons

d) reflexes

**TOPIC: An Overview of the Nervous System**

**ANS: a, Apply What You Know, LO=2.4** Describe how the components of the central nervous system interact and how they may respond to experience or injury**., (3)**

**% correct 58 a= 58 b= 2 c= 18 d= 521 *r* = .27**

**APA=1.1; 1.3**

**TB_02_74_An Overview of the Nervous System_Remember_LO 2.4, APA 1.1**

Neurons found in the center of the spinal cord that receive information from the sensory neurons and send commands to the muscles through the motor neurons are called _____.

a) motor neurons

*Incorrect. Motor neurons carry messages from the central nervous system to the muscles of the body.*

b) interneurons

*Correct. Interneurons connect the sensory neurons to the motor neurons.*

c) sensory neurons

d) reflexes

**TOPIC: An Overview of the Nervous System**

**ANS: b, Remember the Facts, LO=2.4** Describe how the components of the central nervous system interact and how they may respond to experience or injury**., (2)**

**APA=1.1**

**TB_02_75_An Overview of the Nervous System_Understand_LO 2.4, APA 1.1**

Which of the following are responsible for acting as a facilitator of communication between neurons?

a) motor neurons

*Incorrect. Motor neurons carry messages from the central nervous system to the muscles of the body.*

b) interneurons

*Correct. Interneurons connect the sensory neurons to the motor neurons.*

c) sensory neurons

d) reflexes

**TOPIC: An Overview of the Nervous System**

**ANS: b, Understand the Concepts, LO=2.4** Describe how the components of the central nervous system interact and how they may respond to experience or injury**., (1)**

**% correct 80 a= 8 b= 80 c= 8 d= 3 *r* = .37**

**APA=1.1**

**TB_02_76_An Overview of the Nervous System_Apply_LO 2.4, APA 1.1, 1.3**

Mia put her hand on a hot stove. Which neuron is responsible for sending a pain message up her spinal column, where it would then enter into the main area of the cord?

a) motor neuron

b) interneuron

*Incorrect. Sensory neurons carry information from the senses to the spinal cord.*

c) sensory neuron

*Correct. Sensory neurons carry information from the senses to the spinal cord.*

d) reflex

**TOPIC: An Overview of the Nervous System**

**ANS: c, Apply What You Know, LO=2.4** Describe how the components of the central nervous system interact and how they may respond to experience or injury**., (1)**

**% correct 90 a= 5 b= 3 c= 90 d= 1 *r* = .27**

**APA=1.1; 1.3**

**TB_02_77_An Overview of the Nervous System_Analyze_LO 2.4, APA 1.1, 1.3**

Why do many reflexes, such as pulling your hand away from a hot iron, happen so quickly?

a) They involve the neurotransmitter GABA rather than dopamine.

b) The message involved does not have to go all the way to the brain.

*Correct. The message goes to the central area of the spinal cord and not up to the brain.*

c) The speed of processing is faster in the frontal lobes than in the occipital lobes.

d) The path that reflexes follow to the brain is direct and does not involve any neurotransmitters.

*Incorrect. The message involved does not have to go all the way to the brain.*

**TOPIC: An Overview of the Nervous System**

**ANS: b, Analyze It, LO=2.4** Describe how the components of the central nervous system interact and how they may respond to experience or injury**., (3)**

**% correct 49 a= 17 b= 49 c= 14 d= 21 *r* = .51**

**APA=1.1; 1.3**

**TB_02_78_An Overview of the Nervous System_Apply_LO 2.4, APA 1.1, 1.3**
Jonas suffered a brain injury as a result of hitting his head while waterskiing. One of the problems that developed was that Jonas could not pronounce certain words correctly for a long period of time until he had extensive speech therapy; he can now speak as he did before his accident. This is an example of the brain's _____, which allowed the structure and function of his brain cells to change and adjust to the trauma.

a) adaptology
b) stagnation
c) neuroplasticity

*Correct. This allowed Jonas's brain to adapt after the trauma.*

d) reflex arc

*Incorrect. Neuroplasticity accounts for Jonas's brain to allow him to speak correctly despite damage.*

**TOPIC: An Overview of the Nervous System**
**ANS: c, Apply What You Know, LO=2.4** Describe how the components of the central nervous system interact and how they may respond to experience or injury**., (2)**
**APA=1.1; 1.3**

**TB_02_79_An Overview of the Nervous System_Understand_LO 2.4, APA 1.1**
Neuroplasticity is most evident in which of the following circumstances?

a) during the elderly years

*Incorrect. As your authors point out, plasticity is higher during childhood than in later years.*

b) when we learn something new or store new information

*Correct. Learning or storing new information would cause the brain to change its structure slightly, which demonstrates plasticity.*

c) when we are trying to undo previous pruning
d) when reuptake of excess neurotransmitters is taking place

**TOPIC: An Overview of the Nervous System Neurons and Nerves: Building the Network**
**ANS: b, Understand the Concepts, LO=2.4** Describe how the components of the central nervous system interact and how they may respond to experience or injury**., (3)**
**APA=1.1**

## The Peripheral Nervous System: Nerves on the Edge

**TB_02_80_An Overview of the Nervous System_Understand_LO 2.4, APA 1.1**
After stroke damage, Chao underwent physical therapy to relearn how to use the affected area. This is an example of the restorative process of

a) neuroreconditioning.
b) neurogenesis.

*Incorrect. Neurogenesis refers to the formation of new neurons.*

c) neuroplasticity.

*Correct. Neuroplasticity is the ability of the brain to change in response to experience.*

d) stem cell transplant.

**TOPIC: An Overview of the Nervous System Neurons and Nerves: Building the Network**
**ANS: c, Understand the Concepts, LO=2.4** Describe how the components of the central nervous system interact and how they may respond to experience or injury., (2)
APA=1.1

## The Peripheral Nervous System

**Learning Objective 2.5 -** Differentiate the roles of the somatic and autonomic nervous systems.

**TB_02_81_An Overview of the Nervous System_Remember_LO 2.5, APA 1.1**
Which statement is NOT true about the peripheral nervous system (PNS)?

a) The PNS consists of the brain and spinal cord.

*Correct. These are parts of the central nervous system (CNS).*

b) The PNS consists of the nerves and neurons not in the central nervous system (CNS).
*Incorrect. This is an accurate definition of the PNS.*
c) The PNS allows the brain and spinal cord to coordinate with sensory systems.
d) The PNS allows the brain and spinal cord to coordinate with muscles and glands in the body.
**TOPIC: An Overview of the Nervous System**
**ANS: a, Remember the Facts, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (2)**
**APA=1.1**

**TB_02_82_An Overview of the Nervous System_Remember_LO 2.5, APA 1.1**
The peripheral nervous system consists of _____.
a) all of the nerve cells that are not in the brain and spinal cord
*Correct. The peripheral nervous system consists of all the nerve cells that are not in the brain and spinal cord.*
b) all of the nerves in the brain and the spinal cord
*Incorrect. The central nervous system consists of the brain and spinal cord.*
c) the spinal cord and autonomic system
d) the brain and the autonomic system
**TOPIC: An Overview of the Nervous System**
**ANS: a, Remember the Facts, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (2)**
**% correct 69 a= 69 b= 6 c= 15 d= 10 *r* = .45**
**APA=1.1**

**TB_02_83_An Overview of the Nervous System_Understand_LO 2.5, APA 1.1**
The division of the nervous system that allows the brain and the spinal cord to communicate with the sensory systems of the eyes, ears, skin, and mouth, and allows the brain and spinal cord to control the muscles and glands of the body is called the _____.
a) peripheral nervous system
*Correct. The peripheral nervous system allows the brain and spinal cord to communicate with the sensory systems and control the muscles and glands.*
b) central nervous system
*Incorrect. The peripheral nervous system enables the central nervous system, which consists of the brain and spinal cord, to communicate with the sensory systems and control the muscles and glands.*
c) endocrine system
d) secondary nervous system
**TOPIC: An Overview of the Nervous System**
**ANS: a, Understand the Concepts, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (2)**
**% correct 69 a= 69 b= 22 c= 7 d= 1 *r* = .43**
**APA=1.1**

**TB_02_84_An Overview of the Nervous System_Remember_LO 2.5, APA 1.1**
The peripheral nervous system consists of the _____ and _____ nervous systems.
a) autonomic; somatic
*Correct. The peripheral nervous system consists of the autonomic and somatic nervous systems.*
b) autonomic; sympathetic
c) parasympathetic; somatic
d) parasympathetic; sympathetic
*Incorrect. These are the two divisions of the autonomic nervous system.*
**TOPIC: An Overview of the Nervous System**
**ANS: a, Remember the Facts, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (3)**
**% correct 53 a= 53 b= 7 c= 5 d= 35 *r* = .33**
**% correct 57 a= 57 b= 11 c= 7 d= 25 *r* = .40**
**APA=1.1**

**TB_02_85_An Overview of the Nervous System_Remember_LO 2.5, APA 1.1**
Voluntary muscles are controlled by the _____ nervous system.
a) somatic
*Correct. The somatic nervous system controls voluntary muscles.*
b) autonomic
*Incorrect. The autonomic nervous system controls involuntary muscles.*
c) sympathetic
d) parasympathetic
**TOPIC: An Overview of the Nervous System**
**ANS: a, Remember the Facts, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (2)**
**% correct 69 a= 69 b= 17 c=11 d= 3 *r* = .46**
**APA=1.1**

**TB_02_86_An Overview of the Nervous System_Understand_LO 2.5, APA 1.1**
The actions of the somatic nervous system is to the actions of the autonomous nervous system as:
a) voluntary is to involuntary.
*Correct. The somatic system represents voluntary actions, while the autonomic nervous system represents involuntary.*
b) central is to peripheral.
*Incorrect. Both the somatic and autonomic nervous systems are parts of the peripheral nervous system.*
c) inner to outer.
d) sympathetic is to parasympathetic.
**TOPIC: An Overview of the Nervous System**
**ANS: a, Understand the Concepts, LO=2.5, Differentiate the roles of the somatic and autonomic nervous system., (2)**
**APA=1.1**
**TB_02_87_An Overview of the Nervous System_Remember_LO 2.5, APA 1.1**
The subdivision of the peripheral nervous system that is made up of all nerves carrying messages from the senses to the central nervous system and all nerves carrying messages from the central nervous system to skeletal muscles is called the _____.
a) autonomic nervous system
*Incorrect. The autonomic nervous system consists of nerves that control all of the involuntary muscles, organs, and glands.*
b) parasympathetic nervous system
c) somatic nervous system
*Correct. This describes the somatic nervous system.*
d) central nervous system
**TOPIC: An Overview of the Nervous System**
**ANS: c, Remember the Facts, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (3)**
**% correct 59 a= 25 b= 13 c= 59 d= 3 *r* = .46**
**APA=1.1**

**TB_02_88_An Overview of the Nervous System_Remember_LO 2.5, APA 1.1**
In the peripheral nervous system, _____ carry messages from special sense receptors in the skin, muscles, and other internal and external sense organs to the spinal cord.
a) autonomic nerves
b) sensory pathway neurons
*Correct. Sensory pathway neurons carry messages from sense receptors.*
c) motor pathway neurons
*Incorrect. Motor pathway neurons travel from the central nervous system to the voluntary muscles.*
d) autonomic neurons
**TOPIC: An Overview of the Nervous System**
**ANS: b, Remember the Facts, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (1)**

**APA=1.1**

**TB_02_89_An Overview of the Nervous System_Apply_LO 2.5, APA 1.1, 1.3**
Elias is typing on the computer keyboard. The motion of his fingers on the keys is probably being controlled by the _____.

a) autonomic nervous system
b) sensory pathway neurons

*Incorrect. These neurons make up the nerves that come from the sensory organs.*

c) motor pathway neurons

*Correct. Movements of fingers are associated with motor pathway neurons, which control voluntary muscles.*

d) autonomic neurons

**TOPIC: An Overview of the Nervous System**
**ANS: c, Apply What You Know, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (3)**
**APA=1.1; 1.3**

**TB_02_90_An Overview of the Nervous System_Understand_LO 2.5, APA 1.1**
Every deliberate action you make, such as pedaling a bike, walking, scratching, or smelling a flower, involves neurons in the _____ nervous system.

a) sympathetic
b) somatic

*Correct. The somatic nervous system controls voluntary muscle movement.*

c) parasympathetic
d) autonomic

*Incorrect. The autonomic nervous system consists of nerves that control all of the involuntary muscles, organs, and glands.*

**TOPIC: An Overview of the Nervous System**
**ANS: b, Understand the Concepts, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (3)**
**% correct 50 a= 12 b= 50 c= 12 d= 25 *r* = .23**
**% correct 60 a= 14 b= 60 c= 11 d= 14 *r* = .21**
**APA=1.1**

**TB_02_91_An Overview of the Nervous System_Apply_LO 2.5, APA 1.1, 1.3**
As she walks out of the living room, Lina turns out the light. In this example, Lina's _____ is active.

a) sympathetic nervous system
b) parasympathetic nervous system
c) autonomic nervous system

*Incorrect. Turning out the light requires voluntary muscle movement.*

d) somatic nervous system

*Correct. Turning out the light requires voluntary muscle movement.*

**TOPIC: An Overview of the Nervous System**
**ANS: d, Apply What You Know, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (3)**
**% correct 48 a= 8 b= 14 c= 30 d= 48 *r* = .42**
**APA=1.1; 1.3**

**TB_02_92_An Overview of the Nervous System_Remember_LO 2.5, APA 1.1**
Involuntary muscles are controlled by the _____ nervous system.

a) somatic

*Incorrect. The somatic nervous system controls voluntary muscles.*

b) autonomic

*Correct. The autonomic nervous system controls involuntary muscles like the heart, stomach, and intestines.*

c) sympathetic
d) parasympathetic

**TOPIC: An Overview of the Nervous System**

**ANS: b, Remember the Facts, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (2),**
**% correct 64 a= 14 b= 64 c= 14 d= 9 *r* = .27**
**APA=1.1**

**TB_02_93_An Overview of the Nervous System_Remember_LO 2.5, APA 1.1**
The subdivision of the peripheral nervous system that consists of nerves that control all of the involuntary muscles, organs, and glands is called the _____ nervous system.
a) somatic
*Incorrect. The somatic nervous system controls voluntary muscles.*
b) autonomic
*Correct. The autonomic nervous system controls involuntary muscles and glands.*
c) sympathetic
d) parasympathetic
**TOPIC: An Overview of the Nervous System**
**ANS: b, Remember the Facts, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (2)**
**% correct 71 a= 10 b= 71 c= 10 d= 7 *r* = .26**
**APA=1.1**

**TB_02_94_An Overview of the Nervous System_Apply_LO 2.5, APA 1.1, 1.3**
When you see someone you have a crush on and your heart pounds, your hands get sweaty, and your cheeks feel hot, your _____ nervous system is active.
a) skeletal
b) spinal
c) autonomic
*Correct. The autonomic nervous system controls involuntary muscles and glands.*
d) somatic
*Incorrect. The somatic nervous system controls voluntary muscles.*
**TOPIC: An Overview of the Nervous System**
**ANS: c, Apply What You Know, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (2)**
**APA=1.1; 1.3**

**TB_02_95_An Overview of the Nervous System_Remember_LO 2.5, APA 1.1**
The autonomic nervous system has two divisions: the _____ and the _____.
a) central; peripheral
*Incorrect. The two divisions of the autonomic nervous system are the sympathetic and parasympathetic nervous systems.*
b) sympathetic; parasympathetic
*Correct. These are the divisions of the autonomic nervous system.*
c) receptors; effectors
d) limbic; endocrine
**TOPIC: An Overview of the Nervous System**
**ANS: b, Remember the Facts, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (1)**
**% correct 96 a= 4 b= 96 c= 0 d= 0 *r* = .19**
**% correct 91 a= 6 b= 91 c= 1 d= 3 *r* = .22**
**APA=1.1**

**TB_02_96_An Overview of the Nervous System_Remember_LO 2.5, APA 1.1**
Which component of the nervous system mobilizes the body in times of stress?
a) central
b) somatic
c) sympathetic
*Correct. The sympathetic nervous system mobilizes the body in times of stress.*

d) parasympathetic

*Incorrect. The parasympathetic nervous system restores the body to normal functioning after arousal.*

**TOPIC: An Overview of the Nervous System**

**ANS: c, Remember the Facts, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (2)**

**% correct 60 a= 8 b= 12 c= 60 d= 20 *r* = .37**

**% correct 69 a= 3 b= 10 c= 69 d= 17 *r* = .47**

**APA=1.1**

**TB_02_97_An Overview of the Nervous System_Remember_LO 2.5, APA 1.1**

The part of the autonomic nervous system that is responsible for reacting to stressful events and bodily arousal is called the _____ nervous system.

a) central
b) somatic
c) sympathetic

*Correct. The sympathetic nervous system is responsible for reacting to stressful events and bodily arousal.*

d) parasympathetic

*Incorrect. The parasympathetic nervous system restores the body to normal functioning after arousal.*

**TOPIC: An Overview of the Nervous System**

**ANS: c, Remember the Facts, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (2)**

**% correct 66 a= 5 b= 9 c= 66 d= 19 *r* = .40**

**% correct 79 a= 1 b= 5 c= 79 d= 14 *r* = .40**

**APA=1.1**

**TB_02_98_An Overview of the Nervous System_Apply_LO 2.5, APA 1.1, 1.3**

As Himari is walking across campus, a car swerves toward her. Her heart races and sweat breaks out as she jumps out of harm's way. This mobilization of energy is due to the action of Himari's _____.

a) somatic nervous system
b) skeletal nervous system
c) parasympathetic nervous system

*Incorrect. The parasympathetic nervous system restores the body to normal functioning after arousal.*

d) sympathetic nervous system

*Correct. The sympathetic nervous system is responsible for reacting to stressful events and bodily arousal.*

**TOPIC: An Overview of the Nervous System**

**ANS: d, Apply What You Know, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (2)**

**APA=1.1; 1.3**

**TB_02_99_An Overview of the Nervous System_Apply_LO 2.5, APA 1.1, 1.3**

While driving a little too fast, you notice a police car rapidly approaching you with the lights flashing. The sight of the police car when you are speeding activates your _____ nervous system.

a) somatic
b) central
c) parasympathetic

*Incorrect. The parasympathetic division restores the body to normal functioning.*

d) sympathetic

*Correct. The sympathetic division gets the body ready to deal with stressful situations.*

**TOPIC: An Overview of the Nervous System**

**ANS: d, Apply What You Know, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (2)**

**APA= 1.1, 1.3**

**TB_02_100_An Overview of the Nervous System_Apply_LO 2.5, APA 1.1, 1.3**

Awoken by a noise, Ulrich's heart rate begins to race until he realizes his cat has knocked a picture off of the end table. His heart rate returns to normal due to the activation of the:

a) somatic nervous system.
b) central nervous system.
c) parasympathetic nervous system.
*Correct. The parasympathetic nervous system restores the body to normal functioning.*
d) sympathetic nervous system.
*Incorrect. The sympathetic division gets the body ready to deal with stressful situations.*
**TOPIC: An Overview of the Nervous System**
**ANS: c, Apply What You Know, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (2)**
**APA-1.1, 1.3**

**TB_02_101_An Overview of the Nervous System_Remember_LO 2.5, APA 1.1**
The branch of the autonomic nervous system that restores the body to normal functioning after arousal and is responsible for day-to-day functioning of the organs and glands is called the _____.
a) spinal cord
b) somatic nervous system
c) sympathetic nervous system
*Incorrect. The sympathetic nervous system is responsible for reacting to stressful events and bodily arousal.*
d) parasympathetic nervous system
*Correct. The parasympathetic nervous system restores the body to normal functioning after arousal.*
**TOPIC: An Overview of the Nervous System**
**ANS: d, Remember the Facts, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (2)**
**% correct 66 a= 2 b= 9 c= 23 d= 66 *r* = .37**
**APA=1.1**

**TB_02_102_An Overview of the Nervous System_Apply_LO 2.5, APA 1.1, 1.3**
Li Wei is studying alone in his room late at night when he hears a loud noise downstairs. His heartbeat increases significantly and his breathing becomes shallow. He wonders if a burglar has entered the house and decides to investigate. When he gets downstairs, he discovers his cat has knocked over a plant stand. His body begins to relax and return to normal. Which part of his nervous system was responsible for putting Li Wei's body on "high alert" when he did not know the source of the sound?
a) spinal cord
b) somatic nervous system
c) sympathetic nervous system
*Correct. The sympathetic nervous system mobilizes the body in times of stress.*
d) parasympathetic nervous system
*Incorrect. The parasympathetic nervous system restores the body to normal functioning after arousal.*
**TOPIC: An Overview of the Nervous System**
**ANS: c, Apply What You Know, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (2)**
**APA=1.1; 1.3**

**TB_02_103_An Overview of the Nervous System_Apply_LO 2.5, APA 1.1, 1.3**
Malcolm is studying alone in his room late at night when he hears a loud noise downstairs. His heartbeat increases significantly and his breathing becomes shallow. He wonders if a burglar has entered the house and decides to investigate. When he gets downstairs, he discovers his cat has knocked over a plant stand. His body begins to relax and return to normal. Which part of his nervous system is responsible for returning Malcolm to a normal state?
a) spinal cord
b) somatic nervous system
c) sympathetic nervous system
*Incorrect. The sympathetic nervous system mobilizes the body in times of stress.*
d) parasympathetic nervous system
*Correct. The parasympathetic nervous system restores the body to normal functioning after arousal.*
**TOPIC: An Overview of the Nervous System**
**ANS: d, Apply What You Know, LO=2.5 Differentiate the roles of the somatic and autonomic nervous**

**systems., (2)**
**APA=1.1; 1.3**

## The Endocrine Glands

### The Pituitary: Master of the Hormonal Universe

**Learning Objective 2.6 -** Explain why the pituitary gland is known as the "master gland."

**TB_02_104_ The Endocrine Glands_Understand_LO 2.6, APA 1.1**
The idea that the pituitary gland is the "master gland":
a) is completely accurate and appropriate.
*Incorrect. The pituitary gland is controlled by the hypothalamus, so to suggest that calling it the master gland is completely accurate is something of a misnomer.*
b) is completely inaccurate since it doesn't control any other glands or related structures.
c) is true; yet, it is still controlled by the brain.
*Correct. The pituitary gland can be thought of as the master of the endocrine system, but it is still controlled by the hypothalamus in the brain.*
d) is a matter of debate, since many other researchers refer to the adrenal gland as the "master gland."
**TOPIC: The Endocrine Glands**
**ANS: c, Understand the Concepts, LO=2.6 Explain why the pituitary gland is known as the "master gland.", (2)**
**APA=1.1**

**TB_02_105_ The Endocrine Glands_Remember_LO 2.6, APA 1.1**
Which endocrine gland controls all of the other endocrine glands?
a) thyroid
*Incorrect. The thyroid gland does not control other endocrine glands.*
b) adrenal
c) thymus
d) pituitary
*Correct. The pituitary gland controls all other endocrine glands.*
**TOPIC: The Endocrine Glands**
**ANS: d, Remember the Facts, LO=2.6 Explain why the pituitary gland is known as the "master gland.", (1)**
**APA=1.1**

**TB_02_106_ The Endocrine Glands_Understand_LO 2.6, APA 1.1**
_____ are the chemicals that communicate in the nervous system, while _____ are the chemicals in the endocrine system.
a) Neurotransmitters; hormones
*Correct. Both neurotransmitters and hormones are chemicals that communicate; neurotransmitters in the nervous system and hormones in the endocrine system.*
b) Neurons; glands
*Incorrect. The neurons are the cells that communicate via neurotransmitters in the nervous system while the glands communicate through hormones in the endocrine system.*
c) Synapses; receptors
d) Dendrites; organs
**TOPIC: The Endocrine Glands**
**ANS: a, Understand the Concepts, LO=2.6 Explain why the pituitary gland is known as the "master gland.", (2)**
**APA 1.1**

**TB_02_107_ The Endocrine Glands_Remember_LO 2.6, APA 1.1**
Which hormone has been dubbed the "love hormone" because of its role in bonding and affection between people?
a) oxytocin
*Correct. The role of oxytocin in bonding has been a very popular topic in research.*
b) progesterone
c) thyroxin
d) estrogen
*Incorrect. This is a primary female hormone, but not the best answer.*
**TOPIC: The Endocrine Glands**
**ANS: a, Remember the Facts, LO=2.6 Explain why the pituitary gland is known as the "master gland.", (2)**
**APA=1.1**

## Other Endocrine Glands

**Learning Objective 2.7 -** Recall the role of various endocrine glands.

**TB_02_108_ The Endocrine Glands_Remember_LO 2.7, APA 1.1**
Hormones are chemicals that are secreted and go directly into _____.
a) the bloodstream
*Correct. Hormones are secreted by endocrine glands and go into the bloodstream.*
b) specific organs
c) nerve endings
d) the brain
*Incorrect. Hormones go directly into the bloodstream.*
**TOPIC: The Endocrine Glands**
**ANS: a, Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (3)**
**% correct 59 a= 59 b= 12 c= 8 d= 21 *r* = .42**
**APA=1.1**

**TB_02_109_ The Endocrine Glands_Remember_LO 2.7, APA 1.1**
Endocrine glands _____.
a) secrete hormones directly into the bloodstream
*Correct. Endocrine glands do secrete hormones.*
b) are chemicals released into the bloodstream
*Incorrect. Glands are not chemicals; they are organs that secrete chemicals.*
c) are an extensive network of specialized cells
d) are a thin layer of cells coating the axons
**TOPIC: The Endocrine Glands**
**ANS: a, Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (1)**
**% correct 91 a= 91 b= 5 c= 2 d= 2 *r* = .56**
**APA=1.1**

**TB_02_110_ The Endocrine Glands_Remember_LO 2.7, APA 1.1**
The hormone released by the pineal gland that reduces body temperature and prepares you for sleep is _____.
a) melatonin
*Correct. The pineal gland secretes melatonin.*
b) DHEA
c) parathormone
d) thyroxin
*Incorrect. The thyroid secretes thyroxin, which regulates metabolism.*
**TOPIC: The Endocrine Glands**
**ANS: a, Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (1)**
**APA=1.1**

**TB_02_111_ The Endocrine Glands_Apply_LO 2.7, APA 1.1, 1.3**
Fadhlan is overweight. His physician has decided to test him to see if there is a problem with the regulation of his _____. Which endocrine gland will be the focus of diagnostic testing?

a) adrenal glands

*Incorrect. The adrenal glands have nothing to do with metabolism. They secrete sex hormones and hormones that regulate salt intake.*

b) thymus

c) thyroid

*Correct. The thyroid gland regulates metabolism.*

d) pancreas

**TOPIC: The Endocrine Glands**
**ANS: c, Apply What You Know, LO=2.7 Recall the role of various endocrine glands., (3)**
**APA=1.1; 1.3**

**TB_02_112_ The Endocrine Glands_Apply_LO 2.7, APA 1.1, 1.3**
Gita just received the results of a complete physical that found her body is not producing enough insulin. Which of the following endocrine glands is affecting her body's ability to produce insulin?

a) adrenal

*Incorrect. The adrenal glands have nothing to do with insulin. They secrete sex hormones and hormones that regulate salt intake.*

b) thymus

c) thyroid

d) pancreas

*Correct. The pancreas controls the level of blood sugar in the body.*

**TOPIC: The Endocrine Glands**
**ANS: d, Apply What You Know, LO=2.7 Recall the role of various endocrine glands., (3)**
**APA=1.1; 1.3**

**TB_02_113_ The Endocrine Glands_Remember_LO 2.7, APA 1.1**
The sex glands, which secrete hormones that regulate sexual development and behavior as well as reproduction, are called _____.

a) the pancreas

b) the gonads

*Correct. Gonads are sex glands.*

c) cortisol

*Incorrect. Cortisol is a hormone that is released when the body experiences stress.*

d) the hypothalamus

**TOPIC: The Endocrine Glands**
**ANS: b, Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (1)**
**% correct 87 a= 1 b= 87 c= 3 d= 9 *r* = .50**
**APA=1.1**

**TB_02_114_ The Endocrine Glands_Remember_LO 2.7, APA 1.1**
The _____, located on the top of the kidneys, secrete(s) hormones that regulate salt intake, control stress reactions, and provide a secondary source of sex hormones affecting the sexual changes that occur during adolescence.

a) adrenal glands

*Correct. The adrenal glands secrete sex hormones and hormones that regulate salt intake.*

b) thymus

c) thyroid gland

d) pancreas

*Incorrect. The pancreas is primarily responsible for regulation of glucose in the blood.*

**TOPIC: The Endocrine Glands**
**ANS: a, Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (1)**
**APA=1.1**

**TB_02_115_ The Endocrine Glands_Apply_LO 2.7, APA 1.1, 1.3**
Lorenzo is very anxious over an upcoming exam. Consequently, his adrenal glands will probably produce _____.

a) more testosterone
b) less estrogen

*Incorrect. Nothing about Joe's circumstance would result in a change in production of estrogen.*

c) more cortisol

*Correct. Stressful or tense situations cause the adrenal glands to produce more cortisol in the adrenal glands.*

d) less cortisol

**TOPIC: The Endocrine Glands**
**ANS: c, Apply What You Know, LO=2.7 Recall the role of various endocrine glands., (3)**
**APA=1.1; 1.3**

## Hormones and Stress

**Learning Objective 2.8 – Describe how the autonomic nervous system and body are impacted by stress.**

**TB_02_116_ The Endocrine Glands_Remember_LO 2.8, APA 1.1**
Which division of the nervous system reacts when the human body is subjected to stress?

a) parasympathetic

*Incorrect. The parasympathetic nervous system returns the body to normal after a stressful period.*

b) somatic
c) sympathetic

*Correct. The sympathetic nervous system causes heart rate to increase, digestion to slow down, and energy to be sent to the muscles to help deal with whatever action the stressful situation requires.*

d) central

**TOPIC: The Endocrine Glands**
**ANS: c, Remember the Facts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (1)**
**% correct 81 a= 12 b= 4 c= 81 d= 1 *r* = .52**
**APA=1.1**

**TB_02_117_ The Endocrine Glands Understand_LO 2.8_APA 1.1**
Which divisions of the nervous system are associated with the general adaptation syndrome?

a) somatic and parasympathetic

*Incorrect. The somatic nervous system does not play a role in stress reactions.*

b) autonomic and sympathetic
c) sympathetic and parasympathetic

*Correct. The sympathetic nervous and the parasympathetic systems are associated with the general adaptation syndrome.*

d) central and somatic

**TOPIC: The Endocrine Glands**
**ANS: c, Understand the Concepts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (3)**
**% correct 38 a= 3 b= 38 c= 38 d= 30 *r* = .21**
**APA=1.1**

**TB_02_118_ The Endocrine Glands_Remember_LO 2.8_APA 1.2**
Which researcher is credited with proposing the general adaptation syndrome?

a) Selye

*Correct. Hans Selye proposed the general adaptation syndrome.*

b) Berkowitz
c) Holmes and Rahe

*Incorrect. Holmes and Rahe developed the Social Readjustment Rating Scale. Selye proposed the general*

*adaptation syndrome.*

d) Lazarus

**TOPIC: The Endocrine Glands**
**ANS: a, Remember the Facts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (1)**
**% correct 85 a= 85 b= 7 c= 2 d= 7 *r* = .23**
**APA=1.2**

**TB_02_119_ The Endocrine Glands_Remember _LO 2.8_APA 1.1**
During the alarm stage of the general adaptation syndrome, _____.

a) the central and somatic nervous systems are activated
b) synaptic activity and the somatic nervous system activate to send messages from the CNS to muscles
c) the sympathetic nervous system is activated and adrenal glands release hormones

*Correct. During the alarm stage, the sympathetic nervous system becomes activated.*

d) neurotransmitter levels and the central nervous system are activated

*Incorrect. The sympathetic nervous system is activated during the alarm stage.*

**TOPIC: The Endocrine Glands**
**ANS: c, Remember the Facts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (2)**
**% correct 82 a= 8 b= 5 c= 82 d= 5 *r* = .42**
**% correct 85 a= 6 b= 8 c= 85 d= 2 *r* = .31**
**APA=1.1**

**TB_02_120_ The Endocrine Glands _Understand_LO 2.8_APA 1.1**
During the alarm stage of the general adaptation syndrome, all of the following EXCEPT _____ are common physiological reactions to stress.

a) headaches
b) nausea
c) fever

*Incorrect. The stimulation of the sympathetic nervous system can induce a fever.*

d) hemorrhaging

*Correct. The stimulation of the sympathetic nervous system can cause headaches, nausea, or fevers, but hemorrhaging is not an associated physical response.*

**TOPIC: The Endocrine Glands**
**ANS: d, Understand the Concepts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (1)**
**APA=1.1**

**TB_02_121_ The Endocrine Glands _Apply_LO 2.8_APA 1.1, 1.3**
Saadat is walking to the front of the classroom in preparation for his class presentation. He notices his heart starts to beat fast, his palms are sweaty, and he has a general sense of increase in energy. According to the general adaptation syndrome, which phase of the stress response is he in?

a) alarm phase

*Correct. This initial reaction to the stressful situation is called the alarm phase.*

b) adaptation phase
c) reactive phase

*Incorrect. There is no reactive phase in the general adaptation syndrome.*

d) muscle preparation phase

**TOPIC: The Endocrine Glands**
**ANS: a, Apply What You Know, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (1)**
**APA=1.1; 1.3**

**TB_02_122_ The Endocrine Glands _Apply_LO 2.8_APA 1.1, 1.3**
Adelaida hears a rattling sound as she hikes through the desert. Her muscles tense and her blood pressure rises.

According to Hans Selye, she is in the _____.

a) chronic stress phase
b) alarm phase

*Correct. In the alarm phase, the sympathetic nervous system responds to the threatening sound by activating and causing the adrenal glands to release hormones that increase heart rate and blood pressure.*

c) exhaustion phase
d) resistance phase

*Incorrect. The resistance phase would follow the alarm phase, which is the initial response to the threatening sound.*

**TOPIC: The Endocrine Glands**
**ANS: b, Apply What You Know, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (1)**
**% correct 94 a= 4 b= 94 c= 2 d= 0 *r* = .52**
**APA=1.1; 1.3**

**TB_02_123_ The Endocrine Glands _Remember_LO 2.8_APA 1.1**
What is the correct sequence of stages in the general adaptation syndrome?

a) resistance, alarm, exhaustion

*Incorrect. The alarm stage comes before the resistance stage in the general adaptation syndrome.*

b) exhaustion, resistance, alarm
c) alarm, exhaustion, resistance
d) alarm, resistance, exhaustion

*Correct. The correct sequence of stages in the general adaptation syndrome is alarm, resistance, exhaustion.*

**TOPIC: The Endocrine Glands**
**ANS: d, Remember the Facts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (1)**
**% correct 100 a= 0 b= 0 c= 0 d= 100 *r* = .00**
**APA=1.1**

**TB_02_124_ The Endocrine Glands _Remember_LO 2.8_APA 1.2**
The body's physiological reaction to stress includes all of the following, EXCEPT:

a) alarm.

*Incorrect. Alarm is one of the three stages of the General Adaptation Syndrome.*

b) adaptation.

*Correct. The General Adaptation Syndrome includes three stages, alarm, resistance, and exhaustion.*

c) resistance.
d) exhaustion.

**TOPIC: The Endocrine Glands**
**ANS: b, Remember the Facts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (1)**
**APA=1.1**

**TB_02_125_ The Endocrine Glands _Remember_LO 2.8_APA 1.2**
According to Hans Selye, resistance to stress is lowest during the _____ stage of the general adaptation syndrome.

a) alarm
b) resistance
c) exhaustion

*Correct. The third stage of the general adaptation syndrome is exhaustion, during which our resistance to stress is lowest.*

d) collapse

*Incorrect. This is not a stage of the general adaptation syndrome model.*

**TOPIC: The Endocrine Glands**
**ANS: c, Remember the Facts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (1)**
**APA=1.2**

**TB_02_126_ The Endocrine Glands _Understand_LO 2.8_APA 1.1**
A person in the _____ stage of the general adaptation syndrome may feel better, even though he or she continues to secrete hormones to help the body fight a stressor.

a) alarm
b) resistance

*Correct. During the resistance stage, a person may feel better, even though he or she continues to secrete hormones to help the body fight a stressor.*

c) exhaustion

*Incorrect. During the exhaustion stage, the body's resources are so depleted that stress-related disease can develop.*

d) termination

**TOPIC: The Endocrine Glands**
**ANS: b, Understand the Concepts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (1)**
**APA=1.1**

**TB_02_127_ The Endocrine Glands _Remember_LO 2.8_APA 1.1**
In which stage of the general adaptation syndrome has the body reached the limits of its ability to adapt to stress, which may result in the development of stress-related diseases?

a) alarm
b) collapse
c) exhaustion

*Correct. During the exhaustion stage, the body has reached its limit.*

d) resistance

*Incorrect. During the resistance stage, the body fights off the stressor until its resources give out.*

**TOPIC: The Endocrine Glands**
**ANS: c, Remember the Facts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (1)**
**% correct 85 a= 3 b= 7 c= 85 d= 5 *r* = .19**
**APA=1.1**

**TB_02_128_ The Endocrine Glands _Understand_2.8_APA 1.1**
According to Selye, some people may develop illnesses such as high blood pressure or a weakened immune system during the _____ stage of the general adaptation syndrome.

a) alarm
b) collapse
c) exhaustion

*Correct. During the exhaustion stage, the body's resources are so depleted that stress-related diseases can develop.*

d) resistance

*Incorrect. During the resistance stage, the body uses its resources to fight off the stressor. It is not until the next stage, exhaustion, that bodily resources are so depleted that stress-related diseases can develop.*

**TOPIC: The Endocrine Glands**
**ANS: c, Understand the Concepts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (2)**
**% correct 77 a= 6 b= 0 c= 77 d= 17 *r* = .18**
**% correct 65 a= 8 b=2 c= 65 d= 2 *r* = .27**
**APA=1.1**

**TB_02_129_ The Endocrine Glands _Apply_LO 2.8_APA 1.2, 1.3**
For the past six months, Dahlia's job has been extremely stressful, but she doesn't feel that she can quit because she needs the money for tuition. Dahlia has been having chronic headaches and is behind in all of her classes. According to Hans Selye, Dahlia is in the _____ stage of the general adaptation syndrome.

a) alarm
b) collapse
c) exhaustion

*Correct. Dahlia has experienced prolonged stress, and her bodily resources are so depleted that stress-related diseases, such as chronic headaches, can develop.*

d) resistance

*Incorrect. During the resistance stage, the body uses its resources to fight off the stressor. It is not until the next stage, exhaustion, that bodily resources are so depleted that stress-related diseases, such as chronic headaches, can develop.*

**TOPIC: The Endocrine Glands**
**ANS: c, Apply What You Know, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (2)**
**APA=1.2; 1.3**

**TB_02_130_ The Endocrine Glands _Remember_LO 2.8_APA 1.1**
The system of cells, organs, and chemicals of the body that responds to attacks from diseases and injuries is called the _____.

a) immune system

*Correct. The immune system is defined as the system of cells, organs, and chemicals of the body that responds to attacks from diseases, infections, and injuries.*

b) endocrine system

*Incorrect. The endocrine system is made up of glands that secrete chemicals; it is not involved in the immune response.*

c) sympathetic nervous system
d) respiratory system

**TOPIC: The Endocrine Glands**
**ANS: a, Remember the Facts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (1)**
**% correct 100 a= 100 b= 0 c= 0 d= 0 *r* = .00**
**APA=1.1**

**TB_02_131_ The Endocrine Glands _Remember_LO 2.8_APA 1.1**
The field of _____ studies the effects of psychological factors such as stress, emotions, thinking, and behavior on the immune system.

a) social psychology

*Incorrect. Social psychology is concerned with how the presence of others influences the thoughts, feelings, and behaviors of individuals.*

b) organic medicine
c) psychoneuroimmunology

*Correct. Psychoneuroimmunology is concerned with the effects of stress on the immune system.*

d) interactive psychology

**TOPIC: The Endocrine Glands**
**ANS: c, Remember the Facts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (1)**
**% correct 95 a= 2 b= 2 c= 95 d= 1 *r* = .34**
**APA=1.1**

**TB_02_132_ The Endocrine Glands _Analyze_LO 2.8_APA 1.1, 1.3**
People living under stressful conditions tend to get sick more often than they would otherwise. How do researchers in psychoneuroimmunology explain this phenomenon?

a) The stress response reduces immune system functioning, thus making us more vulnerable to diseases.

*Correct. Researchers in psychoneuroimmunology believe that the stress response reduces immune system functioning, thus making us more vulnerable to diseases.*

b) The stress response in the long run leads to a lowering of the heart rate, which makes the heart inefficient.
c) The stress response makes muscles stronger, which places a greater burden on the heart and respiratory systems.
d) The body tends to adapt to the constant call for the stress response and, thus, future responses are not as strong as before.

*Incorrect. The body's future responses to stress tend to be just as strong as past ones.*

**TOPIC: The Endocrine Glands**
**ANS: a, Analyze It, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (2)**
**% correct 94 a= 94 b= 0 c= 0 d= 6 *r* = .21**
**APA=1.1; 1.3**

**TB_02_133_ The Endocrine Glands _Understand_LO 2.8_APA 1.1**
Which of the following statements BEST encapsulates the relationship between stress and physical illness according to psychoneuroimmunologists?

a) Stress compromises the body's immune system, leaving a person vulnerable to illness.

*Correct. While stress has not been found to directly cause illness, it does appear to rob the body of its ability to fight illness effectively.*

b) Stress increases the production of natural killer cells, which causes cell death and leads to illness.

*Incorrect. Stress reduces the production of natural killer cells, which your body needs to fight off viruses and tumor cells.*

c) Stress causes high blood pressure, heart disease, and cancer.

d) Stress has no direct relationship to physical illness, though physicians tell us that these things are related so that we will be more willing to take unnecessary medications.

**TOPIC: The Endocrine Glands**
**ANS: a, Understand the Concepts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (2)**
**APA=1.1**

**TB_02 _134_ The Endocrine Glands _Remember_LO 2.8_APA 1.1**
Stress has been shown to put people at a higher risk for _____.

a) unplanned pregnancy

b) heart attack and stroke

*Correct. Stress is linked with risk for heart attacks and stroke.*

c) promotions at work

d) schizophrenia

*Incorrect. Stress is linked with risk for heart attack and stroke but not for schizophrenia.*

**TOPIC: The Endocrine Glands**
**ANS: b, Remember the Facts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (1)**
**% correct 100 a= 0 b= 100 c= 0 d= 0 *r* = .00**
**% correct 98 a= 0 b= 98 c= 0 d= 2 *r* = .21**
**APA=1.1**

**TB_02_135_ The Endocrine Glands _Remember_LO 2.8_APA 1.1**
A name for one type of immune system cell that helps to fight cancerous tumors is _____.

a) B cell

b) activator cell

c) natural killer cell

*Correct. These cells with the ominous name are an important part of the immune system.*

d) neuroimmunological cell

*Incorrect. There is nothing called a neuroimmunological cell discussed in your text.*

**TOPIC: The Endocrine Glands**
**ANS: c, Remember the Facts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (1)**
**APA=1.1**

**TB_02_136_ The Endocrine Glands _Remember_LO 2.8_APA 1.1**
Research has found that work-related stress is NOT related to several different types of cancer. This study examined all but which of the following types of cancer?

a) colon

*Incorrect. This research examined colon, lung, prostate, and breast cancer.*

b) lung
c) testicular
*Correct. This research examined colon, lung, prostate, and breast cancer.*
d) prostate
**TOPIC: The Endocrine Glands**
**ANS: c, Remember the Facts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (3)**
**APA=1.1**

## Looking Inside the Living Brain

### Methods for Studying Specific Regions of the Brain

**Learning Objective 2.9 -** Describe how lesioning studies and brain stimulation are used to study the brain.

**TB_02_137_Looking Inside the Living Brain_Remember_LO 2.9, APA 1.1**
Insertion into the brain of a thin insulated wire through which an electrical current is sent that destroys the brain cells at the tip of the wire is called _____.
a) lesioning
*Correct. Lesioning destroys brain cells.*
b) ESB
*Incorrect. ESB stimulates brain cells.*
c) EEG
d) CT scanning
**TOPIC: Looking Inside the Living Brain**
**ANS: a, Remember the Facts, LO=2.9 Describe how lesioning studies and brain stimulation are used to study the brain., (1)**
**APA=1.1**

**TB_02_138_Looking Inside the Living Brain_Understand_LO 2.9, APA 2.4**
In order to study parts of an animal's brain, researchers may sometimes deliberately damage a part of the brain. They accomplish this by placing into the brain a thin insulated wire through which they send an electrical current that destroys the brain cells at the tip of the wire. This technique is called _____.
a) lesioning
*Correct. Lesioning destroys brain cells.*
b) ESB
*Incorrect. ESB stimulates brain cells.*
c) EEG
d) CT scan
**TOPIC: Looking Inside the Living Brain**
**ANS: a, Understand the Concepts, LO=2.9 Describe how lesioning studies and brain stimulation are used to study the brain., (2)**
**APA=2.4**

**TB_02_139_Looking Inside the Living Brain_Remember_LO 2.9, APA 1.1**
**_____** involves using an electrical current strong enough to kill off target neurons, while _____ uses an electrical current that only temporarily disrupts the targeted brain area.
a) Lesioning; computed tomography
b) Computed tomography; lesioning
c) Lesioning; brain stimulation
*Correct. Lesioning involves electrical currents strong enough to kill the targeted neurons, while brain stimulation uses lower level electrical currents that temporarily disable the targeted neurons.*
d) Brain stimulation; lesioning
*Incorrect. Brain stimulation uses lower levels of electrical current to temporarily disable the targeted neurons,*

*while lesioning uses electrical currents strong enough to ill the targeted neurons.*
**TOPIC: Looking Inside the Living Brain**
**ANS: c, Remember the Facts, LO=2.9 Describe how lesioning studies and brain stimulation are used to study the brain., (1)**
**APA=1.1**

**Neuroimaging Techniques**

**Learning Objective 2.10 -** Compare and contrast neuroimaging techniques for mapping the brain's structure and function.

**TB_02_140_Looking Inside the Living Brain_Remember_LO 2.10, APA 2.4**
A brain-imaging method that takes computer-controlled X-rays of the brain is called _____.
a) electroencephalography (EEG)
b) magnetic resonance imaging (MRI)
*Incorrect. MRI is a brain-imaging method using radio waves and magnetic fields of the body.*
c) positron emission tomography (PET)
d) computed tomography (CT)
*Correct. CT scans take computer-controlled X-rays of the brain.*
**TOPIC: Looking Inside the Living Brain**
**ANS: d, Remember the Facts, LO=2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure and function (3)**
**% correct 30 a= 16 b= 42 c= 11 d= 30 *r* = .30**
**APA=2.4**

**TB_02_141_Looking Inside the Living Brain_Apply_LO 2.10, APA 2.4**
Maximilian is in the hospital about to undergo a brain-imaging process that involves taking many X-rays from different angles aided by the use of a computer. What type of imaging technique is being used?
a) electroencephalography (EEG)
b) magnetic resonance imaging (MRI)
*Incorrect. MRI is a brain-imaging method using radio waves and magnetic fields of the body.*
c) positron-emission tomography (PET)
d) computed tomography (CT)
*Correct. CT scans take computer-controlled X-rays of the brain.*
**TOPIC: Looking Inside the Living Brain**
**ANS: d, Apply What You Know, LO=2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure and function., (3)**
**% correct 37 a= 18 b= 42 c= 4 d= 37 *r* = .30**
**APA=2.4**

**TB_02_142_Looking Inside the Living Brain_Apply_LO 2.10, APA 2.4**
If Luisa's doctor has taken a series of images of her brain using X-rays, then she has likely had a(n) _____.
a) EEG
*Incorrect. An electroencephalogram is a graphical representation of the electrical activity in the brain.*
b) MRI
c) CT
*Correct. CT scans use x-rays to create such images.*
d) PET
**TOPIC: Looking Inside the Living Brain**
**ANS: c, Apply What You Know, LO=2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure and function., (3)**
**APA=2.4**

**TB_02_143_Looking Inside the Living Brain_Understand_LO 2.10, APA 2.4**

A brain-imaging method called _____ takes advantage of the magnetic properties of different atoms to take sharp, three-dimensional images of the brain.

a) electroencephalography (EEG)
b) magnetic resonance imaging (MRI)

*Correct. MRI is a brain-imaging method using radio waves and magnetic fields of the body.*

c) positron emission magnetography (PEM)
d) computed tomography (CT)

*Incorrect. CT scans use X-rays.*

**TOPIC: Looking Inside the Living Brain**
**ANS: b, Understand the Concepts, LO=2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure and function., (2)**
**APA=2.4**

**TB_02_144_Looking Inside the Living Brain_Remember_LO 2.10, APA 2.4**
A brain-imaging method using radio waves and magnetic fields of the body to produce detailed images of the brain is called _____.

a) electroencephalography (EEG)
b) magnetic resonance imaging (MRI)

*Correct. MRI is a brain-imaging method using radio waves and magnetic fields of the body.*

c) positron emission tomography (PET)
d) computed tomography (CT)

*Incorrect. CT scans use X-rays.*

**TOPIC: Looking Inside the Living Brain**
**ANS: b, Remember the Facts, LO=2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure and function., (2)**
**% correct 64 a= 19 b= 64 c= 7 d= 10 *r* = .20**
**% correct 81 a= 17 b= 81 c= 0 d= 2 *r* = .29**
**APA=2.4**

**TB_02_145_Looking Inside the Living Brain_Apply_LO 2.10, APA 2.4**
Felix is in the hospital and is about to undergo a brain-imaging process that involves placing him inside a magnetic field so that a computer can create three-dimensional images of his brain. What procedure is he about to undergo?

a) electroencephalography (EEG)
b) magnetic resonance imaging (MRI)

*Correct. MRI is a brain-imaging method using radio waves and magnetic fields of the body.*

c) computed tomography (CT)

*Incorrect. CT scans use X-rays.*

d) positron emission tomography (PET)

**TOPIC: Looking Inside the Living Brain**
**ANS: b, Apply What You Know, LO=2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure and function., (1)**
**APA=2.4**

**TB_02_146_Looking Inside the Living Brain_Apply_LO 2.10, APA 2.4**
Small metal disks are pasted onto Isla's scalp and they are connected by wire to a machine that translates the electrical energy from her brain into wavy lines on a moving piece of paper. From this description, it is evident that Isla's brain is being studied through the use of _____.

a) a CT scan

*Incorrect. CT scans take computer-controlled X-rays of the brain.*

b) functional magnetic resonance imaging
c) a microelectrode
d) an electroencephalogram

*Correct. Electroencephalograms record brain wave patterns.*

**TOPIC: Looking Inside the Living Brain**
**ANS: d, Apply What You Know, LO=2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure and function., (1)**

**APA=2.4**

**TB_02_147_Looking Inside the Living Brain_Remember_LO 2.10, APA 2.4**
Which of the following is a machine designed to record the brain wave patterns produced by electrical activity of the brain's cortex, just below the scalp?
a) deep lesioning
b) ESB
*Incorrect. ESB is insertion of a thin insulated wire into the brain.*
c) EEG
*Correct. EEG records brain wave patterns.*
d) CT scan
**TOPIC: Looking Inside the Living Brain**
**ANS: c, Remember the Facts, LO=2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure and function., (2)**
**APA=2.4**

**TB_02_148_Looking Inside the Living Brain_Remember_LO 2.10, APA 2.4**
Which equipment is used to monitor brain waves?
a) CT scans
*Incorrect. A CT scan is a brain-imaging method.*
b) functional magnetic resonance imaging
c) microelectrode
d) electroencephalograph
*Correct. Electroencephalographs monitor brain waves.*
**TOPIC: Looking Inside the Living Brain**
**ANS: d, Remember the Facts, LO=2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure and function., (3)**
**% correct 31 a= 27 b= 19 c= 22 d= 31 *r* = .37**
**APA=2.4**

**TB_02_149_Looking Inside the Living Brain_Apply_LO 2.10, APA 2.4**
Which of the following statements would BEST describe a person who was experiencing a brain analysis technique called magnetoencephalography (MEG)?
a) The patient wears a helmet-like device during the procedure.
*Correct. MEG involves a helmet that contains devices that are highly sensitive to magnetic fields.*
b) The patient would be injected with a radioactive tracer that is relatively easily to obtain.
*Incorrect. This would be a description of SPECT.*
c) The patient would have several small electrodes attached to their scalp.
d) The patient would be slid into a tube where a large magnet would circle around them for an extended period of time.
**TOPIC: Looking Inside the Living Brain**
**ANS: a, Apply What You Know, LO=2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure and function., (3)**
**APA=2.4**

**TB_02_150_Looking Inside the Living Brain_Remember_LO 2.10, APA 2.4**
Which of the following is a brain-imaging method in which radioactive sugar is injected into the subject and a computer compiles a color-coded image of the activity of the brain?
a) electroencephalography (EEG)
b) computed tomography (CT)
c) positron emission tomography (PET)
*Correct. PET scan provides a color-coded image of the activity of the brain.*
d) functional magnetic resonance imaging (fMRI)
*Incorrect. FMRI does not involve radioactive sugar.*
**TOPIC: Looking Inside the Living Brain**
**ANS: c, Remember the Facts, LO=2.10 Compare and contrast neuroimaging techniques for mapping the**

**brain's structure and function., (3)**
**% correct 48 a= 25 b= 12 c= 48 d= 13 *r* = .37**
**APA=2.4**

**TB_02_151_Looking Inside the Living Brain_Apply_LO 2.10, APA 2.4**
Anika's physician refers her to a medical center in order to have the biochemical activity in her brain analyzed. She is given an injection of a radioactive glucose-like substance and then is told to lie down with her head in a scanner. The technique being used is _____.

a) positron emission tomography

*Correct. PET involves injecting a radioactive glucose into the patient.*

b) functional magnetic resonance imaging

*Incorrect. FMRI does not involve injecting the patient with glucose.*

c) microelectrode recording
d) an electroencephalogram

**TOPIC: Looking Inside the Living Brain**
**ANS: a, Apply What You Know, LO=2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure and function., (2)**
**APA=2.4**

**TB_02_152_Looking Inside the Living Brain_Apply_LO 2.10, APA 2.4**
Elena needs to have a neuroimaging test that will track the activity of her brain, but wants to use a radioactive tracer that is more easily obtained than those used for PET. Which of the following offers the BEST alternative based on Elena's needs?

a) electroencephalography (EEG)
b) computed tomography (CT)
c) functional positron emission tomography (fPET)

*Incorrect. There is no neuroimaging technique called fPET.*

d) single photo emission computed tomography (SPECT)

*Correct. SPECT offers this stated benefit over PET scans.*

**TOPIC: Looking Inside the Living Brain**
**ANS: d, Apply What You Know, LO=2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure and function., (2)**
**APA=2.4**

**TB_02_153_Looking Inside the Living Brain_Apply_LO 2.10, APA 2.4**
A researcher wants to obtain a "movie" of changes in the activity of the brain using images from different time periods. Which of these would be the BEST choice for this researcher?

a) electroencephalography (EEG)
b) computed tomography (CT)
c) positron emission tomography (PET)

*Incorrect. PET provides a color-coded image of the activity of the brain, not moving images of the brain.*

d) functional magnetic resonance imaging (fMRI)

*Correct. An fMRI takes MRI images and combines them into a moving image of the brain.*

**TOPIC: Looking Inside the Living Brain**
**ANS: d, Apply What You Know, LO=2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure and function., , (3)**
**% correct 40 a= 25 b= 18 c= 15 d= 40 *r* = .20**
**APA=2.4**

## From the Bottom Up: The Structures of the Brain

### The Hindbrain

**Learning Objective 2.11 -** Identify the different structures of the hindbrain and the function of each.

**TB_02_154_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, APA 1.1**
The brain is divided into several different structures on the bottom part of the brain referred to as the "hindbrain." Which of the parts of the brain listed below is NOT located in the hindbrain?

a) medulla
b) pons
c) cerebellum

*Incorrect. This part of the brain is in the hindbrain.*

d) thalamus

*Correct. This part of the brain is in the forebrain.*

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: d, Remember the Facts, LO=2.11 Identify the different structures of the hindbrain and the function of each., (3)**
**APA=1.1**

**TB_02_155_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, APA 1.1**
The _____ is a structure in the brain stem responsible for life-sustaining functions, such as breathing and heart rate.

a) reticular activating system
b) pons

*Incorrect. The pons plays a role in sleep, dreaming, left-right body coordination, and arousal.*

c) medulla

*Correct. The medulla is responsible for life-sustaining functions.*

d) cerebellum

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Remember the Facts, LO=2.11 Identify the different structures of the hindbrain and the function of each., (3)**
**% correct 59 a= 3 b= 19 c= 59 d= 18 *r* = .27**
**% correct 60 a= 3 b= 14 c= 60 d= 22 *r* = .22**
**APA=1.1**

**TB_02_156_From the Bottom Up: The Structures of the Brain_Apply_LO 2.11, APA 1.1, 1.3**
An auto accident rendered Pedro's nervous system unable to send messages for him to breathe, so he is on a respirator. Which brain structure was damaged in the accident?

a) pons

*Incorrect. The pons plays a role in sleep, dreaming, left-right body coordination, and arousal.*

b) medulla

*Correct. The medulla is responsible for breathing.*

c) cerebellum
d) reticular formation

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: b, Apply What You Know, LO=2.11 Identify the different structures of the hindbrain and the function of each., (3)**
**APA=1.1; 1.3**

**TB_02_157 From the Bottom Up: The Structures of the Brain_Apply_LO 2.11, APA 1.1**
Entering the classroom for her first college exam, Latisha could sense her heart rate and breathing. Latisha was sensing the activity of her

a) pons.

*Incorrect. The pons plays a role in sleep, dreaming, and arousal.*

b) cerebellum.
c) medulla.

*Correct. The medulla regulates respiration, heart rate, and swallowing.*

d) reticular formation.

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Apply What You Know, LO=2.11, Identify the different structures of the hindbrain and the function of each., (3)**
**APA=1.1**

**TB_02_158_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, APA 1.1**
The point at which the nerves from the left side of the body cross over into the right side of the brain and vice versa is called the _____.

a) reticular activating system
b) pons

*Incorrect. The pons connects the top of the brain to the bottom.*

c) medulla

*Correct. This is the point where nerves cross over.*

d) cerebellum

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Remember the Facts, LO=2.11 Identify the different structures of the hindbrain and the function of each., (2)**
**APA=1.1**

**TB_02_159_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, APA 1.1**
The _____ is a structure in the brain stem that plays a role in sleep, dreaming, left-right body coordination, and arousal.

a) reticular activating system
b) pons

*Correct. The pons plays a role in sleep, dreaming, left-right body coordination, and arousal.*

c) medulla

*Incorrect. The medulla is responsible for life-sustaining functions but does not play a role in sleep, dreaming, and arousal.*

d) cerebellum

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: b, Remember the Facts, LO=2.11 Identify the different structures of the hindbrain and the function of each., (3)**
**APA=1.1**

**TB_02_160_From the Bottom Up: The Structures of the Brain_Apply_LO 2.11, APA 1.1, 1.3**
A college student is having difficulty staying awake during the day and sleeping through the night. Her difficulties are MOST likely due to problems in her _____.

a) hippocampus

*Incorrect. The hippocampus is responsible for the formation of long-term memory and does not play a role in keeping people awake and alert.*

b) pons

*Correct. The pons plays a role in sleep, dreaming, and arousal.*

c) medulla
d) cerebellum

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: b, Apply What You Know, LO=2.11 Identify the different structures of the hindbrain and the function of each., (3)**
**% correct 44 a= 15 b= 44 c= 25 d= 16 *r* = .22**
**% correct 41 a= 31 b= 41 c= 12 d= 16 *r* = .47**
**APA=1.1; 1.3**

**TB_02_161_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, APA 1.1**
Which of the following is responsible for the ability to selectively attend to certain kinds of information in one's surroundings and become alert to changes?

a) reticular formation

*Correct. The reticular formation plays a role in selective attention.*

b) pons

*Incorrect. The pons plays a role in sleep, dreaming, and arousal but not in selective attention.*

c) medulla

d) cerebellum

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Remember the Facts, LO=2.11 Identify the different structures of the hindbrain and the function of each., (2)**
**APA=1.1**

**TB_02_162_From the Bottom Up: The Structures of the Brain_Apply_LO 2.11, APA 1.1, 1.3**
Since Sandy suffered a head injury in a car accident three months ago, she has not experienced dreams as she had in the past. She used to dream vivid, active dreams. Which part of Sandy's brain was most likely affected during the car accident, which is related to her problem dreaming?

a) pons

*Correct. The pons has been shown to influence sleep and dreaming as well as arousal.*

b) cerebellum

c) cerebral cortex

d) pituitary gland

*Incorrect. The correct answer is the pons.*

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Apply What You Know, LO=2.11 Identify the different structures of the hindbrain and the function of each., (3)**
**APA=1.1; 1.3**

**TB_02_163_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, APA 1.1**
What is the main function of the reticular formation?

a) to control thinking

b) to regulate emotions

c) to control levels of alertness and arousal

*Correct. The reticular formation controls levels of alertness and arousal.*

d) to coordinate involuntary rapid fine-motor movements.

*Incorrect. This is the role of the cerebellum.*

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Remember the Facts, LO=2.11 Identify the different structures of the hindbrain and the function of each., (3)**
**% correct 37 a= 3 b= 30 c= 37 d= 30 *r* = .20**
**APA=1.1**

**TB_02_164 From the Bottom Up: The Structures of the Brain_Apply_LO 2.11 APA 1.1**
Sitting in the classroom, Giacomo became immune to the droning of his professor's voice until the professor suddenly dropped a large book onto the desk. Attention to this sudden loud noise was due to the function of the:

a) pons.

b) basil ganglia.

c) reticular formation.

*Correct. The reticular formation is responsible for arousal and attention.*

d) medulla.

*Incorrect. The medulla regulates respiration, heart rate, and swallowing.*

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Apply What You Know, LO=2.11, Identify the different structures of the hindbrain and the function of each., (3)**
**APA=1.1**

**TB_02_165 From the Bottom Up: The Structures of the Brain_Analyze_LO2.11, APA 1.1**
If your reticular formation was constantly stimulated, you would experience:

a) difficulty sleeping.

*Correct. The reticular formation is responsible for arousal and attention.*

b) vivid colors.
c) loud noises.
d) constant hunger.

*Incorrect. The hypothalamus regulates hunger.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Analyze It, LO=2.11, Identify the different structures of the hindbrain and the function of each., (3) APA 1.1**

**TB_02_166_From the Bottom Up: The Structures of the Brain_Apply_LO 2.11, APA 1.1, 1.3**
Alessia has grown up sleeping with a fan running in her room since she was an infant. This provides white noise to drown out the television programs being watched by other family members who were still awake. In an effort to save electricity, her mother has started coming into her room and turning her fan off after she thinks Alessia is asleep. However, each time Alessia wakes up and asks for the fan to be turned back on. Alessia is selectively attending to certain kinds of information in her surroundings, which has been linked to the _____ part of the brain.

a) reticular formation

*Correct. Research has shown that the RF in the brain would be sensitive to this difference in the environment.*
b) pons
c) cerebellum
d) medulla

*Incorrect. The correct answer is the reticular formation.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Apply What You Know, LO=2.11 Identify the different structures of the hindbrain and the function of each., (3)**
**APA=1.1; 1.3**

**TB_02_167_From the Bottom Up: The Structures of the Brain_Apply_LO 2.11, APA 1.1, 1.3**
Johanna is typing her term paper in the computer lab. Although a class is going on just a few feet away, she does not seem to notice. Which part of the brain allows Johanna to focus on her typing and ignore the distractions that surround her?

a) reticular formation

*Correct. The reticular formation is responsible for selective attention.*
b) pons

*Incorrect. The pons plays a role in sleep, dreaming, and arousal but not in selective attention.*
c) medulla
d) cerebellum

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Apply What You Know, LO=2.11 Identify the different structures of the hindbrain and the function of each., (2)**
**APA=1.1; 1.3**

**TB_02_168_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, APA 1.1**
The cerebellum _____.

a) controls blood pressure
b) is involved in emotional behavior
c) coordinates involuntary rapid fine-motor movement

*Correct. The cerebellum does coordinate involuntary rapid fine-motor movement.*
d) relays messages from the sensory receptors

*Incorrect. The cerebellum coordinates involuntary rapid fine-motor movement.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Remember the Facts, LO=2.11 Identify the different structures of the hindbrain and the function of each., (2)**
**% correct 65 a= 4 b= 14 c= 65 d= 17 *r* = .25**
**APA=1.1**

**TB_02_169_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, APA 1.1**

Which of the following coordinates involuntary rapid fine-motor movement?

a) medulla
b) pons
c) reticular formation

*Incorrect. The reticular formation is not involved in movement.*

d) cerebellum

*Correct. The cerebellum coordinates involuntary rapid fine-motor movement.*

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: d, Remember the Facts, LO=2.11 Identify the different structures of the hindbrain and the function of each., (1)**
**APA=1.1**

**TB_02_170_From the Bottom Up: The Structures of the Brain_Apply_LO 2.11, APA 1.1**
Damage to the cerebellum is likely to disrupt which of the following?

a) playing basketball

*Correct. The cerebellum coordinates movements that have to happen in rapid succession.*

b) sleeping

*Incorrect. The pons plays a role in sleep and dreaming, not in movement.*

c) homeostasis
d) thinking

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Apply What You Know, LO=2.11 Identify the different structures of the hindbrain and the function of each., (3)**
**APA=1.1**

**TB_02_171_From the Bottom Up: The Structures of the Brain_Apply_LO 2.11, APA 1.1, 1.3**
Giorgia has been unable to participate in her gymnastics class and has become very uncoordinated since she was involved in an accident where she suffered a head injury. As a result of the accident,
Giorgia was likely to have suffered damage to her _____.

a) cerebellum

*Correct. This part of the brain controls coordination and balance.*

b) medulla
c) cerebral cortex
d) hypothalamus

*Incorrect. This is not the correct part of the brain that controls these functions.*

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Apply What You Know, LO=2.11 Identify the different structures of the hindbrain and the function of each., (2)**
**APA=1.1; 1.3**

**TB_02_172_From the Bottom Up: The Structures of the Brain_Apply_LO 2.11, APA 1.1**
If your _____ was damaged, you might walk oddly and have trouble standing normally.

a) pons
b) medulla

*Incorrect. The medulla is responsible for life-sustaining functions like respiration and circulation.*

c) cerebellum

*Correct. The cerebellum is responsible for balance and fine motor coordination.*

d) amygdala

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Apply What You Know, LO=2.11 Identify the different structures of the hindbrain and the function of each., (2)**
**APA=1.1**

**TB_02_173 From the Bottom Up: The Structure of the Brain_Apply_LO 2.11, APA 1.1**
After months of practice, a difficult violin technique becomes easier due to the function of the _____.

a) amygdala

b) cingulate cortex
*Incorrect. The cingulate cortex plays a role in emotional and cognitive processes.*
c) cerebellum
*Correct. The cerebellum controls coordinated fine motor movements.*
d) hippocampus
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Apply What You Know, LO=2.11, Identify the different structures of the hindbrain and the function of each., (2)**
**APA=1.1**

**TB_02_174_From the Bottom Up: The Structures of the Brain_Apply_LO 2.11, APA 1.1, 1.3**
Evie has been diagnosed with spinocerebellar degeneration. The first stage of the disease involves tremors and unsteady gate. In the later stages, she will be unable to stand, walk, and will be uncoordinated in her movements. This disease affects the part of the brain called the _____.
a) hippocampus
b) amygdala
c) cerebellum
*Correct. This is the part of the brain that is affected by this disease.*
d) cerebral cortex
*Incorrect. This is not the part of the brain that is affected.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Apply What You Know, LO=2.11 Identify the different structures of the hindbrain and the function of each., (2)**
**APA=1.1; 1.3**

## Structures Under the Cortex: The Limbic System

**Learning Objective 2.12 -** Identify the structures of the brain involved in emotion, learning, memory, and motivation.

**TB_02_175_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, APA 1.1**
Which of the following is a group of several brain structures located primarily under the cortex and is involved in learning, emotion, memory, and motivation?
a) limbic system
*Correct. This structure is involved in learning, memory, emotion, and motivation.*
b) cerebellum
c) cerebral cortex
d) cerebrum
*Incorrect. The cerebrum consists of the cerebral hemispheres and connecting structures.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Remember the Facts, LO=2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation., (3)**
**APA=1.1**

**TB_02_176_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, APA 1.1**
The structures of the limbic system play an important role in _____ and _____.
a) heart rate; breathing
b) breathing; decision making
c) memory; emotion
*Correct. These structures play a role in memory and emotion.*
d) spatial tasks; sequential tasks
*Incorrect. The limbic system does not play an important role in these tasks.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Remember the Facts, LO=2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation., (1)**

**% correct 58 a= 28 b= 5 c= 58 d= 8 *r* = .30**
**% correct 44 a= 26 b= 22 c=44 d= 7 *r* = .40**
**APA=1.1**

**TB_02_177_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, APA 1.1**
What part of the brain acts as a relay station for incoming sensory information?
a) hypothalamus
*Incorrect. The hypothalamus regulates sleep, hunger, thirst, and sex.*
b) thalamus
*Correct. The thalamus acts as a relay station.*
c) cerebellum
d) pituitary gland
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: b, Remember the Facts, LO=2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation., (3)**
**% correct 48 a= 19 b= 48 c= 25 d= 8 *r* = .53**
**% correct 48 a= 22 b= 48 c= 22 d= 8 *r* = .48**
**APA=1.1**

**TB_02_178_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, APA 1.1**
Signals from the neurons of which sense are NOT sent to the cortex by the thalamus?
a) hearing
b) smell
*Correct. Signals from the neurons of the sense of smell go directly into special parts of the brain called olfactory bulbs, which are the structures responsible for smell.*
c) taste
*Incorrect. Signals from the neurons involved in taste are sent to the cortex by the thalamus.*
d) vision
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: b, Remember the Facts, LO=2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation., (2)**
**APA=1.1**

**TB_02_179_From the Bottom Up: The Structures of the Brain_Analyze_LO 2.12, APA 1.1**
The thalamus is often compared to a(n) _____.
a) triage nurse
*Correct. As your authors note, the thalamus is often compared with a triage nurse because it routes sensory information to different parts of the cerebral cortex.*
b) fast food menu
*Incorrect. There is really nothing about this answer that could be considered correct.*
c) stop sign
d) bus stop
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Analyze It, LO=2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation., (2)**
**APA=1.1**

**TB_02_180_From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, APA 1.1, 1.3**
Marco loves the smell of the grass after it rains. This is a result of his _____, which has/have received signals from neurons in his sinus cavity.
a) thalamus
b) olfactory bulbs
*Correct. This is the part of the brain that is related to the sense of smell.*
c) opticfactory bulbs
d) hippocampus
*Incorrect. The correct answer is the olfactory bulbs.*

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: b, Apply What You Know, LO=2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation., (2)**
**APA=1.1; 1.3**

**TB_02_181_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, APA 1.1**
Which part of the brain is very small but extremely powerful and controls the pituitary gland?
a) hippocampus
b) thalamus
*Incorrect. The thalamus acts as a relay station for incoming sensory information.*
c) hypothalamus
*Correct. The hypothalamus is very small but extremely powerful and controls the pituitary gland.*
d) amygdala
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Remember the Facts, LO=2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation., (2)**
**APA=1.1**

**TB_02_182_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, APA 1.1**
Eating, drinking, sexual behavior, sleeping, and temperature control are most strongly influenced by the _____.
a) hippocampus
b) thalamus
*Incorrect. The thalamus acts as a relay station for incoming sensory information and is not involved in eating, drinking, sexual behavior, sleeping, and temperature control.*
c) hypothalamus
*Correct. The hypothalamus regulates sleep, hunger, thirst, and sex.*
d) amygdala
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Remember the Facts, LO=2.12 Identify the structures of the brain 1involved in emotion, learning, memory, and motivation., (3)**
**% correct 50 a= 12 b= 24 c= 50 d= 14 *r* = .21**
**% correct 59 a= 8 b= 11 c= 59 d= 22 *r* = .32**
**APA=1.1**

**TB_02_183_From the Bottom Up: The Structures of the Brain_Understand_LO 2.12, APA 1.1**
Which of the following is a likely effect of damage to the hypothalamus?
a) reduced use of left arm
b) deregulation of hormones
*Correct. The hypothalamus regulates the pituitary gland and therefore damage can result in the deregulation of hormones.*
c) development of aphasia
*Incorrect. Damage to Broca's and Wernicke's area plays a role in the development of aphasia.*
d) reduced ability to reason
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: b, Understand the Concepts, LO=2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation., (2)**
**APA=1.1**

**TB_02_184 From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, APA 1.1**
Lorelai's dog has rapidly gained weight and is constantly hungry. When Lorelai takes the dog to the vet, she discovers the dog has damage to his_____.
a) amydgala
b) hypothalamus
*Correct. The hypothalamus regulates body temperature, thirst, hunger, sleeping, and sexual activity.*
c) hippocampus
*Incorrect. The hippocampus is important in forming long-term memories.*

d) cerebellum
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: b, Apply It, LO=2.12, Identify the structures of the brain involved in emotion, learning, memory, and motivation., (3)**
**APA=1.1**

**TB_02_185_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, APA 1.1**
The _____ is the part of the brain responsible for the formation of long-term memories.
a) hippocampus
*Correct. The hippocampus is responsible for the formation of long-term memories.*
b) hypothalamus
*Incorrect. The hypothalamus regulates sleep, hunger, thirst, and sex, and is not involved in memory.*
c) fornix
d) amygdala
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Remember the Facts, LO=2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation., (2)**
**% correct 59 a= 59 b= 19 c= 0 d= 22 *r* = .45**
**APA=1.1**

**TB_02_186_From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, APA 1.1**
If you have a problem remembering things that happened a year ago, doctors might check for damage to the area of the brain called the _____.
a) hippocampus
*Correct. The hippocampus is responsible for the formation of long-term memories.*
b) hypothalamus
*Incorrect. The hypothalamus regulates sleep, hunger, thirst, and sex, but not memory.*
c) fornix
d) amygdala
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Apply What You Know, LO=2.12 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation., (2)**
**APA=1.1**

**TB_02_187_From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, APA 1.1**
You can recall the name of your professor because of the function of the:
a) amygdala.
b) hypothalamus.
*Incorrect. The hypothalamus regulates body temperature, thirst, hunger, sleeping, and sexual activity.*
c) cerebellum.
d) hippocampus.
*Correct. The hippocampus is important in forming long-term memories.*
**TOPIC: From the Bottom Up: The Structure of the Brain**
**ANS: d, Apply It, LO=2.12, Identify the structures of the brain involved in emotion, learning, memory, and motivation. (3)**
**APA= 1.1**

**TB_02_188_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, APA 1.1**
People suffering from Alzheimer's disease have much lower levels of acetylcholine in the _____.
a) hippocampus
*Correct. Acetylcholine is involved in the memory function of the hippocampus.*
b) hypothalamus
*Incorrect. The hypothalamus regulates sleep, hunger, thirst, and sex, but not memory.*
c) fornix
d) amygdala
**TOPIC: From the Bottom Up: The Structures of the Brain**

**ANS: a, Remember the Facts, LO=2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation., (3)**
**APA=1.1**

**TB_02_189_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, APA 1.1**
Which of the following brain structures is located near the hippocampus and is responsible for fear responses and memory of fear?

a) hippocampus
b) hypothalamus

*Incorrect. The hypothalamus regulates sleep, hunger, thirst, and sex, not fear responses.*

c) fornix
d) amygdala

*Correct. The amygdala is responsible for fear responses and memory of fear.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: d, Remember the Facts, LO=2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation., (3)**
**% correct 37 a= 3 b= 51 c= 8 d= 37 *r* = .29**
**APA=1.1**

**TB_02_190_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, APA 1.1**
Rats that have a damaged _____ will show no fear when placed next to a cat.

a) hippocampus
b) hypothalamus

*Incorrect. The hypothalamus regulates sleep, hunger, thirst, and sex, not fear responses.*

c) fornix
d) amygdala

*Correct. The amygdala is responsible for fear responses and memory of fear.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: d, Remember the Facts, LO=2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation., (3)**
**% correct 49 a= 27 b= 23 c= 1 d= 49 *r* = .52**
**APA=1.1**

**TB_02_191_From the Bottom Up: The Structures of the Brain_Apply_LO2-12, APA 1.1, 1.3**
Perhaps Mighty Mouse demonstrated no fear because of damage to his:

a) amygdala.

*Correct. The amygdala is responsible for fear responses.*

b) hypothalamus.

*Incorrect. The hypothalamus regulates sleep, hunger, thirst, and sex, not fear responses.*

c) hippocampus.
d) cerebellum.

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Apply It, LO=2.12, Identify the structures of the brain involved in emotion, learning, memory, and motivation., (3)**
**APA 1.1**

**TB_02_192_From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, APA 1.1, 1.3**
Ishaan has been extremely afraid of cats since he was scratched as a 5-year-old. Whenever he sees a cat, he remembers the time he was scratched across his face, and he starts to feel afraid. If a cat comes towards him, he often runs away immediately, as he is afraid of being scratched again. Ishaan's behaviors and recollection of this trauma is a result of the _____ in the limbic system.

a) hippocampus
b) thalamus
c) amygdala

*Correct. This is the part of the brain that controls many fear responses and memories.*

d) medulla

*Incorrect. The correct answer is the amygdala.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Apply What You Know, LO=2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation., (3)**
**APA=1.1; 1.3**

**TB_02_193_From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, APA 1.1, 1.3**
As Theo walks to his car late at night, he hears footsteps behind him. Feeling afraid, Theo grips his keys and quickens his pace. It is likely that Theo's _____ has been activated.

a) hypothalamus

*Incorrect. The hypothalamus would be responsible for activating the fight-or-flight system, but only after the amygdala interpreted a fearful or threatening response.*

b) hippocampus
c) amygdala

*Correct. The amygdala processes the emotions of anger and fear.*

d) cerebellum

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Apply What You Know, LO=2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation., (2)**
**APA=1.1; 1.3**

**TB_02_194 From the Bottom Up: The Structures of the Brain_Remember_LO2.12, APA 1.1**
The part of the limbic system that is located in the cortex and plays a role in both emotional and cognitive processing is the _____.

a) hypothalamus.
b) hippocampus
c) amygdala

*Incorrect. The amygdala does play a role in emotion, but it is located within the limbic structure, found between the upper brain and brain stem.*

d) cingulate cortex

*Correct. The cingulate cortex plays an important role in both emotional and cognitive processing.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: d, Remember the Facts, LO=2.12 Identify the structures of the brain involved in emotion, learning, memory and motivation., (1)**
**APA=1.1**

## The Cortex

**Learning Objective 2.13 -** Identify the parts of the cortex that process the different senses and those that control movement of the body.

**TB_02_195_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, APA 1.1**
The outermost part of the brain, made up of tightly packed neurons and only a tenth of an inch thick, is called the _____.

a) amygdala
b) medulla
c) cerebellum

*Incorrect. The cerebellum is not the outermost part of the brain.*

d) cortex

*Correct. The outermost part of the brain is called the cortex.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: d, Remember the Facts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (1)**
**APA=1.1**

**TB_02_196_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, APA 1.1**
The cortex is divided into two sections referred to as _____.
a) cerebral hemispheres
*Correct. The two sections of the cortex are called cerebral hemispheres.*
b) cerebellums
*Incorrect. The cerebellum is not a section of the cortex.*
c) corpus callosum
d) neurotransmitters
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Remember the Facts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (1)**
**% correct 91 a= 91 b= 3 c= 5 d= 0 *r* = .29**
**APA=1.1**

**TB_02_197_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, APA 1.1**
The thick band of neurons that connects the right and left cerebral hemispheres is called the _____.
a) cortex
*Incorrect. The cortex is the outermost part of the brain.*
b) cerebrum
c) corpus callosum
*Correct. The corpus callosum connects the right and left cerebral hemispheres.*
d) cerebellum
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Remember the Facts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (1)**
**% correct 90 a= 3 b= 1 c= 90 d= 5 *r* = .51**
**% correct 81 a=0 b= 4 c= 81 d= 15 *r* = .54**
**APA=1.1**

**TB_02_198_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, APA 1.1**
As the cortex increases in size and complexity it becomes more wrinkled in a process known as:
a) corticalization.
*Correct. This is the definition of corticalization.*
b) lateralization.
*Incorrect. Lateralization refers to specialization of any one of the cerebral hemispheres.*
c) neurolateraling.
d) corpus callosum.
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Remember the Facts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (1)**
**APA=1.1**

**TB02_199_From the Bottom Up: The Structures of the Brain_Understand_LO 2.13, APA 1.1**
When packing shirts in his suitcase, Sheldon rolls them into a ball, allowing more shirts in a smaller area. He realizes that this is similar to the wrinkling in the brain cortex known as:
a) lateralization.
*Incorrect. Lateralization refers to specialization of any one hemisphere.*
b) neuroironing.
c) corticalizatiaon.
*Correct. Corticalization refers to the process of the brain becoming more wrinkled as the brain increases in size and complexity.*
d) corpus callosum.
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Understand the Concept, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)**
**APA=1.1**

**TB_02_200_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, APA 1.1**
Which section of the brain is located at the rear and bottom of each cerebral hemisphere and contains the visual centers of the brain?

a) occipital lobe

*Correct. The occipital lobes contain the visual centers of the brain.*

b) parietal lobe

*Incorrect. The parietal lobe contains the somatosensory cortex, not the visual centers.*

c) temporal lobe

d) frontal lobe

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Remember the Facts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body, (1)**
**APA=1.1**

**TB_02_201_From the Bottom Up: The Structures of the Brain_Apply_LO 2.13, APA 1.1, 1.3**
After a head injury, a person reports that she is unable to see, although her eyes are uninjured. A doctor would suspect an injury in the _____ lobe.

a) occipital

*Correct. The occipital lobes contain the visual centers of the brain.*

b) parietal

*Incorrect. The parietal lobes contain the somatosensory cortex, not the visual centers.*

c) temporal

d) frontal

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Apply What You Know, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)**
**APA=1.1; 1.3**

**TB_02_202_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, APA 1.1**
Which of the following regions contains the primary visual cortex?

a) occipital lobe

*Correct. The occipital lobes contain the primary visual cortex.*

b) parietal lobe

*Incorrect. The parietal lobes contain the somatosensory cortex, not the primary visual cortex.*

c) temporal lobe

d) frontal lobe

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Remember the Facts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (1)**
**% correct 82 a= 82 b= 4 c= 14 d= 0 *r* = .47**
**APA=1.1**

**TB_02_203_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, APA 1.1**
The part of the occipital lobe that is responsible for receiving visual information from the eyes is called the _____.

a) primary visual cortex

*Correct. The occipital lobes contain the primary visual cortex.*

b) somatosensory cortex

*Incorrect. The parietal lobes contain the somatosensory cortex.*

c) temporal lobe

d) frontal lobe

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Remember the Facts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)**
**% correct 74 a= 74 b= 18 c= 8 d= 3 *r* = .30**

**% correct 79 a= 79 b= 14 c= 5 d= 2 *r* = .36**
**APA=1.1**

**TB_02_204_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, APA 1.1**
The section of the brain responsible for interpreting the visual information in the primary visual cortex is called the _____.

a) visual association cortex

*Correct. This part of the brain is responsible for interpreting visual information.*

b) somatosensory cortex

*Incorrect. The somatosensory cortex processes information from the skin and internal body receptors for touch, temperature, and body position, not visual information.*

c) temporal lobe
d) frontal lobe

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Remember the Facts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (1)**
**APA=1.1**

**TB_02_205_From the Bottom Up: The Structures of the Brain_Understand_LO 2.13, APA 1.1**
Damage to the _____ would result in an inability to identify and comprehend what is seen through the eyes.

a) visual association cortex

*Correct. This part of the brain is responsible for interpreting visual information.*

b) primary visual cortex

*Incorrect. The primary visual cortex receives visual information from the eyes but does not interpret it.*

c) temporal lobe
d) frontal lobe

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Understand the Concepts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (3)**
**% correct 20 a= 20 b= 26 c= 36 d= 19 *r* = .30**
**APA=1.1**

**TB_02_206_From the Bottom Up: The Structures of the Brain_Apply_LO 2.13, APA 1.1, 1.3**
Brandon has decided to start to learn how to wrestle. On his first day at practice, a seasoned wrestler slams the back of his head to the mat. Brandon was shaken and reported to the trainer that he "saw stars" after he hit his head. As a result of "seeing stars," Brandon's _____ was temporarily affected as a result of the slam.

a) corpus callosum
b) occipital lobe

*Correct. This part of the brain is in the back of the head and controls vision.*

c) parietal lobes

*Incorrect. This is not correct, as the occipital lobe controls vision.*

d) somatosensory cortex

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: b, Apply What You Know, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (3)**
**APA=1.1; 1.3**

**TB_02_207_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, APA 1.1**
Which of the following regions contains the somatosensory cortex?

a) occipital lobe

*Incorrect. This region contains the primary visual cortex.*

b) parietal lobe

*Correct. The parietal lobes contain the somatosensory cortex.*

c) temporal lobe
d) frontal lobe

**TOPIC: From the Bottom Up: The Structures of the Brain**

**ANS: b, Remember the Facts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)**
**APA=1.1**

**TB_02_208_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, APA 1.1**
The _____ lobes are located at the top and back of each cerebral hemisphere, containing the centers for touch, body position, and temperature.

a) frontal
b) temporal

*Incorrect. The temporal lobes are responsible for the sense of hearing and meaningful speech, not for touch, body position, or temperature.*

c) occipital
d) parietal

*Correct. The parietal lobes contain the centers for touch, body position, and temperature.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: d, Remember the Facts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (3)**
**APA=1.1**

**TB_02_209_From the Bottom Up: The Structures of the Brain_Apply_LO 2.13, APA 1.1, 1.3**
Joe is trying to decide whether the shower is hot enough to step in. Kevin is listening to his MP3 player. Nick is looking at a beautiful painting in an art museum. Which individual is using his parietal lobe?

a) Joe

*Correct. The processing of "touch" information like this is handled by the parietal lobe.*

b) Kevin

*Incorrect. Auditory processing is handled by the temporal lobe, not the parietal lobe.*

c) Nick
d) Kevin and Nick are, but Joe is not.

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Apply What You Know, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (3)**
**APA=1.1; 1.3**

**TB_02_210_From the Bottom Up: The Structures of the Brain_Apply_LO 2.13, APA 1.1, 1.3**
Katy was in an automobile accident that resulted in an injury to her brain. Her sense of touch has been affected. Which part of Katy's brain is the most likely site of the damage?

a) frontal lobe
b) temporal lobe

*Incorrect. The temporal lobes are responsible for the sense of hearing and meaningful speech, not touch.*

c) occipital lobe
d) parietal lobes

*Correct. The parietal lobes contain the centers for touch, taste, and temperature.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: d, Apply What You Know, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)**
**APA=1.1; 1.3**

**TB_02_211_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, APA 1.1**
Which region of the brain contains the auditory cortex?

a) temporal lobes

*Correct. The temporal lobes contain the auditory cortex.*

b) parietal lobes

*Incorrect. The parietal lobes contain the somatosensory cortex but not the auditory cortex.*

c) frontal lobes
d) occipital lobes

**TOPIC: From the Bottom Up: The Structures of the Brain**

**ANS: a, Remember the Facts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)**
**APA=1.1**

**TB_02_212_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, APA 1.1**
The part of the brain located just behind the temples, containing neurons responsible for the sense of hearing and meaningful speech, is called the _____.

a) temporal lobes

*Correct. The temporal lobes are responsible for the sense of hearing and meaningful speech.*

b) parietal lobes

*Incorrect. The parietal lobes are not involved with hearing or speech.*

c) frontal lobes
d) occipital lobes

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Remember the Facts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)**
**% correct 72 a= 72 b= 15 c= 8 d= 5 *r* = .51**
**% correct 79 a= 79 b= 12 c= 4 d= 5 *r* = .40**
**APA=1.1**

**TB_02_213_From the Bottom Up: The Structures of the Brain_Understand_LO 2.13, APA 1.**1
If the temporal lobe was stimulated you might experience the sensation of:

a) hearing voices.

*Correct. The temporal lobe is responsible for hearing functions.*

b) seeing colors.
c) feeling chills.

*Incorrect. The parietal lobe is responsible for the sensations of touching and feeling.*

d) planning vacations.

**TOPIC: From the Bottom Up: The Structures of the Brain_Understand the Concept, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)**
**APA=1.1**

**TB_02_214_From the Bottom Up: The Structures of the Brain_Apply_LO 2.13, APA 1.1, 1.3**
Lucas was rollerblading when a cat jumped right in front of him, causing him to fall. When he fell, he landed on the side of his head. Shortly afterwards, Lucas complained that he could not understand what people were saying to him. Which lobe would have been most affected by this fall given what he experienced?

a) frontal
b) temporal

*Correct. The comprehension of language is one of the many tasks handled by the temporal lobe.*

c) parietal
d) occipital

*Incorrect. The occipital lobe is really responsible for visual processing, and does not play any role in the comprehension of language.*

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: b, Apply What You Know, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (3)**
**APA=1.1; 1.3**

**TB_02_215_From the Bottom Up: The Structures of the Brain_Apply_LO 2.13, APA 1.1, 1.**
Sal is having trouble deciding what he wants to eat for breakfast. Which lobe of his brain is especially active as he makes his selection?

a) temporal

*Incorrect. This part of the brain is responsible for the sense of hearing and meaningful speech.*

b) parietal
c) frontal

*Correct. The frontal lobes are responsible for decision-making skills.*

d) occipital
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Apply What You Know, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (3)**
**APA=1.1; 1.3**

**TB_02_216_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, APA 1.1**
Which lobes of the brain are involved in planning, memory, and personality?
a) temporal lobes
*Incorrect. This part of the brain is responsible for the sense of hearing and meaningful speech, not planning, memory, or personality.*
b) parietal lobes
c) frontal lobes
*Correct. The frontal lobes are involved in planning, memory, and personality.*
d) occipital lobes
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Remember the Facts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)**
**APA=1.1**

**TB_02_217_From the Bottom Up: The Structures of the Brain_Apply_LO 2.13, APA 1.1, 1.2, 1.3**
Josefa was rollerblading when a cat jumped right in front of her, causing her to trip and fall. When she fell, she partially landed on the front side of her head near her forehead. Shortly afterward, Josefa exhibited symptoms similar to those of Phineas Gage. Which lobe would have been most affected by this fall?
a) frontal
*Correct. Phineas Gage suffered extreme trauma to the frontal lobe of his brain, impacting all sorts of functions, including his personality.*
b) temporal
*Incorrect. The famous story of Phineas Gage gave us insight into the functioning of the frontal lobe of the brain.*
c) parietal
d) occipital
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Apply What You Know, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)**
**APA=1.1; 1.2; 1.3**

**TB_02_218_From the Bottom Up: The Structures of the Brain_Apply_LO 2.13, APA 1.1, 1.3**
Sean was driving through a rough part of town late at night when a stray bullet hit the front side of his head. Both the left and right sides of his prefrontal cortex were severely damaged. As a result of the accident, Sean most likely:
a) died from his injuries.
*Incorrect. Gage did not die as a result of the accident.*
b) suffered loss of his arms and legs.
c) lost his sense of hearing.
d) suffered a change in personality.
*Correct. Personality changes could be a result of damage to the frontal lobes of the brain, as in the famous case of Phineas Gage.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: d, Apply What You Know, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)**
**APA=1.1; 1.3**

**TB_02_219_From the Bottom Up: The Structures of the Brain_Apply_LO 2.13, APA 1.1, 1.3**
Ever since he suffered a brain injury by falling from a ladder, Cian's wife has continued to tell the doctor that his personality has changed. He used to be fun loving and carefree, but he is now more critical and yells at his children for seemingly little reason. Cian is likely to have suffered damage to the _____ of his cortex.
a) occipital lobe

*Incorrect. If his vision were affected, this would be accurate.*

b) parietal lobe
c) temporal lobe
d) frontal lobe

*Correct. The frontal lobes are connected to personality and decision-making processes.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: d, Apply What You Know, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (3)**
**APA=1.1; 1.3**

**TB_02_220_From the Bottom Up: The Structures of the Brain_Understand_LO 2.13, APA 1.1**
_____ are fired when an animal performs an action or when the animal observes that same action being performed. For example, an infant will mimic the facial expressions of adults.

a) Mirror neurons

*Correct. Mirror neurons are fired.*

b) Statue neurons
c) Facial neurons
d) Observation neurons

*Incorrect. This is a fictitious name for a neuron.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Understand the Concepts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (3)**
**APA=1.1**

**TB_02_221_From the Bottom Up: The Structures of the Brain_Apply_LO 2.13, APA 1.1, 1.3**
Lena was in an automobile accident and suffered an injury to her brain, resulting in paralysis of her left arm. What part of Lena's brain was injured?

a) auditory association area
b) motor cortex

*Correct. The motor cortex is responsible for sending motor commands to the muscles of the somatic nervous system.*

c) association areas
d) somatosensory cortex

*Incorrect. This area processes information from the skin and internal body receptors for touch, temperature, and body position, but is not involved with arm muscles.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: b, Apply What You Know, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (1)**
**APA=1.1; 1.3**

**TB_02_222_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, APA 1.1**
Messages from the brain to the muscles and glands in the body begin their journey in the _____.

a) auditory association area
b) motor cortex

*Correct. Messages from the brain to the muscles and glands begin their journey in the motor cortex.*

c) association areas
d) somatosensory cortex

*Incorrect. This area is not involved with muscles and glands.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: b, Remember the Facts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)**
**APA=1.1**

## The Association Areas of the Cortex

**Learning Objective 2.14 -** Name the parts of the cortex responsible for higher forms of thought, such as language.

**TB_02_223_From the Bottom Up: The Structures of the Brain_Remember_LO 2.14, APA 1.1**
Incoming sensory messages are made sense of in _____.
a) Broca's area
*Incorrect. Broca's area is devoted to the production of speech rather than helping people make sense of incoming sensory input.*
b) the motor projection areas
c) the association areas
*Correct. The association areas help people make sense of incoming sensory input.*
d) Wernicke's area
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Remember the Facts, LO=2.14 Name the parts of the cortex responsible for higher forms of thought, such as language., (3)**
**% correct 41 a= 20 b= 14 c= 41 d= 25 *r* = .49**
**APA=1.1**

**TB_02_224_From the Bottom Up: The Structures of the Brain_Remember_LO 2.14, APA 1.1**
The area of the frontal lobe that is devoted to the production of fluent speech is the _____ area.
a) Broca's
*Correct. Broca's area is devoted to the production of fluent speech.*
b) Gall's
c) Wernicke's
*Incorrect. Wernicke's area is devoted to the production of meaningful language.*
d) Korsakoff's
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Remember the Facts, LO=2.14 Name the parts of the cortex responsible for higher forms of thought, such as language., (2)**
**APA=1.1**

**TB_02_225_From the Bottom Up: The Structures of the Brain_Apply_LO 2.14, APA 1.1, 1.3**
Luca was admitted to the hospital last week after he fell. When Luca's son visited, he found that his father was unable to get words out in a smooth, connected fashion. If Luca's difficulty speaking is due to brain damage, which area is the likely location of the damage?
a) Broca's
*Correct. Broca's area is devoted to the production of fluent speech.*
b) Gall's
c) Wernicke's
*Incorrect. Wernicke's area is devoted to the production of meaningful language.*
d) Korsakoff's
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Apply What You Know, LO=2.14 Name the parts of the cortex responsible for higher forms of thought, such as language., (2)**
**APA=1.1; 1.3**

**TB_02_226_From the Bottom Up: The Structures of the Brain_Remember_LO 2.14, APA 1.1**
The area at the back of the left temporal lobe that is crucial in the ability to listen, process, and understand what others are saying is the_____ area.
a) Broca's
*Incorrect. Broca's area is devoted to the production of fluent speech.*
b) Gall's
c) Wernicke's
*Correct. Wernicke's area is devoted to the production of meaningful language.*
d) Korsakoff's
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Remember the Facts, LO=2.14 Name the parts of the cortex responsible for higher forms of thought, such as language., (3)**

**APA=1.1**

**TB_02_227_From the Bottom Up: The Structures of the Brain_Apply_LO 2.14, APA 1.1, 1.3**
Rudy suffered a head injury in a car accident last week. Since that time, she is able to speak fluently but uses the wrong words when expressing herself. Rudy may be exhibiting _____ aphasia.

a) Broca's

*Incorrect. Someone with Broca's aphasia has halting speech and mispronounces words but does not use the wrong words.*

b) Gall's

c) Wernicke's

*Correct. Someone with Wernicke's aphasia often uses the wrong words.*

d) Korsakoff's

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Apply What You Know, LO=2.14 Name the parts of the cortex responsible for higher forms of thought, such as language., (2)**
**APA=1.1; 1.3**

**TB_02_228_From the Bottom Up: The Structures of the Brain_Apply_LO 2.14, APA 1.1, 1.3**
Aarav's mother is usually meticulous in her presentation. When picking her up for a family dinner, he noticed that her makeup was only applied to the right side of her face. Her hair was also brushed on the right side, but on the left it was matted and uncombed. Aarav immediately took her to the hospital after she was unaware of any problems. She was diagnosed with _____, which is evidenced by damage to the association areas of the right hemisphere.

a) Wernicke's aphasia

b) Broca's aphasia

*Incorrect. If her speech were affected, this could be the possible cause.*

c) spatial neglect

*Correct. This would be the cause of her attention to the right side of her body and neglecting the left.*

d) split-brain

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: c, Apply What You Know, LO=2.14 Name the parts of the cortex responsible for higher forms of thought, such as language., (3)**
**APA=1.1; 1.3**

## The Cerebral Hemispheres

**Learning Objective 2.15 -** Explain how some brain functions differ between the left and right hemispheres.

**TB_02_229_From the Bottom Up: The Structures of the Brain_Remember_LO 2.15, APA 1.1**
Which of the following is the upper part of the brain consisting of two cerebral hemispheres and the structures that connect them?

a) occipital lobe

b) cerebrum

*Correct. The cerebrum consists of the two cerebral hemispheres and the structures that connect them.*

c) corpus callosum

d) cerebellum

*Incorrect. The cerebellum is at the base of the skull, not the upper part of the brain.*

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: b, Remember the Facts, LO=2.15 Explain how some brain functions differ between the left and right hemispheres., (3)**
**% correct 41 a= 2 b= 41 c= 40 d= 18 *r* = .35**
**APA=1.1**

**TB_02_230_From the Bottom Up: The Structures of the Brain_Apply_LO 2.15, APA 1.1**
Since Denise is a split-brain patient, we can infer that she likely has a history of _____.

a) mental illness

b) severe epilepsy

*Correct. Severe epilepsy is one of the very few medical conditions that is treated by using a split-brain procedure.*

c) anosognosia
d) frontal lobe damage

*Incorrect. Split-brain procedures are not used to treat frontal lobe damage; in fact, it would make no sense at all to use this procedure for this type of medical problem.*

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: b, Apply What You Know, LO=2.15 Explain how some brain functions differ between the left and right hemispheres., (1)**
**APA=1.1**

**TB_02_231_From the Bottom Up: The Structures of the Brain_Apply_LO 2.15, APA 1.1, 1.3**
Malin has decided to undergo surgery to treat her severe epilepsy. Consequently, her doctors will use a surgical procedure in which they will sever her _____.

a) parietal lobe
b) corpus callosum

*Correct. The corpus callosum is the thick band of axons that connects the left and right cerebral hemispheres. It is what is severed during a split-brain procedure to treat severe epilepsy.*

c) cerebral cortex
d) subcortical structure

*Incorrect. In order to treat severe epilepsy, the corpus callosum is cut in a split-brain procedure. This is a last treatment effort and is only done in the most serious cases.*

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: b, Apply What You Know, LO=2.15 Explain how some brain functions differ between the left and right hemispheres., (2)**
**APA=1.1; 1.3**

**TB_02_232_From the Bottom Up: The Structures of the Brain_Remember_LO 2.15, APA 1.2**
Researcher Roger Sperry won a Nobel Prize for his research on epilepsy. Sperry cut through the _____, which joins the two hemispheres of the brain.

a) medulla
b) pons
c) pituitary gland

*Incorrect. This part of the brain is not severed in split-brain individuals.*

d) corpus callosum

*Correct. This part of the brain is severed, creating "two brains in one body."*

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: d, Remember the Facts, LO=2.15 Explain how some brain functions differ between the left and right hemispheres., (1)**
**% correct 82 a= 11 b= 5 c= 2 d= 82 *r* = .38**
**APA=1.2**

**TB_02_233_From the Bottom Up: The Structures of the Brain_Understand_LO 2.15, APA 1.1**
Traditionally, many have made the analogy that the left brain is to the right brain as _____.

a) logical is to artistic

*Correct. Though recent research suggests that this analogy may not be completely accurate, it is what most people have believed about the brain for many years.*

b) verbal is to analytical
c) intuitive is to perceptual

*Incorrect. Traditionally, the left brain has been thought of as analytical, and the right brain has been thought of as perceptual.*

d) intuitive is to analytical

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Understand the Concepts, LO=2.15 Explain how some brain functions differ between the left and right hemispheres., (2)**
**APA=1.1**

**TB_02_234_From the Bottom Up: The Structures of the Brain_Apply_LO 2.15, APA 1.1**
If Jack's brain is like that of most people, then language will be handled by his _____.
a) corpus callosum
b) occipital lobe
c) right hemisphere
*Incorrect. The right hemisphere does not control language for most people.*
d) left hemisphere
*Correct. For most people, the left hemisphere controls language.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: d, Apply What You Know, LO=2.15 Explain how some brain functions differ between the left and right hemispheres., (2)**
**APA=1.1**

**TB_02_235_From the Bottom Up: The Structures of the Brain_Understand_LO 2.15, APA 1.1**
Which of the following is a function of the right hemisphere?
a) perception, recognition of emotion, and recognition of patterns
*Correct. These are functions of the right hemisphere.*
b) sense of time and rhythm
c) speech, handwriting, and calculation
d) language processing in most individuals
*Incorrect. This is a function of the left hemisphere.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: a, Understand the Concepts, LO=2.15 Explain how some brain functions differ between the left and right hemispheres., (2)**
**APA=1.1**

**TB_02_236_From the Bottom Up: The Structures of the Brain_Remember_LO 2.15, APA 1.1**
Which is NOT a specific function of the left hemisphere of the brain?
a) spoken language
b) written language
c) mathematical calculations
*Incorrect. This is controlled by the left hemisphere.*
d) pattern recognition
*Correct. This is controlled by the right hemisphere.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: d, Remember the Facts, LO=2.15 Explain how some brain functions differ between the left and right hemispheres., (1)**
**APA=1.1**

**TB_02_237_From the Bottom Up: The Structures of the Brain_Remember_LO 2.15, APA 1.1**
Which is NOT a specific function of the right hemisphere of the brain?
a) nonverbal
b) analysis of detail
*Correct. This is controlled by the left hemisphere.*
c) music and artistic expression
d) emotional thought and recognition
*Incorrect. This is controlled by the right hemisphere.*
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: b, Remember the Facts, LO=2.15 Explain how some brain functions differ between the left and right hemispheres., (1)**
**APA=1.1**

**TB_02_238_From the Bottom Up: The Structures of the Brain_Understand_LO 2.15, APA 1.1**
Cliff suggested that since he is right-handed, he must have be a "left-brain" person. Cliff is ill advised because
a) if Cliff is right-handed, then he would be right-brained.
b) regardless of dominant hand, both sides of the brain work as an integrated whole.

*Correct. With the exception of a split brain patient, people use both sides of their brain as an integrated whole.*

c) handedness only determines the language centers, not brain dominance.

*Incorrect. While most individual have their language center in the left hemisphere, some right-handed people may also have their language in the right hemisphere.*

d) his handedness may have been influenced by his upbringing, rather than brain dominance.

**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: b, Understand the Concept, LO=2.15 Explain how some brain functions differ between the left and right hemispheres., (3)**
**APA=1.1**

## Applying Psychology to Everyday Life

### Paying Attention to Attention-Deficit/Hyperactivity Disorder

**Learning Objective 2.16 -** Identify some potential causes of attention-deficit/hyperactivity disorder

**TB_02_240_Applying Psychology to Everyday Life_Apply_LO 2.16, APA 1.1, 1.3**
Adironke has recently been diagnosed with attention-deficit/hyperactivity disorder (ADHD). Her psychiatrist tells her that there are several different brain areas that might contribute to her various symptoms. Which of the following would the psychiatrist be UNLIKELY to name as an involved brain structure?

a) the cerebellum
b) the basal ganglia
c) the striate nucleus

*Correct. There is no research implicating this brain structure in bipolar disorder.*

d) the corpus callosum

*Incorrect. The brain structure that joins the right and left hemispheres has been found to play a role in bipolar disorder.*

**TOPIC: Applying Psychology to Everyday Life**
**ANS: c, Apply What You Know, LO=2.16 Identify some potential causes of attention-deficit/hyperactivity disorder., (2)**
**APA=1.1; 1.3**

**TB_02_241_Applying Psychology to Everyday Life_Remember_LO 2.15 APA 1.1**
Which of the following cognitive abilities has been found to be normal in people diagnosed with attention-deficit/hyperactivity disorder?

a) some aspects of attention

*Correct. Some research suggests that some aspects of attention are actually normal in individuals with ADHD.*

b) vigilance (watching out for something important)

*Incorrect. This is a problem for individuals with ADHD.*

c) staying on-task
d) engaging in self-control

**TOPIC: Applying Psychology to Everyday Life**
**ANS: a, Remember the Facts, LO=2.15 Identify some potential causes of attention-deficit/hyperactivity disorder., (3)**
**APA=1.1**

## TRUE OR FALSE

**TB_02_242_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
One function of the nervous system is to send information to and receive information from all parts of the body.
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: T, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (1)**
**APA=1.1**

**TB_02_243_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
The axon receives messages from other neurons.
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: F, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (2)**
**APA=1.1**

**TB_02_244_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
Glial cells provide structure for neurons.
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: T, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (3)**
**APA=1.1**

**TB_02_245_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
Myelin not only insulates the neuron, it also slows down the neural message helping with transmission of messages traveling down the axon.
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: F, Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (1)**
**APA=1.1**

**TB_02_246_Neurons and Nerves: Building the Network_Remember_LO 2.2, APA 1.1**
A neuron's cell membrane is semipermeable.
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: T, Remember the Facts, LO=2.2 Explain the action potential., (2)**
**APA=1.1**

**TB_02_247_Neurons and Nerves: Building the Network_Remember_LO 2.2, APA 1.1**
Neurons that are at rest are still electrically charged.
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: T, Remember the Facts, LO=2.2 Explain the action potential., (1)**
**APA=1.1**

**TB_02_248_Neurons and Nerves: Building the Network_Remember_LO 2.2, APA 1.1**
During a resting potential, the neuron is positively charged inside and negatively charged outside.
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: F, Remember the Facts, LO=2.2 Explain the action potential., (3)**
**APA=1.1**

**TB_02_249_Neurons and Nerves: Building the Network_Understand_LO 2.3, APA 1.1**
A synapse is like a locked door that only certain neurotransmitter keys can unlock.
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: F, Understand the Concepts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (1)**
**APA=1.1**

**TB_02_250_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
Acetylcholine is an agonist or an excitatory neurotransmitter also found in a part of the brain responsible for forming new memories and stimulating muscle contraction.
**TOPIC: Neurons and Nerves: Building the Network**
**ANS: T, Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (3)**
**APA=1.1**

**TB_02_251_An Overview of the Nervous System_Remember_LO 2.4, APA 1.1**
The central nervous system consists of the brain and spinal cord.

**TOPIC: An Overview of the Nervous System**
**ANS: T, Remember the Facts, LO=2.4 Describe how the components of the central nervous system interact ad how they may respond to experience or injury., (1)**
**APA=1.1**

**TB_02_252_An Overview of the Nervous System_Remember_LO 2.4, APA 1.1**
Motor neurons carry messages from special receptors in the skin, from muscles, and from sense organs to the spinal cord.
**TOPIC: An Overview of the Nervous System**
**ANS: F, Remember the Facts, LO=2.4 Describe how the components of the central nervous system interact ad how they may respond to experience or injury., (1)**
**APA=1.1**

**TB_02_253_An Overview of the Nervous System_Remember_LO 2.4, APA 1.1**
Interneurons connect sensory neurons to the motor neurons.
**TOPIC: An Overview of the Nervous System**
**ANS: T, Remember the Facts, LO=2.4 Describe how the components of the central nervous system interact ad how they may respond to experience or injury., (2)**
**APA=1.1**

**TB_02_254_An Overview of the Nervous System_Remember_LO 2.4, APA 1.1**
Neuroplasticity is the concept that when the brain is injured, it is unable to change the structure and function of the cells to adjust to the damage.
**TOPIC: An Overview of the Nervous System**
**ANS: F, Remember the Facts, LO=2.4 Describe how the components of the central nervous system interact ad how they may respond to experience or injury., (3)**
**APA=1.1**

**TB_02_255_An Overview of the Nervous System_Remember_LO 2.4, APA 1.1**
Stem cells can become other cells, such as blood cells, nerve cells, and brain cells.
**TOPIC: An Overview of the Nervous System**
**ANS: T, Remember the Facts, LO=2.4 Describe how the components of the central nervous system interact ad how they may respond to experience or injury., (2)**
**APA=1.1**

**TB_02_256_An Overview of the Nervous System_Remember_LO 2.5, APA 1.1**
The somatic nervous system is made up of nerves carrying messages from the central nervous system to the muscles of the body.
**TOPIC: An Overview of the Nervous System**
**ANS: T, Remember the Facts, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (3)**
**APA=1.1**

**TB_02_257_An Overview of the Nervous System_Remember_LO 2.5, APA 1.1**
Activation of the sympathetic nervous system leads to pupil dilation, inhibition of digestion, and an accelerated heartbeat.
**TOPIC: An Overview of the Nervous System**
**ANS: T, Remember the Facts, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (1)**
**APA=1.1**

**TB_02_258_ The Endocrine Glands_Remember_LO 2.7, APA 1.1**
Endocrine glands secrete chemicals directly into the body's tissues through specialized ducts.
**TOPIC: The Endocrine Glands**
**ANS: F, Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (1)**
**APA=1.1**

**TB_02_259_ The Endocrine Glands_Remember_LO 2.7, APA 1.1**
The pineal gland secrets a hormone called insulin.
**TOPIC: The Endocrine Glands**
**ANS: F, Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (2)**
**APA=1.1**

**TB_02_260_ The Endocrine Glands_Remember_LO 2.7, APA 1.1**
The thyroid gland secretes a hormone called thyroxin.
**TOPIC: The Endocrine Glands**
**ANS: T, Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (1)**
**APA=1.1**

**TB_02_261_ The Endocrine Glands_Remember_LO 2.7, APA 1.1**
If the pancreas secretes too little insulin, the result is diabetes.
**TOPIC: The Endocrine Glands**
**ANS: T, Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (3)**
**APA=1.1**

**TB_02_262_ The Endocrine Glands_Remember_LO 2.7, APA 1.1**
If the body secretes too much insulin, the result is hyperglycemia.
**TOPIC: The Endocrine Glands**
**ANS: F, Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (3)**
**APA=1.1**

**TB_02_263 The Endocrine Glands _Remember_LO 2.8,_APA 1.1**
When the body's resources are gone, the parasympathetic nervous system activates and the individual is in the resistance stage of the general adaptation syndrome.
**TOPIC: The Endocrine Glands**
**ANS: F, Remember the Facts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (3)**
**APA=1.1**

**TB_02_264 The Endocrine Glands _Remember_LO 2.8_APA 1.1**
Research reveals that there is a relationship between prolonged stress and certain diseases of adaptation such as high blood pressure and ulcers.
**TOPIC: The Endocrine Glands**
**ANS: T, Remember the Facts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (1)**
**APA=1.1**

**TB_02_265 The Endocrine Glands _Remember_LO 2.8_APA 1.1**
The field of psychoneuroimmunology studies the effects of psychological factors such as stress, emotions, thinking, and behavior on the immune system.
**TOPIC: The Endocrine Glands**
**ANS: T, Remember the Facts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (2)**
**APA=1.1**

**TB_02_266_Looking Inside the Living Brain_Remember_LO 2.10, APA 1.1**
Positron-emission tomography (PET scan) is a brain-imaging method using radio waves and magnetic fields of the body to produce detailed images of the brain.
**TOPIC: Looking Inside the Living Brain**
**ANS: F, Remember the Facts, LO=2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure., (3)**

**APA=1.1**

**TB_02_267_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, APA 1.1**
The medulla is responsible for people's ability to selectively attend to certain kinds of information in their surroundings.
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: F, Remember the Facts, LO=2.11 Identify the different structures of the hindbrain and the function of each., (2)**
**APA=1.1**

**TB_02_268_From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, APA 1.1**
A person who suffered brain damage is likely to have problems controlling his emotions as a result of damage with the connection from the temporal lobe to the limbic system.
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: F, Apply What You Know, LO=2.12 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation., (2)**
**APA=1.1**

**TB_02_269_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, APA 1.1**
The cortex "wrinkles" as a result of fluid filling the brain over the lifespan.
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: F, Remember the Facts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (3)**
**APA=1.1**

**TB_02_270_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, APA 1.1**
Researchers in the field of autism are considering that the condition is related to a faulty mirror system in the brain.
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: T, Remember the Facts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (3)**
**APA=1.1**

**TB_02_271_From the Bottom Up: The Structures of the Brain_Remember_LO 2.14, APA 1.1**
The occipital lobes contain the visual cortex, where visual signals are processed.
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: T, Remember the Facts, LO=2.14 Name the parts of the cortex responsible for higher forms of thought, such as language., (1)**
**APA=1.1**

**TB_02_272_From the Bottom Up: The Structures of the Brain_Remember_LO 2.15, APA 1.1**
The cerebrum is divided into two hemispheres that control opposite sides of the body.
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: T, Remember the Facts, LO=2.15 Explain how some brain functions differ between the left and right hemispheres., (1)**
**APA=1.1**

**TB_02_273_From the Bottom Up: The Structures of the Brain_Understand_LO 2.15, APA 1.1**
The cerebral cortex is severed in individuals who are considered to have a "split brain" after a surgery to stop epileptic seizures.
**TOPIC: From the Bottom Up: The Structures of the Brain**
**ANS: F, Understand the Concepts, LO=2.15 Explain how some brain functions differ between the left and right hemispheres., (2)**
**APA=1.1**

## SHORT ANSWER

**TB_02_274_Neurons and Nerves: Building the Network_Remember_LO 2.1, 2.2, APA 1.1**
List three main parts of the human neuron and explain the role each plays in the transmission of neural communication.
**TOPIC: Neurons and Nerves: Building the Network**
**Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each and LO=2.2 Explain the action potential., (2)**
**APA=1.1**

**TB_02_275_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1**
List two different functions of glial cells.
**TOPIC: Neurons and Nerves: Building the Network**
**Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each., (1)**
**APA=1.1**

**TB_02_276_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
What is a synapse?
**TOPIC: Neurons and Nerves: Building the Network**
**Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (1)**
**APA=1.1**

**TB_02_277_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
What are neurotransmitters?
**TOPIC: Neurons and Nerves: Building the Network**
**Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (1)**
**APA=1.1**

**TB_02_278_Neurons and Nerves: Building the Network_Remember_LO 2.3, APA 1.1**
Name three neurotransmitters and their functions.
**TOPIC: Neurons and Nerves: Building the Network**
**Remember the Facts, LO=2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (3)**
**APA=1.1**

**TB_02_279_An Overview of the Nervous System_Analyze_LO 2.4, 2.5, APA 1.1**
Explain the difference between the Central Nervous System (CNS) and the Peripheral Nervous System (PNS).
**TOPIC: An Overview of the Nervous System**
**Analyze It, LO=2.4 Describe how the components of the central nervous system interact and how they may respond to experience or injury and LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (3)**
**APA=1.1**

**TB_02_280_An Overview of the Nervous System_Analyze_LO 2.5, APA 1.1**
What is the difference between the sympathetic and parasympathetic nervous systems?
**TOPIC: An Overview of the Nervous System**
**Analyze It, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (2)**
**APA=1.1**

**TB_02_281_ The Endocrine Glands_Remember_LO 2.7, APA 1.1**
Name two hormones that are of particular interest to psychologists and state which gland they are related to and some of the tasks that these hormones perform.
**TOPIC: The Endocrine Glands**

**Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (3)**
**APA=1.1**

**TB_02_282 The Endocrine Glands _Remember_LO 2.8_APA 1.1**
What are the two parts of the nervous system that are activated during the general adaptation syndrome? Which part is activated during each of the three stages?
**TOPIC: The Endocrine Glands**
**Remember the Facts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (3)**
**APA=1.1**

**TB_02_283 The Endocrine Glands _Apply_LO 11.5_APA 1.1**
List three types of physical illnesses that can be made worse by the presence of chronically elevated stress.
**TOPIC: The Endocrine Glands**
**Apply What You Know, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (1)**
**APA=1.1**

**TB_02_284_Looking Inside the Living Brain_Remember_LO 2.10, APA 1.1, 2.4**
How does an MRI (magnetic resonance imaging) scan allow the exploration of the brain without the injection of chemicals? What is the difference between a traditional MRI and MRI spectroscopy?
**TOPIC: Looking Inside the Living Brain**
**Remember the Facts, LO=2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure and function., (3)**
**APA=1.1; 2.4**

**TB_02_285_From the Bottom Up: The Structures of the Brain_Understand_LO 2.13 APA 1.1**
Why is the cortex in the brain so wrinkled?
**TOPIC: From the Bottom Up: The Structures of the Brain**
**Understand the Concepts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)**
**APA=1.1**

**TB_02_286_From the Bottom Up: The Structures of the Brain_Remember_LO 2.14, APA 1.1**
What are the symptoms of Broca's aphasia?
**TOPIC: From the Bottom Up: The Structures of the Brain**
**Remember the Facts, LO=2.14 Name the parts of the cortex responsible for higher forms of thought, such as language., (3)**
**APA=1.1**

**TB_02_287_From the Bottom Up: The Structures of the Brain_Remember_LO 2.14, APA 1.1**
What are the symptoms of Wernicke's aphasia?
**TOPIC: From the Bottom Up: The Structures of the Brain**
**Remember the Facts, LO=2.14 Name the parts of the cortex responsible for higher forms of thought, such as language., (3)**
**APA=1.1**

**TB_02_288_From the Bottom Up: The Structures of the Brain_Remember_LO 2.15, APA 1.2**
Briefly explain Roger Sperry's split-brain research.
**TOPIC: From the Bottom Up: The Structures of the Brain**
**Remember the Facts, LO=2.15 Explain how some brain functions differ between the left and right hemispheres., (2)**
**APA=1.2**

**TB_02_289_From the Bottom Up: The Structures of the Brain_Analyze_LO 2.15, APA 1.1**

What are the differences in how the right and left cerebral hemispheres function?
**TOPIC: From the Bottom Up: The Structures of the Brain**
**Analyze It, LO=2.15 Explain how some brain functions differ between the left and right hemispheres., (2)**
**APA=1.1**

## ESSAY

**TB_02_290_Neurons and Nerves: Building the Network_Remember_LO 2.1, 2.2, APA 1.1**
What is a neuron? Describe the major parts of a neuron and their functions. Explain the process of how a neural message is transmitted from the end of one neuron to the beginning of another and the process by which a neuron moves from a resting state (resting potential) to firing (action potential) and then back to a resting state.
**TOPIC: Neurons and Nerves: Building the Network**
**Remember the Facts, LO=2.1 Identify the parts of a neuron and the function of each and LO=2.2 Explain the action potential., (2)**
**APA=1.1**

**TB_02_291_An Overview of the Nervous System_Remember_LO 2.4, APA 1.1**
Describe the functions of the brain and the spinal cord. How are these functions similar? How are these functions dissimilar?
**TOPIC: An Overview of the Nervous System**
**Remember the Facts, LO=2.4 Describe how the components of the central nervous system interact and how they may respond to experience or injury., (1)**
**APA=1.1**

**TB_02_292_An Overview of the Nervous System_Remember_LO 2.5, APA 1.1**
What are the primary functions of the sympathetic and parasympathetic components of the peripheral nervous system? Describe a situation or experience in which activation of the sympathetic and parasympathetic divisions has occurred.
**TOPIC: An Overview of the Nervous System**
**Remember the Facts, LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (1)**
**APA=1.1**

**TB_02_293_ The Endocrine Glands_Remember_LO 2.6, 2.7, APA 1.1**
How does the endocrine system influence behavior? Describe the functions of three glands and the hormones each secretes.
**TOPIC: The Endocrine Glands**
**Remember the Facts, LO=2.6 Explain why the pituitary gland is known as the "master gland" and LO=2.7 Recall the role of various endocrine glands., (2)**
**APA=1.1**

**TB_02_294 The Endocrine Glands _Remember_LO 2.8_APA 1.1**
Describe the stages of the general adaptation syndrome. What problems occur with continued exposure to stress?
**TOPIC: The Endocrine Glands**
**Remember the Facts, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (2)**
**APA=1.1**

**TB_02_295 The Endocrine Glands _Apply_LO 2.8_APA 1.1, 1.3**
Compare the general adaptation syndrome to a group of volunteer firefighters sitting around their station house when a fire call comes in. Describe how the stages might be reflected in the actions or characteristics of the firefighters.
**TOPIC: The Endocrine Glands**
**Apply What You Know, LO=2.8 Describe how the autonomic nervous system and body are impacted by stress., (2)**

**APA=1.1; 1.3**

**TB_02_296_Looking Inside the Living Brain_Apply_LO 2.9, 2.10, APA 1.1**
Choose any three methods that psychologists use to learn about the functions of the brain. Describe the method, how it works, and the type of information we can learn from it.
**TOPIC: Looking Inside the Living Brain**
**Apply What You Know, LO=2.9 Describe how lesioning studies and brain stimulation are used to study the brain and LO=2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure and function., (3)**
**APA=2.4**

**TB_02_297_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, 2.14, APA 1.1**
Identify the four lobes of the cerebral cortex and identify the major functions that are controlled by each of them.
**TOPIC: From the Bottom Up: The Structures of the Brain**
**Remember the Facts, LO=2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body and LO=2.14 Name the parts of the cortex responsible for higher forms of thought, such as language., (2)**
**APA=1.1**

# Test Yourself

*Pick the best answer.*

1. In the structure of the neuron, the _____ receives messages from other cells.
a. axon
b. dendrite
c. soma
d. myelin

2. Oligodendrocytes and Schwann cells generate a fatty substance known as _____.
a. glial
b. soma
c. myelin
d. neurilemma.

3. Which of the following insulates and protects a neuron's axon, as well as helps speed along electrical impulses?
a. synaptic knobs
b. receptor sites
c. myelin sheath
d. neuromodulators

4. When a neuron is in the resting potential state, the neuron is negatively charged on the _____ and positively charged on the _____.
a. inside; outside
b. outside; inside
c. top; bottom
d. bottom; top

5. Which neurotransmitter stimulates muscle cells to contract but slows contractions in the heart?
a. acetylcholine
b. GABA
c. serotonin
d. endorphin

6. Heroin mimics the actions of endorphins, inhibiting pain signals and creating a "high" feeling. Heroin is an example of a(n) _____.
a. protagonist
b. antagonist
c. agonist
d. glial cell

7. Involuntary muscles are controlled by the _____ nervous system.
a. somatic
b. autonomic
c. sympathetic
d. parasympathetic

8. As you take notes, your heart beats at a normal rate. Your breathing is normal and your stomach slowly digests your earlier meal. What division of the peripheral nervous system is currently in action?
a. sympathetic
b. parasympathetic
c. autonomic
d. somatic

9. Arief has had difficulty sleeping for the past 6 months, and his body seemingly no longer differentiates between night and day. His doctor believes the problem lies with Robert's endocrine system. What gland will Arief's physician focus on?
a. pituitary
b. adrenal
c. thyroid
d. pineal

10. Which gland(s) is/are known to influence all other glands within the endocrine system?
a. pineal gland
b. pituitary gland
c. thyroid gland
d. adrenal glands

11. Meredith is a subject in a study on memory and problem solving. The researcher is applying magnetic pulses to her brain through copper wire coils positioned directly above her scalp. Meredith's study would BEST be described as a(n)
a. invasive stimulation technique.
b. noninvasive stimulation technique.
c. EEG technique.
d. PET technique.

12. Which technique of studying the brain involves injecting the patient with radioactive glucose?
a. EEG
b. CT
c. MRI
d. PET

13. Cristina often sleeps soundly and rarely awakens to any outside noise. However, the cries of Cristina's baby can awaken her immediately. What part of the brain is responsible for this reaction?
a. medulla
b. pons
c. reticular formation
d. cerebellum

14. Callie and Penny are synchronized swimmers for their college swim team. They often work long hours to ensure the movements in their routine are perfectly timed. What part of their brains must Callie and Penny rely most upon?
a. medulla
b. pons
c. reticular formation
d. cerebellum

15. Your psychology professor refers to this as the great relay station of the brain. What part is he or she referring to?
a. thalamus
b. hypothalamus
c. hippocampus
d. amygdala

16. Which part of the brain is involved in the creation of memories and is often linked to Alzheimer's disease?
a. hippocampus
b. thalamus
c. hypothalamus
d. amygdala

17. Lexie suffered a severe blow to the back of her head when she was thrown from her horse. Subsequently, her occipital lobe has been injured. Which of her senses has the highest chance of being affected?
a. hearing
b. touch
c. taste and smell
d. vision

18. Derek's grandfather recently suffered a stroke and has had difficulty with language production ever since. Most likely, he has experienced damage to the _____ area of his brain.
a. right rear
b. left frontal
c. left rear
d. right frontal

19. Izzie is recovering from a brain injury. She is able to speak fluently but often uses incorrect words in a sentence. In one instance at a friend's birthday party, she said, "I would like something to drink. Can I have some battery?" Izzie's problem is known as _____.
a. spatial neglect
b. visual agnosia
c. Broca's aphasia
d. Wernicke's aphasia

20 Although the brain works largely as a whole, which of the following is NOT a correct pairing of hemisphere and function?
a. left; control of right-handed motor functions
b. right; control of right-handed motor functions
c. right; recognition of faces
d. left; reading

# EXTRA BANK OF QUESTIONS

## 2: THE BIOLOGICAL PERSPECTIVE

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1. A long structure leaving the cell body that action potential travel along is called the _____.
a. cell membrane
b. dendrite
c. axon
d. myelin sheath
**Answer c % correct 70 a= 3 b= 16 c= 70 d= 11 *r* = .38**

2. Neurons in the brain that carry messages from one neuron to another and do most of the work of the nervous system are called _____.
a. afferent neurons
b. active neurons
c. efferent neurons
d. interneurons
**Answer d % correct 42 a= 25 b= 14 c= 19 d= 42 *r* = .42**

3. Physiological psychologists study _____.
a. human mental and physical growth from the prenatal period through childhood, adolescence, adulthood, and old age
b. the biological basis for human behavior.
c. the differences among individuals in such traits as anxiety, sociability, self-esteem, the need for achievement, and aggressiveness
d. how people influence one another
**Answer b % correct 49 a= 26 b= 49 c= 20 d= 5 *r* = .42**

4. The short fibers which extend from the neurons allowing it to receive messages from other neurons are
a. axons
b. dendrites
c. nerve bundles
d. synapses
**Answer b % correct 79 a= 19 b= 79 c= 1 d= 1 *r* = .38**

5. A young man reads in a letter that he has just won $1,000 in a state-wide lottery and he literally jumps for joy. Which neurons are sending messages from his brain to his legs ordering them to jump?
a. sensory neurons
b. motor neurons
c. interaction neurons
d. association neurons
**Answer b % correct 89 a= 4 b= 89 c= 2 d= 4 *r* = .34**

6. Which of the following neurotransmitters is known for its role in schizophrenia and Parkinson's disease?
a. acetylcholine
b. dopamine
c. serotonin
d. norepinephrine
**Answer b % correct 80 a= 11 b= 80 c= 2 d= 7 *r* = .21**

7. The part of the neuron that carries outgoing messages either to another neuron or to a muscle or gland is the

a. myelin sheath
b. axon
c. dendrite
d. cell body
**Answer b % correct 80 a= 1 b= 80 c= 19 d= 0 *r* = .21**

8. Which of the following is true of neural impulses in a single neuron?
a. The neuron may fire during the absolute refractory period.
b. The strength of a neural impulse increases as the strength of the incoming message gets stronger.
c. The strength of a neural impulse decreases as the strength of the incoming message gets stronger.
d. The strength of a neural impulse is the same each time the neuron fires.
**Answer d % correct 60 a= 6 b= 30 c= 4 d= 60 *r* = .35**

9. The three parts of every neuron are:
a. myelin; glia; cell body.
b. dendrite; cell body; axon.
c. glia; dendrite; axon.
d. myelin; cell body; dendrite.
**Answer b % correct 83 a= 1 b= 83 c= 3 d= 13 *r* = .23**

10. The small gap between adjacent neurons is the:
a. glia.
b. myelin sheath.
c. synaptic cleft.
d. terminal.
**Answer c % correct 83 a= 2 b= 6 c= 83 d= 9 *r* = .20**

11. The neural impulse traveling down the axon is _____; it gets across the synapse by _____.
a. electrical; remaining electrical but changing from positively charged to negatively charged
b. electrical; remaining electrical but changing from negatively charged to positively charged
c. electrical; being changed into a chemical message
d. chemical; being changed into an electrical message
**Answer c % correct 50 a= 13 b= 22 c= 50 d= 13 *r* = .37**

12. Neurons are:
a. cells in the brain that are believed to help clean and feed brain cells.
b. cells that send and receive information.
c. bundles of nerves.
d. chemical transmitters found in the hypothalamus.
**Answer b % correct 96 a= 0 b= 96 c= 3 d= 1 *r* = .44**

13. Axons:
a. receive/detect neural impulses.
b. carry messages away from a cell body.
c. secrete chemicals to lubricate the cell body.
d. are found in the cell body.
**Answer b % correct 82 a= 15 b= 82 c= 1 d= 3 *r* = .36**

14. The myelin sheath:
a. is a fatty substance protecting the dendrites.
b. helps to speed up neural messages within the cell.
c. is found in all neurons.
d. protects the cell's vesicles.
**Answer b % correct 51 a= 30 b= 51 c= 5 d= 14 *r* = .44**

15. The basic message-carrying cells of the nervous system are labeled:
a. dendrites.
b. neurons.
c. nerves.
d. ganglia.
**Answer b % correct 91 a= 5 b= 91 c= 4 d= 0 *r* = .23**

16. What kinds of neurons are connected to receptor cells in the skin, muscles, and joints?
a. peripheral neurons
b. interneurons
c. sensory neurons
d. motor neurons
**Answer c % correct 70 a= 3 b= 5 c= 70 d= 22 *r* = .27**

17. A nerve impulse from one neuron affects the activity of a neighboring neuron at a point of interaction called the:
a. corpuscle.
b. synapse.
c. transmission cleft.
d. neuronal junction.
**Answer b % correct 96 a= 0 b= 96 c= 3 d= 1 *r* = .26**

18. Assume that you are testing a split-brain human subject whose language center is in his left hemisphere. If you place a house key into his left hand, he will:
a. not be able to later select the object he was holding from a group of various objects.
b. not be able to tell you what object he is presently holding.
c. immediately be able to tell you what he is holding.
d. be able to tell you what he is presently holding if allowed to think about it for several seconds.
**Answer b % correct 80 a= 5 b= 80 c= 6 d= 8 *r* = .24**

19. Specialized cells in the brain which send and receive information are called:
a. limbic cells.
b. neurons.
c. ganglia
d. gonads.
**Answer b % correct 83 a= 15 b= 83 c= 2 d= 0 *r* = .21**

20. Axons
a. may be up to a quarter of a mile long.
b. carry messages away from a cell body.
c. are primarily responsible for the hypothalamic functions of regulation and motivation of sexual functions.
d. are contained within the cell nucleus.
**Answer b % correct 89 a= 7 b= 89 c= 1 d= 3 *r* = .33**

21. Dendrites:
a. may be up to a quarter of a mile long.
b. carry messages to cell bodies.
c. are primarily responsible for the hypothalamic functions of regulation and motivation of sexual functions.
d. are contained within the cell nucleus.
**Answer b % correct 82 a= 10 b= 82 c= 4 d= 4 *r* = .26**

22. Neural messages travel faster on axons which
a. are polarized.
b. are not exposed to acetylcholine (ACh).
c. are located in the hypothalamus.
d. have a myelin sheath.
**Answer d % correct 88 a= 6 b= 2 c= 5 d= 88 *r* = .35**

23. A synapse is most important in:
a. separating the medulla from the hindbrain.
b. regulating the parasympathetic nervous system.
c. the process of transmitting messages between neurons.
d. connecting the basal ganglia.
**Answer c % correct 96 a= 2 b= 2 c= 96 d= 0 *r* = .37**

24. The smallest unit in the nervous system is the _____.
a. dendrite
b. neuron
c. axon
d. myelin sheath
**Answer b % correct 64 a= 21 b= 64 c= 7 d= 8 *r* = .34**

25. The cell which underlies the activity of the entire nervous system is the _____.
a. transmitter cell
b. amoeba
c. neuron
d. carcinoma
**Answer c % correct 83 a= 16 b= 0 c= 83 d= 1 *r* = .34**

26. The short fibers which extend from the neuron allowing it to receive messages from other neurons are _____.
a. axons
b. dendrites
c. nerve bundles
d. cell membranes
**Answer b % correct 86 a= 1 b= 1 c= 86 d= 12 *r* = .26**

27. The part of the neuron that carries outgoing messages either to another neuron or to a muscle or gland is the _____.
a. myelin sheath
b. axon
c. dendrite
d. cell body
**Answer b % correct 81 a= 2 b= 81 c= 18 d= 0 *r* = .20**

28. The purpose of the myelin sheath is to _____.
a. provide a place for respiration and metabolism to occur
b. carry messages from the spinal cord to the brain
c. insulate the neuron so it can act more efficiently
d. receive messages from outside the neuron and carry them to the cell nucleus
**Answer c % correct 87 a= 0 b= 3 c= 87 d= 10 *r* = .37**

29. Most axon terminals contain a number of tiny oval sacs called _____.
a. synaptic vesicles
b. synaptic knobs
c. neurotransmitters
d. receptor sites
**Answer a % correct 41 a= 41 b= 6 c= 35 d= 15 *r* = .21**

30. When a neural impulse reaches the end of an axon, it causes the tiny oval sacs at the end of the axon to release chemicals called _____.
a. effectors

b. neurotransmitters
c. stimulants
d. ions
**Answer b % correct 95 a= 3 b= 95 c= 0 d= 2 *r* = .27**

31. Which of the following is NOT true of all neurotransmitters?
a. They are chemicals.
b. They are stored in synaptic vesicles.
c. They are released across the synaptic space.
d. They increase the likelihood that the next neuron will fire.
**Answer d % correct 70 a= 11 b= 12 c= 7 d= 70 *r* = .31**

32. An emergency room physician must quickly treat a patient who has been bitten by a black widow spider. The physician knows she must:
a. prevent the buildup of acetylcholine in the patient's nervous system.
b. prevent the buildup of catecholamines in the patient's nervous system.
c. prevent the breakdown of catecholamines in the patient's nervous system.
d. prevent the reabsorption of acetylcholine in the patient's nervous system.
**Answer a % correct 73 a= 73 b= 2 c= 7 d= 18 *r* = .33**

33. Axons _____.
a. receive/detect neural impulses
b. carry messages away from a cell body
c. secrete chemicals to lubricate the cell body
d. are found in the cell body
**Answer b % correct 80 a= 15 b= 80 c= 1 d= 3 *r* = .30**

34. The branch of the autonomic nervous system that prepares the body for quick action in an emergency is the _____ division.
a. central
b. secondary
c. sympathetic
d. parasympathetic
**Answer c % correct 73 a= 1 b= 7 c=73 d= 19 *r* = .34**

35. The system that relays messages in the form of electrochemical impulses throughout the body is called _____.
a. the arousal system
b. the nervous system
c. the limbic system
d. the endocrine system
**Answer b % correct 92 a= 0 b= 92 c= 5 d= 2 *r* = .20**

36. The autonomic nervous system has two divisions: _____.
a. central and peripheral
b. receptors and effectors
c. sympathetic and parasympathetic
d. limbic and endocrine
**Answer c % correct 79 a= 9 b= 5 c= 79 d= 7 *r* = .36**

37. All nerve cells and fibers that are **NOT** in the brain or spinal cord make up the _____ nervous system.
a. central
b. peripheral
c. autonomic
d. sympathetic
**Answer b % correct 76 a= 9 b= 76 c= 10 d= 6 *r* = .48**

38. Neurons whose primary purpose is to carry messages from the spinal cord or the brain to the muscles and glands are called _____.
a. afferent neurons
b. active neurons
c. efferent neurons
d. interneurons
**Answer c % correct 40 a= 27 b= 11 c= 40 d= 22 *r* = .21**

39. Neurons whose primary purpose is to collect information from the sensory organs and carry that information to the spinal cord or brain are called _____.
a. afferent neurons
b. active neurons
c. efferent neurons
d. interneurons
**Answer a % correct 43 a= 43 b= 14 c= 22 d= 19 *r* = .21**

40. The process of digesting your last snack or meal or the unconscious regulation of your breathing are all primarily rooted in the _____ nervous system.
a. autonomic
b. limbic
c. somatic
d. secondary
**Answer a % correct 66 a= 66 b= 12 c= 18 d= 4 *r* = .44**

41. A young woman returns from a day at the beach to find she has developed a severe sunburn. Which neurons are sending the messages from her burned skin to her brain informing her of the pain from the burn?
a. sensory neurons
b. motor neurons
c. synaptic neurons
d. association neurons
**Answer a % correct 88 a= 88 b= 2 c= 7 d= 3 *r* = .24**

42. The division of the nervous system that connects the brain and spinal cord to the rest of the body is the _____ system.
a. peripheral nervous
b. endocrine
c. central nervous
d. secondary nervous
**Answer a % correct 42 a= 42 b= 12 c= 12 d= 4 *r* = .45**

43. The deer waits motionlessly, hidden in the thicket as the band of hunters approach. As they get closer, their dogs bark, picking up the scent of their prey. In a futile effort to escape, the deer bolts. Which of the following most accurately describes the nervous system of the hunted deer at this point?
a. Its sympathetic nerve fibers are more active than its parasympathetic nerve fibers.
b. Its parasympathetic nerve fibers are more active than its sympathetic nerve fibers.
c. Both its sympathetic and parasympathetic nerve fibers are equally active.
d. Neither its sympathetic nor its parasympathetic nerve fibers are aroused.
**Answer a % correct 77 a= 77 b= 13 c= 10 d= 0 *r* = .37**

44. It's midnight, and you are alone in your room studying. You hear a loud crash outside your room, and your whole body reacts instantly and furiously. The system that produces these reactions is the _____ system.
a. central nervous
b. sympathetic nervous
c. parasympathetic nervous
d. limbic

**Answer b % correct 80 a= 6 b= 80 c= 12 d= 3 *r* = .52**

45. The autonomic and somatic nervous systems are divisions of the _____ system.
a. central
b. parasympathetic
c. peripheral
d. sympathetic
**Answer c % correct 63 a= 22 b= 5 c= 63 d= 10 *r* = .28**

46. The autonomic nervous system is responsible for:
a. controlling the skeletal muscles.
b. sending sensory input to the brain.
c. making choices and decisions.
d. the activity of internal organs and glands.
**Answer d % correct 70 a= 9 b= 11 c= 9 d= 70 *r* = .35**

47. The part of the nervous system that allows the brain to regulate digestion, heart rate, and respiration without our conscious attention is the:
a. autonomic nervous system.
b. central nervous system.
c. somatic nervous system.
d. spinal cord.
**Answer a % correct 77 a= 77 b= 20 c= 3 d= 0 *r* = .27**

48. The nervous system called the "fight or flight" system is the _____ system.
a. central
b. parasympathetic
c. somatic
d. sympathetic
**Answer d % correct 74 a= 5 b= 10 c= 10 d= 74 *r* = .45**

49. Calm is to aroused as _____ is to _____.
a. parasympathetic; sympathetic
b. autonomic; motor
c. sympathetic; parasympathetic
d. central; peripheral
**Answer a % correct 77 a= 77 b= 3 c= 21 d= 0 *r* = .31**

50. One evening Betty was walking to the dorm from the gym when she was stopped by two men who demanded her money. Since she was a good athlete, Betty decided to make a run for it. Pretending to open her purse, she suddenly turned and dashed off. Although pursued, Betty outran her assailants. During this incident, which part of Betty's nervous system was most directly responsible for her successful escape?
a. midbrain
b. parasympathetic nervous system
c. forebrain
d. sympathetic nervous system
**Answer d % correct 78 a= 2 b= 14 c= 6 d= 78 *r* = .45**

51. The autonomic nervous system is divided into two parts. These are termed the _____ nervous systems.
a. ascending and descending
b. frontal and temporal
c. left and right
d. parasympathetic and sympathetic
**Answer d % correct 96 a= 2 b= 2 c= 0 d= 96 *r* = .43**

52. The parasympathetic and sympathetic divisions make up the:
a. motor cortex.
b. endocrine system.
c. autonomic nervous system.
d. neocortex.
**Answer c % correct 97 a= 2 b= 0 c= 97 d= 1 *r* = .31**

53. The nervous system is comprised of two parts: _____.
a. the central nervous system and the peripheral nervous system
b. the afferent nervous system and the efferent nervous system
c. the sympathetic nervous system and the parasympathetic nervous system
d. the brain and the spinal cord
**Answer b % correct 96 a= 1 b= 96 c= 0 d= 3 *r* = .34**

54. The central nervous system consists of the _____.
a. parasympathetic and sympathetic divisions
b. brain and the spinal cord
c. muscles and glands
d. sense organs and sensory neurons
**Answer b % correct 94 a= 4 b= 94 c= 1 d= 1 *r* = .25**

55. The two major divisions of the central nervous system are:
a. left and right hemispheres.
b. the brain and autonomic systems.
c. brain and spinal cord.
d. peripheral and autonomic systems.
**Answer c % correct 90 a= 3 b= 1 c= 90 d= 6 *r* = .26**

56. When the sympathetic nervous system assumes control of the involuntary bodily processes during a stressful situation, which of the following changes is likely to occur?
a. digestion stops
b. less blood is pumped to muscles
c. air passages become smaller
d. sweat glands are less active
**Answer a % correct 68 a= 68 b= 12 c= 16 d= 3 *r* = .45**

57. Which of the following most directly controls bodily reflexes?
a. peripheral nervous system
b. brainstem
c. spinal cord
d. hindbrain
**Answer c % correct 55 a= 30 b= 4 c= 55 d= 11 *r* = .37**

58. Which hemisphere of the cerebral cortex is usually dominant in spatial tasks?
a. the front hemisphere
b. the rear hemisphere
c. the left hemisphere
d. the right hemisphere
**Answer d % correct 46 a= 13 b= 14 c= 27 d= 46 *r* = .46**

59. The area in the back of the temporal lobe that is important in our ability to listen and in processing and understanding what others are saying is _____.
a. Korsakoff's area
b. Wernicke's area
c. Broca's area
d. Sach's area

**Answer b % correct 60 a= 4 b= 60 c= 34 d= 1 *r* = .35**

60. The structure in the hindbrain that controls certain reflexes and coordinates the body's movements is the _____.
a. medulla
b. cerebellum
c. pons
d. reticular formation
**Answer b % correct 70 a= 13 b= 70 c= 5 d= 12 *r* = .29**

61. The part of the brain that receives sensations of touch, balance, bodily position, and oversees spatial abilities is the _____.
a. occipital lobe
b. temporal lobe
c. parietal lobe
d. frontal lobe
**Answer c % correct 61 a= 10 b= 15 c= 61 d= 13 *r* = .33**

62. The outer surface of the two cerebral hemispheres that regulate most complex behavior is called the _____.
a. cerebellum
b. corpus callosum
c. cerebral cortex
d. substantia nigra
**Answer c % correct 74 a= 7 b= 12 c= 74 d= 7 *r* = .44**

63. The part of the brain that helps process hearing and give meaning to words is the _____.
a. the occipital lobe
b. the temporal lobe
c. the parietal lobe
d. the frontal lobe
**Answer b % correct 72 a= 9 b= 72 c= 12 d= 6 *r* = .37**

64. The cerebellum _____.
a. controls blood pressure
b. is involved in emotional behavior
c. coordinates actions so that movements are efficient
d. relays messages from the sensory receptors
**Answer c % correct 74 a= 4 b= 12 c= 74 d= 11 *r* = .44**

65 Which hemisphere of the cerebral cortex is usually dominant in language tasks?
a. the front hemisphere
b. the rear hemisphere
c. the left hemisphere
d. the right hemisphere
**Answer c % correct 70 a= 8 b= 4 c= 70 d= 18 *r* = .38**

66. The part of the brain which interprets visual information is the _____.
a. occipital lobe
b. temporal lobe
c. parietal lobe
d. frontal lobe
**Answer a % correct 89 a= 89 b= 6 c= 3 d= 2 *r* = .26**

67. A young woman recovering from a blow to her head finds she has great difficulty maintaining her balance and coordinating her movements. Injury to which part of her brain is likely to be causing her difficulties?

a. cerebellum
b. medulla
c. cerebral cortex
d. thalamus
**Answer a % correct 47 a= 47 b= 18 c= 18 d= 17 *r* = .22**

68. The part of the hind brain that largely controls breathing, heart rate, and blood pressure is the _____.
a. cerebral cortex
b. pons
c. medulla
d. cerebellum
**Answer c % correct 86 a= 3 b= 2 c= 86 d= 9 *r* = .29**

69. Garfield is having great difficulty controlling his appetite. All he wants to do is eat and no matter how much he eats he is still hungry. His weight is approaching 400 pounds and he still constantly wants to eat. His physician says the problem is due to a disorder in a specific center of the brain. The brain center is most likely the _____.
a. medulla
b. cerebral cortex
c. thalamus
d. hypothalamus
**Answer d % correct 51 a= 0 b= 10 c= 39 d= 51 *r* = .28**

70. The site of many mental processes that are unique to humans (self-awareness, initiative, planning ability, and goal-directed behavior) is the _____.
a. occipital lobes
b. temporal lobes
c. parietal lobes
d. frontal lobes
**Answer d % correct 68 a= 7 b= 12 c= 13 d= 68 *r* = .57**

71. "Split Brain" patients are patients who have had _____.
a. a prefrontal lobotomy
b. their cerebellum split in the middle
c. their corpus callosum cut
d. a fracture skull in which bone fragments penetrated into the brain
**Answer c % correct 78 a= 7 b= 16 c= 78 d= 0 *r* = .36**

72. Despite its dangers, a young man continues to take cocaine because of the feeling of euphoria it produces for him. This powerful arousal of his nervous system is probably due to cocaine's ability to:
a. inhibit enzymes that break down neurotransmitters.
b. increase the release of neurotransmitters.
c. block the receptor sites for neurotransmitters.
d. prevent neurotransmitters from being reabsorbed into the synaptic vesicles.
**Answer d % correct 40 a= 2 b= 22 c= 35 d= 40 *r* = .43**

73. The forebrain is one of _____ operationally distinct sections of the brain.
a. two
b. three
c. four
d. five
**Answer b % correct 57 a= 4 b= 57 c= 35 d= 4 *r* = .39**

74. Eating, drinking, sexual behavior, temperature control, and sleeping are most strongly influenced by the:
a. medulla.
b. cerebral cortex.
c. thalamus.

d. hypothalamus.
**Answer d % correct 55 a= 10 b= 19 c= 15 d= 55 *r* = .40**

75. The structure that connects the two hemispheres of the cerebral cortex is the _____.
a. corpus callosum
b. pineal gland
c. pons
d. reticular formation
**Answer a % correct 84 a= 84 b= 0 c= 8 d= 8 *r* = .40**

76. A "split brain" patient is asked to stare at a spot on a screen. When a picture of an object is shown to the left of the spot, the patient can _____.
a. identify the object verbally and pick it out of a group of hidden objects using her right hand
b. identify the object verbally and pick it out of a group of hidden objects using her left hand
c. pick the object out of a group of hidden objects using her left hand, but cannot identify it verbally
d. pick the object out of a group of hidden objects using her right hand, but cannot identify it verbally
**Answer c % correct 46 a= 17 b= 8 c= 46 d= 29 *r* = .21**

77. The medulla, pons, and thalamus are all part of the:
a. limbic system.
b. corpus callosum.
c. cerebral cortex.
d. brainstem.
**Answer d % correct 72 a= 9 b= 3 c= 15 d= 72 *r* = .38**

78. The brain's "relay station" is the _____.
a. hypothalamus
b. medulla
c. pons
d. thalamus
**Answer d % correct 72 a= 10 b= 13 c= 4 d= 72 *r* = .51**

79. A neuroanatomist destroyed a dog's reticular formation to determine its function. Of the following, which is the most likely result? The dog:
a. could no longer hear.
b. could no longer see.
c. lapsed into a complete and irreversible coma.
d. became hyper alert and no longer slept normally.
**Answer c % correct 36 a= 4 b= 21 c= 36 d= 39 *r* = .20**

80. If the limbic system were destroyed, which of the following structures would be damaged?
a. cerebellum and corpus callosum
b. cerebellum and amygdala
c. amygdala and hippocampus
d. hippocampus and corpus callosum
**Answer c % correct 69 a= 18 b= 8 c= 69 d= 3 *r* = .39**

81. The part of our brain that MOST makes us human is the:
a. cerebellum.
b. cerebral cortex.
c. medulla.
d. pons.
**Answer b % correct 65 a= 20 b= 65 c= 11 d= 4 *r* = .46**

82. Which of the following is NOT a lobe of the brain?

a. corpus callosum
b. frontal
c. occipital
d. parietal
**Answer a % correct 99 a= 99 b= 0 c= 0 d= 1 *r* = .15**

83. The somatosensory cortex is located in the _____ lobe of the brain.
a. frontal
b. occipital
c. parietal
d. temporal
**Answer c % correct 47 a= 32 b= 10 c= 47 d= 11 *r* = .37**

84. The motor cortex is located in the _____ lobe of the brain.
a. frontal
b. occipital
c. parietal
d. temporal
**Answer a % correct 74 a= 74 b= 6 c= 21 d= 9 *r* = .38**

85. A victim of a car wreck with head injuries, whose involuntary bodily processes (breathing, heartbeat, etc.) have been disturbed, probably has had damage done to the _____.
a. hindbrain
b. pons
c. medulla
d. forebrain
**Answer c % correct 78 a= 10 b= 6 c= 78 d= 6 *r* = .36**

86. Damage to the medulla can seriously impair one's ability to:
a. sing.
b. write.
c. breathe.
d. metabolize food.
**Answer c % correct 78 a= 3 b= 11 c= 78 d= 7 *r* = .35**

87. Which part of the brain can be thought of as a major switching station that directs incoming information to the correct brain structure?
a. midbrain
b. thalamus
c. cerebellum
d. reticular activating system
**Answer b % correct 50 a= 15 b= 50 c= 13 d= 21 *r* = .32**

88. The motor impulses/commands associated with the muscular coordination and movements necessary for one to write originate in which lobe of the cerebral cortex?
a. temporal
b. parietal
c. occipital
d. frontal
**Answer d % correct 55 a= 10 b= 33 c= 2 d= 55 *r* = .30**

89. A brain tumor's growth has caused Dick's vision to suffer. Which lobe of the brain is being affected by the tumor's growth?
a. frontal
b. occipital
c. parietal

d. temporal
**Answer b % correct 91 a= 2 b= 91 c= 4 d= 3 *r* = .23**

90. The bundle of nerves that connects the two hemispheres of the brain is called the:
a. basal ganglia.
b. longitudinal fissure.
c. corpus callosum
d. somatosensory cortex
**Answer c % correct 84 a= 7 b= 10 c= 84 d= 0 *r* = .40**

91. After removal of a tumor from the LEFT side of her brain, Sharon recovered well. However, some of her former abilities are now limited. Which of the following abilities are most likely affected?
a. coordinated walking movements
b. solving algebra equations
c. assembling puzzles
d. recognizing objects that she sees
**Answer b % correct 68 a= 14 b= 68 c= 10 d= 8 *r* = .28**

92. The brain is part of the:
a. nervous system.
b. endocrine system.
c. thalamic system.
d. cranial system.
**Answer a % correct 92 a= 92 b= 3 c= 2 d= 3 *r* = .44**

93. If you are shot in the head and there is damage to the medulla this can seriously impair your ability to
a. sing.
b. write.
c. breathe.
d. urinate.
**Answer c % correct 87 a= 2 b= 8 c= 87 d= 3 *r* = .31**

94. The medulla, pons, and cerebellum are all part of the:
a. midbrain.
b. hindbrain.
c. spinal cord.
d. forebrain.
**Answer b % correct 89 a= 4 b= 89 c= 5 d= 2 *r* = .47**

95. The corpus callosum:
a. is an integral area of the hindbrain.
b. is responsible for taste and smell sensations.
c. connects the left and right cerebral hemispheres.
d. supports the reticular activating system.
**Answer c % correct 90 a= 3 b= 3 c= 90 d= 4 *r* = .39**

96. The left and right cerebral hemispheres are connected by the:
a. occipital lobe.
b. pons.
c. sylvian fissure.
d. corpus callosum.
**Answer d % correct 95 a= 1 b= 2 c= 3 d= 95 *r* = .38**

97. The left cerebral hemisphere primarily controls:
a. the right side of the body.

b. the left side of the body.
c. all motor functions.
d. spatial reasoning.
**Answer a % correct 91 a= 91 b= 2 c= 4 d= 3 *r* = .35**

98. The right cerebral hemisphere primarily controls:
a. the right side of the body.
b. the left side of the body.
c. speech and language.
d. a and c.
**Answer b % correct 93 a= 2 b= 93 c= 3 d= 2 *r* = .28**

99. Individuals who have had their corpus callosum cut are said to have a:
a. split brain
b. disintegrating personality
c. cranial refraction
d. migraine headache
**Answer a % correct 96 a= 96 b= 2 c= 2 d= 0 *r* = .35**

100. The brain is connected to the rest of the body via the:
a. corpus callosum.
b. spinal cord.
c. limbic system.
d. cranial nerve.
**Answer b % correct 96 a= 0 b= 96 c= 2 d= 2 *r* = .21**

101. Which of the following is NOT one of the three distinct parts of the brain?
a. hindbrain
b. lateral brain
c. midbrain
d. forebrain
**Answer b % correct 99 a= 1 b= 99 c= 0 d= 0 *r* = .06**

102. A young woman recovering from a blow to her head finds she has great difficulty maintaining her balance and coordinating her movements. Injury to which part of her brain is likely to be causing her difficulties?
a. cerebellum
b. medulla
c. cerebral cortex
d. thalamus
**Answer a % correct 72 a= 72 b= 8 c= 18 d= 2 *r* = .37**

103. The structure in the center of the forebrain that relays sensory information is called the _____.
a. medulla
b. hypothalamus
c. pons
d. thalamus
**Answer d % correct 63 a= 10 b= 12 c= 15 d= 63 *r* = .41**

104. Eating, drinking, sexual behavior, temperature control, and sleeping are strongly influenced by the _____.
a. medulla
b. cerebral cortex
c. thalamus
d. hypothalamus
**Answer d % correct 71 a= 3 b= 5 c= 21 d= 71 *r* = .29**

105. The part of the brain that receives sensations of touch, balance, and bodily position is the _____.
a. occipital lobe
b. temporal lobe
c. parietal lobe
d. frontal lobe
**Answer c % correct 62 a= 9 b= 14 c= 62 d= 15 *r* = .51**

108. Corey was in an automobile accident that resulted in an injury to her brain. She now has difficulty maintaining her balance and normal body positions. Her sense of touch has also been injured. The part of her brain most likely injured was her _____.
a. occipital lobe
b. temporal lobe
c. parietal lobe
d. frontal lobe
**Answer c % correct 66 a= 4 b= 13 c= 66 d= 16 *r* = .34**

107. Corey was in an automobile accident that resulted in an injury to her brain. She now has difficulty with her hearing and her memory. The part of her brain most likely injured was her _____.
a. occipital lobe
b. temporal lobe
c. parietal lobe
d. frontal lobe
**Answer b % correct 68 a= 10 b= 68 c= 11 d= 10 *r* = .34**

108. The structure that connects the two hemispheres of the cerebral cortex is the _____.
a. corpus callosum
b. pineal gland
c. pons
d. reticular formation
**Answer a % correct 99 a= 99 b= 0 c= 1 d= 0 *r* = .02**

109. Which hemisphere of the cerebral cortex is dominant in language tasks?
a. front
b. rear
c. left
d. right
**Answer c % correct 66 a= 18 b= 3 c= 66 d= 13 *r* = .38**

110. Which hemisphere of the cerebral cortex is dominant in spatial tasks and concept formation?
a. front
b. rear
c. left
d. right
**Answer d % correct 62 a= 17 b= 6 c= 16 d= 62 *r* = .29**

111. A "split brain" patient is a patient who has had _____.
a. a prefrontal lobotomy
b. their cerebellum split in the middle
c. their corpus callosum cut
d. a fractured skull in which bone fragments penetrated into the brain
**Answer c % correct 90 a= 2 b= 8 c= 90 d= 0 *r* = .38**

112. The hemisphere of the brain that acts as an interpreter, helping us with sequencing and logic is the _____.
a. front
b. rear
c. left

d. right
**Answer d % correct 51 a= 12 b= 4 c= 51 d= 33 *r* = .24**

113. A victim of a car wreck with head injuries, whose involuntary bodily processes (breathing, heartbeat, etc.) have been disturbed, probably has had damage done to the _____.
a. hindbrain
b. pons
c. medulla
d. forebrain
**Answer c % correct 81 a= 9 b= 1 c= 81 d= 9 *r* = .34**

114. The brain is connected to the other parts of the nervous system by the _____.
a. spinal cord
b. corpus callosum
c. brainstem
d. peripheral nervous system
**Answer a % correct 58 a= 58 b= 2 c= 37 d= 3 *r* = .33**

115. The glands that secrete hormones directly into the bloodstream are called _____.
a. lymph glands
b. exocrine glands
c. hippocampal glands
d. endocrine glands
**Answer d % correct 77 a= 6 b= 10 c= 7 d= 77 *r* = .31**

116. Endocrine glands are glands that secrete _____.
a. excitory neurotransmitters
b. inhibitory neurotransmitters
c. hormones
d. enzymes
**Answer c % correct 73 a= 12 b= 5 c= 73 d= 10 *r* = .25**

117. Chemical substances released by the endocrine glands to help regulate bodily functions are _____.
a. enzymes
b. neurotransmitters
c. antigens
d. hormones
**Answer d % correct 63 a= 14 b= 18 c= 4 d= 63 *r* = .51**

118. Jeff is 13 years old and he has recently noticed some remarkable changes in himself. Over the past few months his voice has started to change, growing deeper. He has begun to grow pubic hair, as well as the beginnings of a facial beard. He is also filling out, with his muscles developing rapidly. These changes in Jeff are probably due to the action of _____.
a. gonads
b. thyroid gland
c. pineal gland
d. adrenal gland
**Answer a % correct 60 a= 60 b= 24 c= 10 d= 6 *r* = .32**

119. The pea-sized gland that is stimulated by light and helps regulate activity levels over the course of a day is the:
a. adrenal
b. pituitary
c. pineal
d. thyroid
**Answer c % correct 61 a= 13 b= 22 c= 61 d= 5 *r* = .43**

120. The pituitary gland is controlled by the:
a. brainstem.
b. hypothalamus.
c. reticular formation.
d. spinal cord.
**Answer b % correct 73 a= 10 b= 73 c= 11 d= 5 *r* = .37**

121. The thyroid and pituitary glands are parts of the _____ system.
a. gonad
b. endocrine
c. steroid
d. lymphatic
**Answer b % correct 84 a= 1 b= 84 c= 0 d= 15 *r* = .35**

122. Hank has been overweight since childhood. He diets frequently and can lose weight but always seems to gain it back, because he is unable to control his eating. Hank may have a problem with his:
a. catecholamine level.
b. thyroid gland.
c. pituitary gland.
d. limbic system.
**Answer b % correct 87 a= 4 b= 87 c= 4 d= 3 *r* = .22**

125. The _____ system is made up of glands which release hormones into the bloodstream.
a. motor
b. endocrine
c. limbic
d. autonomic
**Answer b % correct 81 a= 2 b= 81 c= 11 d= 6 *r* = .38**

124. Which of the following is NOT a part of the endocrine system?
a. thyroid
b. pons
c. pituitary
d. pancreas
**Answer b % correct 88 a= 0 b= 88 c= 0 d= 12 *r* = .33**

125. The _____ gland produces the hormone which regulates the body's rate of metabolism.
a. pituitary
b. adrenal
c. thyroid
d. parathyroid
**Answer c % correct 55 a= 34 b= 10 c= 55 d= 1 *r* = .22**

# Revel Assessments

## End of Module Quizzes

**Key: Answer, Type, Learning Objective, Level**

**Type**
***A=Applied***
***C=Conceptual***
***F=Factual***
**Level**
***(1)=Easy; (2)=Moderate; (3)=Difficult***

**LO=Learning Objective**

### Quiz: 2.1-2.3 Neurons and Nerves: Building the Network

#### Multiple Choice Single Select

EOM Q2.1.1
Which part of the neuron carries messages to other cells?

a) axon
b) dendrite
Consider This: This is a fiber that branches out into several shorter fibers that have swellings or little knobs on the ends. LO 2.1 Identify the parts of a neuron and the function of each.
c) soma
Consider This: This is a fiber that branches out into several shorter fibers that have swellings or little knobs on the ends. LO 2.1 Identify the parts of a neuron and the function of each.
d) myelin
Consider This: This is a fiber that branches out into several shorter fibers that have swellings or little knobs on the ends. LO 2.1 Identify the parts of a neuron and the function of each.

**Topic: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO 2.1 Identify the parts of a neuron and the function of each., (1)**

EOM Q2.1.2
Which one of the following is NOT a function of glial cells?

a) generating action potentials
b) getting nutrients to the neurons
Consider This: While historically viewed as support cells for neurons, the expanded roles of glia are still being discovered. LO 2.1 Identify the parts of a neuron and the function of each.
c) cleaning up the remains of dead neurons
Consider This: While historically viewed as support cells for neurons, the expanded roles of glia are still being discovered. LO 2.1 Identify the parts of a neuron and the function of each.
d) generating myelin
Consider This: While historically viewed as support cells for neurons, the expanded roles of glia are still being discovered. LO 2.1 Identify the parts of a neuron and the function of each.

**Topic: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO 2.1 Identify the parts of a neuron and the function of each., (1)**

EOM Q2.1.3
When a neuron's resting potential is occurring, the neuron is _____ charged on the inside.

a) negatively
b) positively
Consider This: A neuron that is at rest is not currently firing a neural impulse or message. LO 2.2 Explain the action potential.
c) both positively and negatively
Consider This: A neuron that is at rest is not currently firing a neural impulse or message. LO 2.2 Explain the action potential.
d) neutrally
Consider This: A neuron that is at rest is not currently firing a neural impulse or message. LO 2.2 Explain the action potential.

**Topic: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO 2.2 Explain the action potential., (1)**

EOM Q2.1.4
Neurotransmitters must pass from an axon terminal to the next dendrite by crossing a fluid-filled space called the

a) synapse.
b) neuron.
Consider This: Neurotransmitters originate inside neurons and must cross this gap between adjacent neurons to transmit messages. LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body.
c) reuptake inhibitor.
Consider This: Neurotransmitters originate inside neurons and must cross this gap between adjacent neurons to transmit messages. LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body.
d) glial cell.
Consider This: Neurotransmitters originate inside neurons and must cross this gap between adjacent neurons to transmit messages. LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body.

**Topic: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (1)**

EOM Q2.1.5
The venom of a black widow spider acts as a(n) _____ by mimicking the effects of acetylcholine.

a) agonist
b) protagonist
Consider This: This is a chemical substance that mimics or enhances the effects of a neurotransmitter. LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body.
c) antagonist
Consider This: This is a chemical substance that mimics or enhances the effects of a neurotransmitter. LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body.

d) glial cell
Consider This: This is a chemical substance that mimics or enhances the effects of a neurotransmitter.
LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body.

**Topic: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (1)**

EOM Q2.1.6
Which of the following is associated with pain relief?
a) endorphins
b) acetylcholine
Consider This: When a person is hurt, these pain relieving chemicals are released when a neurotransmitter signaling pain reaches the brain. LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body.
c) glutamate
Consider This: When a person is hurt, these pain relieving chemicals are released when a neurotransmitter signaling pain reaches the brain. LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body.
d) serotonin
Consider This: When a person is hurt, these pain relieving chemicals are released when a neurotransmitter signaling pain reaches the brain. LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body.

**Topic: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (1)**

## Quiz: 2.4-2.5 An Overview of the Nervous System

### Multiple Choice Single Select

EOM Q2.2.1
If you touch a hot stove, your spinal cord can prompt you to withdraw your hand without having to send the message all the way to the brain. This is due to
a) the reflex arc.
b) neuroplasticity.
Consider This: Having this controlled by the spinal cord alone allows for very fast response times.
LO 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury.
c) the parasympathetic nervous system.
Consider This: Having this controlled by the spinal cord alone allows for very fast response times.
LO 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury.
d) the sympathetic nervous system.
Consider This: Having this controlled by the spinal cord alone allows for very fast response times.
LO 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury.

**Topic: An Overview of the Nervous System**
**ANS: a, Apply What You Know, LO 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury., (1)**

EOM Q2.2.2
What is the process whereby the structure and function of brain cells change in response to trauma, damage, or even learning?

a) neuroplasticity
b) shallow lesioning
Consider This: Dendrites grow and new synapses are formed in at least some areas of the brain as people learn new things throughout life. LO 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury.
c) deep lesioning
Consider This: Dendrites grow and new synapses are formed in at least some areas of the brain as people learn new things throughout life. LO 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury.
d) cell regeneration
Consider This: Dendrites grow and new synapses are formed in at least some areas of the brain as people learn new things throughout life. LO 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury.

**Topic: An Overview of the Nervous System**
**ANS: a, Remember the Facts LO 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury., (1)**

EOM Q2.2.3
The neurons of the sensory pathway contain

a) afferent neurons.
b) efferent neurons.
Consider This: The sensory pathway comprises all the nerves carrying messages from the senses to the central nervous system. LO 2.5 Differentiate the roles of the somatic and autonomic nervous systems.
c) both efferent and afferent neurons.
Consider This: The sensory pathway comprises all the nerves carrying messages from the senses to the central nervous system. LO 2.5 Differentiate the roles of the somatic and autonomic nervous systems.
d) voluntary muscle fibers.
Consider This: The sensory pathway comprises all the nerves carrying messages from the senses to the central nervous system. LO 2.5 Differentiate the roles of the somatic and autonomic nervous systems.

**Topic: An Overview of the Nervous System**
**ANS: a, Apply What You Know, LO 2.5 Differentiate the roles of the somatic and automatic nervous systems., (2)**

EOM Q2.2.4
Yvonne's ability to reach for and pick up her book is largely due to the functions of the _____ pathway of the _____ nervous system.

a) motor; somatic
b) sensory; somatic
Consider This: This pathway is all the nerves carrying messages from the central nervous system to the voluntary, or skeletal, muscles of the body. LO 2.5 Differentiate the roles of the somatic and autonomic nervous systems.
c) autonomic; peripheral
Consider This: This pathway is all the nerves carrying messages from the central nervous system to the voluntary, or skeletal, muscles of the body. LO 2.5 Differentiate the roles of the somatic and autonomic nervous systems.
d) parasympathetic; autonomic
Consider This: This pathway is all the nerves carrying messages from the central nervous system to the voluntary, or skeletal, muscles of the body. LO 2.5 Differentiate the roles of the somatic and autonomic nervous systems.

**Topic: An Overview of the Nervous System**
**ANS: a, Apply What You Know, LO 2.5 Differentiate the roles of the somatic and automatic nervous systems., (2)**

EOM Q2.2.5
Which of the following would be active if you have just had an automobile accident?
a) sympathetic division
b) parasympathetic division
Consider This: This is called the "fight-or-flight system" because it allows people and animals to deal with all kinds of stressful events. LO 2.5 Differentiate the roles of the somatic and autonomic nervous systems.
c) somatic division
Consider This: This is called the "fight-or-flight system" because it allows people and animals to deal with all kinds of stressful events. LO 2.5 Differentiate the roles of the somatic and autonomic nervous systems.
d) motor division
Consider This: This is called the "fight-or-flight system" because it allows people and animals to deal with all kinds of stressful events. LO 2.5 Differentiate the roles of the somatic and autonomic nervous systems.

**Topic: An Overview of the Nervous System**
**ANS: a, Apply What You Know, LO 2.5 Differentiate the roles of the somatic and automatic nervous systems., (2)**

## Quiz: 2.6-2.8 The Endocrine Glands

### Multiple Choice Single Select

EOM Q2.3.1
Although oxytocin has been tied to a variety of prosocial behaviors such as "love" and "trust," some researchers believe that in humans, it may actually work to increase _____.
a) the importance of some social stimuli
b) heart rate and empathy
Consider This: Oxytocin's effects depend on what people believe about themselves in relation to other people and what they believe about achieving close social relationships. LO 2.7 Recall the role of various endocrine glands.

c) negative pair bonding
Consider This: Oxytocin's effects depend on what people believe about themselves in relation to other people and what they believe about achieving close social relationships. LO 2.7 Recall the role of various endocrine glands.
d) social loafing
Consider This: Oxytocin's effects depend on what people believe about themselves in relation to other people and what they believe about achieving close social relationships. LO 2.7 Recall the role of various endocrine glands.

**Topic: The Endocrine Glands**
**ANS: a, Understand the Concepts, LO 2.7 Recall the role of various endocrine glands., (2)**

EOM Q2.3.2
Your friend Melissa has suffered from diabetes for her entire life. She regularly tests her blood to make sure her sugar levels are not too high or low. Which gland in her endocrine system is responsible for regulating her blood sugar?

a) pancreas
b) thyroid
Consider This: This gland secretes insulin and glucagon. LO 2.7 Recall the role of various endocrine glands.
c) pituitary
Consider This: This gland secretes insulin and glucagon. LO 2.7 Recall the role of various endocrine glands.
d) adrenal
Consider This: This gland secretes insulin and glucagon. LO 2.7 Recall the role of various endocrine glands.

**Topic: The Endocrine Glands**
**ANS: a, Apply What You Know, LO 2.7 Recall the role of various endocrine glands., (2)**

EOM Q2.3.3
Of the following, which is *not* one of the stages of the general adaptation syndrome?

a) resistance
Consider This: The general adaptation syndrome is the sequence of physiological reactions the body goes through to adapt to a stressor. LO 2.8 Describe how the autonomic nervous system and body are impacted by stress.
b) exhaustion
Consider This: The general adaptation syndrome is the sequence of physiological reactions the body goes through to adapt to a stressor. LO 2.8 Describe how the autonomic nervous system and body are impacted by stress.
c) compensation
d) alarm
Consider This: The general adaptation syndrome is the sequence of physiological reactions the body goes through to adapt to a stressor. LO 2.8 Describe how the autonomic nervous system and body are impacted by stress.

**Topic: The Endocrine Glands**
**ANS: c, Remember the Facts, LO 2.8 Describe how the automatic nervous system and body are impacted by stress., (3)**

EOM Q2.3.4
Part of the human immune system is the presence of _____ cells, whose primary function is to suppress viruses and destroy tumor cells.

a) leukotriene
Consider This: Stress has been shown to depress their release. LO 2.8 Describe how the autonomic nervous system and body are impacted by stress.
b) histamine
Consider This: Stress has been shown to depress their release. LO 2.8 Describe how the autonomic nervous system and body are impacted by stress.
c) natural killer (NK)
d) blastocyst
Consider This: Stress has been shown to depress their release. LO 2.8 Describe how the autonomic nervous system and body are impacted by stress.

**Topic: The Endocrine Glands**
**ANS: c, Remember the Facts, LO 2.8 Describe how the autonomic nervous system and the body are impacted by stress., (2)**

## Quiz: 2.9-2.10 Looking Inside the Living Brain

## Multiple Choice Single Select

EOM Q2.4.1
Which of the following techniques involves passing a mild current through the brain to activate certain structures without damaging them?

a) electrical stimulation of the brain (ESB)
b) electroconvulsive tomography (ECT)
Consider This: This has become an important technique in psychology, as its use in animals has informed us in many areas of investigation, including new directions for therapy. LO 2.9 Describe how lesioning studies and brain stimulation are used to study the brain.
c) magnetic resonance imaging (MRI)
Consider This: This has become an important technique in psychology, as its use in animals has informed us in many areas of investigation, including new directions for therapy. LO 2.9 Describe how lesioning studies and brain stimulation are used to study the brain.
d) deep brain lesioning
Consider This: This has become an important technique in psychology, as its use in animals has informed us in many areas of investigation, including new directions for therapy. LO 2.9 Describe how lesioning studies and brain stimulation are used to study the brain.

**Topic: Looking Inside the Living Brain**
**ANS: a, Understand the Concepts, LO 2.9 Describe how lesioning studies and brain stimulation are used to study the brain., (2)**

EOM Q2.4.2
Which of the following techniques analyzes blood oxygen levels to look at the functioning of the brain?

a) fMRI
b) EEG

Consider This: In this technique, a modification of a method typically used for imaging brain structure is used to assess brain function. LO 2.9 Describe how lesioning studies and brain stimulation are used to study the brain.

c) CT

Consider This: In this technique, a modification of a method typically used for imaging brain structure is used to assess brain function. LO 2.9 Describe how lesioning studies and brain stimulation are used to study the brain.

d) PET

Consider This: In this technique, a modification of a method typically used for imaging brain structure is used to assess brain function. LO 2.9 Describe how lesioning studies and brain stimulation are used to study the brain.

**Topic: Looking Inside the Living Brain**
**ANS: a, Understand the Concepts, LO 2.9 Describe how lesioning studies and brain stimulation are used to study the brain., (2)**

EOM Q2.4.3
Dr. Roll is conducting a research study. She wants to measure the physical connectivity in the research participants' brains by imaging their white matter. Which of the following methods will she use?

a) diffusion tensor imaging (DTI)

b) MRI spectroscopy

Consider This: This technique uses MRI technology; it has been used to investigate both normal function and structural changes associated with various disorders and conditions. LO 2.10 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain.

c) functional magnetic resonance imaging (fMRI)

Consider This: This technique uses MRI technology; it has been used to investigate both normal function and structural changes associated with various disorders and conditions. LO 2.10 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain.

d) computed tomography (CT)

Consider This: This technique uses MRI technology; it has been used to investigate both normal function and structural changes associated with various disorders and conditions. LO 2.10 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain.

**Topic: Looking Inside the Living Brain**
**ANS: a, Apply What You Know, LO 2.10 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (2)**

EOM Q2.4.4
If you were suffering from neurological problems and your neurologist wanted to have a study done of your brain and its electrical functioning, which of the following techniques would be most appropriate?

a) EEG

b) PTI

Consider This: This technique involves having metal or sponge-like electrodes placed directly onto your scalp. LO 2.10 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain.

c) PET

Consider This: This technique involves having metal or sponge-like electrodes placed directly onto your scalp. LO 2.10 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain.

d) DTI

Consider This: This technique involves having metal or sponge-like electrodes placed directly onto your scalp. LO 2.10 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain.

**Topic: Looking Inside the Living Brain**
**ANS: a, Apply What You Know, LO 2.10 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (2)**

## End of Chapter Quiz

### Multiple Choice Single Select

EOC Q2.1
In the structure of the neuron, the _____ receives messages from other cells.

a) dendrite
b) axon
Consider This: This structure looks like the branches of a tree. LO 2.1 Identify the parts of a neuron and the function of each.
c) soma
Consider This: This structure looks like the branches of a tree. LO 2.1 Identify the parts of a neuron and the function of each.
d) myelin
Consider This: This structure looks like the branches of a tree. LO 2.1 Identify the parts of a neuron and the function of each.

**Topic: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO 2.1 Identify the parts of a neuron and the function of each., (1)**

EOC Q2.2
Oligodendrocytes and Schwann cells generate a fatty substance known as

a) myelin.
b) glial.
Consider This: This substance wraps around the shaft of the axons, forming an insulating and protective sheath. LO 2.1 Identify the parts of a neuron and the function of each.
c) soma.
Consider This: This substance wraps around the shaft of the axons, forming an insulating and protective sheath. LO 2.1 Identify the parts of a neuron and the function of each.
d) neurilemma.
Consider This: This substance wraps around the shaft of the axons, forming an insulating and protective sheath. LO 2.1 Identify the parts of a neuron and the function of each.

**Topic: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO 2.1 Identify the parts of a neuron and the function of each., (1)**

EOC Q2.3
Which of the following insulates and protects a neuron's axon and helps speed along electrical impulses?

a) myelin sheath
b) synaptic knobs

Consider This: Sections of myelin bump up next to each other on the axon. LO 2.1 Identify the parts of a neuron and the function of each.
c) receptor sites
Consider This: Sections of myelin bump up next to each other on the axon. LO 2.1 Identify the parts of a neuron and the function of each.
d) neuromodulators
Consider This: Sections of myelin bump up next to each other on the axon. LO 2.1 Identify the parts of a neuron and the function of each.

**Topic: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO 2.1 Identify the parts of a neuron and the function of each., (1)**

EOC Q2.4
When a neuron is in the resting potential state, the neuron is negatively charged on the _____ and positively charged on the _____.
a) inside; outside
b) outside; inside
Consider This: A neuron that's at rest—not currently firing a neural impulse or message—is actually electrically charged. LO 2.2 Explain the action potential.
c) top; bottom
Consider This: A neuron that's at rest—not currently firing a neural impulse or message—is actually electrically charged. LO 2.2 Explain the action potential.
d) bottom; top
Consider This: A neuron that's at rest—not currently firing a neural impulse or message—is actually electrically charged. LO 2.2 Explain the action potential.

**Topic: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO 2.2 Explain the action potential., (1)**

EOC Q2.5
Which neurotransmitter stimulates skeletal muscle cells to contract but slows contractions of the heart?
a) acetylcholine (ACh)
b) GABA
Consider This: This was the first neurotransmitter ever identified; it is often found at the synapses between neurons and muscle cells. LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body.
c) Serotonin (5-HT)
Consider This: This was the first neurotransmitter ever identified; it is often found at the synapses between neurons and muscle cells. LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body.
d) endorphin
Consider This: This was the first neurotransmitter ever identified; it is often found at the synapses between neurons and muscle cells. LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body.

**Topic: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (1)**

EOC Q2.6
Heroin mimics the actions of endorphins, inhibiting pain signals. Heroin is an example of a(n):

a) agonist.
b) protagonist.
Consider This: This can mimic or enhance the effects of neurotransmitters on the receptor sites of the next cell. LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body.
c) antagonist.
Consider This: This can mimic or enhance the effects of neurotransmitters on the receptor sites of the next cell. LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body.
d) glial cell.
Consider This: This can mimic or enhance the effects of neurotransmitters on the receptor sites of the next cell. LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body.

**Topic: Neurons and Nerves: Building the Network**
**ANS: a, Remember the Facts, LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body., (1)**

EOC Q2.7
Involuntary muscles are controlled by the _____ nervous system.

a) autonomic
b) somatic
Consider This: Involuntary muscles, such as the heart, stomach, and intestines, are controlled by clumps of neurons located on or near the spinal column. LO 2.5 Differentiate the roles of the somatic and autonomic nervous systems.
c) sympathetic
Consider This: Involuntary muscles, such as the heart, stomach, and intestines, are controlled by clumps of neurons located on or near the spinal column. LO 2.5 Differentiate the roles of the somatic and autonomic nervous systems.
d) parasympathetic
Consider This: Involuntary muscles, such as the heart, stomach, and intestines, are controlled by clumps of neurons located on or near the spinal column. LO 2.5 Differentiate the roles of the somatic and autonomic nervous systems.

**Topic: An Overview of the Nervous System**
**ANS: a, Remember the Facts, LO 2.5 Differentiate the roles of the somatic and the autonomic nervous systems., (1)**

EOC Q2.8
As you take notes, your heart beats at a normal rate. Your breathing is normal and your stomach slowly digests your earlier meal. What part of the peripheral nervous system is currently in action?

a) autonomic
Consider This: This system is sometimes called the “eat-drink-and-rest” system. LO 2.5 Differentiate the roles of the somatic and autonomic nervous systems.
b) sympathetic
Consider This: This system is sometimes called the “eat-drink-and-rest” system. LO 2.5 Differentiate the roles of the somatic and autonomic nervous systems.
c) parasympathetic

d) somatic
Consider This: This system is sometimes called the “eat-drink-and-rest” system. LO 2.5 Differentiate the roles of the somatic and autonomic nervous systems.

**Topic: An Overview of the Nervous System**
**ANS: c, Remember the Facts, LO 2.5 Differentiate the roles of the somatic and the autonomic nervous systems., (1)**

EOC Q2.9
Roberto has had difficulty sleeping for the past 6 months, and his body seemingly no longer differentiates between night and day. His doctor believes the problem lies with Roberto’s endocrine system. What gland will his physician likely focus on?

a) pineal
b) pituitary
Consider This: This gland secretes a hormone called melatonin, which helps track of day length. LO 2.7 Recall the role of various endocrine glands.
c) adrenal
Consider This: This gland secretes a hormone called melatonin, which helps track of day length. LO 2.7 Recall the role of various endocrine glands.
d) thyroid
Consider This: This gland secretes a hormone called melatonin, which helps track of day length. LO 2.7 Recall the role of various endocrine glands.

**Topic: The Endocrine Glands**
**ANS: a, Remember the Facts, LO 2.7 Recall the role of various endocrine glands., (2)**

EOC Q2.10
Which gland(s) influence all other glands within the endocrine system?

a) pituitary gland
b) pineal gland
Consider This: Part of this gland secretes several hormones that influence the activity of the other glands. LO 2.6 Explain why the pituitary gland is known as the "master gland."
c) thyroid gland
Consider This: Part of this gland secretes several hormones that influence the activity of the other glands. LO 2.6 Explain why the pituitary gland is known as the "master gland."
d) adrenal glands
Consider This: Part of this gland secretes several hormones that influence the activity of the other glands. LO 2.6 Explain why the pituitary gland is known as the "master gland."

**Topic: The Endocrine Glands**
**ANS: a, Remember the Facts, LO 2.6 Explain why the pituitary gland is known as the “master gland.”., (2)**

EOC Q2.11
In which of Selye’s stages is death a possible outcome?

a) exhaustion
b) alarm

Consider This: This is when the body's resources are gone. LO 2.8 Describe how the autonomic nervous system and body are impacted by stress.
c) resistance
Consider This: This is when the body's resources are gone. LO 2.8 Describe how the autonomic nervous system and body are impacted by stress.
d) reaction
Consider This: This is when the body's resources are gone. LO 2.8 Describe how the autonomic nervous system and body are impacted by stress.

**Topic: The Endocrine Glands**
**ANS: a, Remember the Facts, LO 2.8 Describe how the autonomic nervous system and body are impacted by stress., (1)**

EOC Q2.12
Bailey is a subject in a study on memory and problem solving. The researcher is applying magnetic pulses to her brain through copper wire coils positioned directly above her scalp. Bailey's study would best be described as a(n)
a) noninvasive stimulation technique.
b) invasive stimulation technique.
Consider This: In this technique, the resulting magnetic fields stimulate neurons in the targeted area of the cortex. LO 2.9 Describe how lesioning studies and brain stimulation are used to study the brain.
c) EEG technique.
Consider This: In this technique, the resulting magnetic fields stimulate neurons in the targeted area of the cortex. LO 2.9 Describe how lesioning studies and brain stimulation are used to study the brain.
d) PET technique.
Consider This: In this technique, the resulting magnetic fields stimulate neurons in the targeted area of the cortex. LO 2.9 Describe how lesioning studies and brain stimulation are used to study the brain.

**Topic: Looking Inside the Living Brain**
**ANS: a, Apply What You Know, LO 2.9 Describe how lesioning studies and brain stimulation are used to study the brain., (2)**

EOC Q2.13
Maria often sleeps soundly and rarely awakens to any outside noise. However, the cries of Maria's baby can awaken her immediately. What part of the brain is responsible for this reaction?
a) reticular formation
b) medulla
Consider This: This is the part of the brain that helps keep people alert and aroused. LO 2.11 Identify the different structures of the hindbrain and the function of each.
c) pons
Consider This: This is the part of the brain that helps keep people alert and aroused. LO 2.11 Identify the different structures of the hindbrain and the function of each.
d) cerebellum
Consider This: This is the part of the brain that helps keep people alert and aroused. LO 2.11 Identify the different structures of the hindbrain and the function of each.

**Topic: From the Bottom Up: The Structures of the Brain**

**ANS: a, Apply What You Know, LO 2.11 Identify the different structures of the hindbrain and the function of each., (2)**

EOC Q2.14
Nicole and Camille are synchronized swimmers for their college swim team. They often work long hours to ensure the movements in their routine are perfectly timed. What part of their brains must Camille and Nicole rely on most?

a) cerebellum
b) medulla
Consider This: This part of the brain coordinates voluntary movements that have to happen in rapid succession. LO 2.11 Identify the different structures of the hindbrain and the function of each.
c) pons
Consider This: This part of the brain coordinates voluntary movements that have to happen in rapid succession. LO 2.11 Identify the different structures of the hindbrain and the function of each.
d) reticular formation
Consider This: This part of the brain coordinates voluntary movements that have to happen in rapid succession. LO 2.11 Identify the different structures of the hindbrain and the function of each.

**Topic: From the Bottom Up: The Structures of the Brain**
**ANS: a, Apply What You Know, LO 2.11 Identify the different structures of the hindbrain and the function of each., (2)**

EOC Q2.15
Your psychology professor refers to this as the great relay station of the brain. What part is he or she referring to?

a) thalamus
b) hypothalamus
Consider This: Recent research has also suggested that this part of the brain may affect the functioning of task-specific regions of the cortex. LO 2.12 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation.
c) hippocampus
Consider This: Recent research has also suggested that this part of the brain may affect the functioning of task-specific regions of the cortex. LO 2.12 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation.
d) amygdala
Consider This: Recent research has also suggested that this part of the brain may affect the functioning of task-specific regions of the cortex. LO 2.12 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation.

**Topic: From the Bottom Up: The Structures of the Brain**
**ANS: a, Apply What You Know, LO 2.12 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation., (2)**

EOC Q2.16
Which part of the brain is involved in the creation of long-term, declarative memories, and is often linked to Alzheimer's disease?

a) hippocampus
b) thalamus
Consider This: This is the Greek word for "seahorse," and it was given to this brain structure because the first scientists who dissected the brain thought it looked like a seahorse. LO 2.12 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation.

c) hypothalamus
Consider This: This is the Greek word for "seahorse," and it was given to this brain structure because the first scientists who dissected the brain thought it looked like a seahorse. LO 2.12 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation.
d) amygdala
Consider This: This is the Greek word for "seahorse," and it was given to this brain structure because the first scientists who dissected the brain thought it looked like a seahorse. LO 2.12 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation.

**Topic: From the Bottom Up: The Structures of the Brain**
**ANS: a, Remember the Facts, LO 2.12 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation., (1)**

EOC Q2.17
Jessica suffered a severe blow to the back of her head when she was thrown from her horse. Subsequently, her occipital lobe has been injured. Which of her senses has the highest chance of being affected?

a) vision
b) hearing
Consider This: The primary cortical processing area for this sensory modality is found in the occipital lobe. LO 2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body.
c) touch
Consider This: The primary cortical processing area for this sensory modality is found in the occipital lobe. LO 2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body.
d) taste and smell
Consider This: The primary cortical processing area for this sensory modality is found in the occipital lobe. LO 2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body.

**Topic: From the Bottom Up: The Structures of the Brain**
**ANS: a, Apply What You Know, LO 2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)**

EOC Q2.18
Jaime's grandfather recently suffered a stroke and has had difficulty with language production ever since. Most likely, he has experienced damage to the _____ area of his brain.

a) left frontal
b) right rear
Consider This: This area coordinates various brain areas, allowing a person to speak smoothly and fluently. LO 2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body.
c) left rear
Consider This: This area coordinates various brain areas, allowing a person to speak smoothly and fluently. LO 2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body.
d) right frontal
Consider This: This area coordinates various brain areas, allowing a person to speak smoothly and fluently. LO 2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body.

**Topic: From the Bottom Up: The Structures of the Brain**
**ANS: a, Apply What You Know, LO 2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)**

EOC Q2.19
Felicia is recovering from a brain injury. She is able to speak fluently but often uses incorrect words in a sentence. In one instance at a friend's birthday party, she said, "I would like something to drink. Can I have some battery?" Felicia's problem may be a symptom of

a) Wernicke's aphasia.
b) spatial neglect.
Consider This: People with this condition are able to speak fluently and pronounce words correctly, but the words would be the wrong ones entirely. LO 2.14 Name the parts of the cortex that are responsible for higher forms of thought, such as language.
c) visual agnosia.
Consider This: People with this condition are able to speak fluently and pronounce words correctly, but the words would be the wrong ones entirely. LO 2.14 Name the parts of the cortex that are responsible for higher forms of thought, such as language.
d) Broca's aphasia.
Consider This: People with this condition are able to speak fluently and pronounce words correctly, but the words would be the wrong ones entirely. LO 2.14 Name the parts of the cortex that are responsible for higher forms of thought, such as language.

**Topic: From the Bottom Up: The Structures of the Brain**
**ANS: a, Apply What You Know, LO 2.14 Name the parts of the cortex that are responsible for higher forms of thought, such as language., (2)**

EOC Q2.20
Although the brain works largely as a whole, which of the following is *not* a correct pairing of hemisphere and function?

a) right; control of right-handed motor functions
b) left; control of right-handed motor functions
Consider This: An organizational feature of the cortex is that for specific regions, each hemisphere is responsible for the opposite side of the body, either for control or for receiving information. LO 2.15 Explain how some brain functions differ between the left and right hemispheres.
c) right; recognition of faces
Consider This: An organizational feature of the cortex is that for specific regions, each hemisphere is responsible for the opposite side of the body, either for control or for receiving information. LO 2.15 Explain how some brain functions differ between the left and right hemispheres.
d) left; reading
Consider This: An organizational feature of the cortex is that for specific regions, each hemisphere is responsible for the opposite side of the body, either for control or for receiving information. LO 2.15 Explain how some brain functions differ between the left and right hemispheres.

**Topic: From the Bottom Up: The Structures of the Brain**
**ANS: a, Understand the Concepts, LO 2.15 Explain how some brain functions differ between the left and right hemispheres., (2)**

# MyLab Test Questions

## MyLab Chapter Exam

1. What is the name of the cell that sends and receives messages in the nervous system?
a. Myelin
b. Axon
c. Neuron
d. Dendrite

**Answer:** c
**Difficulty:** Easy
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Remember the Facts
**Objective (LO):** 2.1 Identify the parts of a neuron and describe the function of each
**Bloom's Taxonomy:** Knowledge

2. _____ focuses on the biological bases of psychological processes, behavior, and learning.
a. Psychoanalysis
b. Operant conditioning
c. Evolutionary psychology
d. Behavioral neuroscience

**Answer:** d
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Remember the Facts
**Objective (LO):** 2.1 Identify the parts of a neuron and describe the function of each
**Bloom's Taxonomy:** Knowledge

3. Messages from other cells are received by the
a. soma
b. axon
c. nucleus
d. dendrites

**Answer:** d
**Difficulty**: Easy
**Topic**: Neurons and Nerves: Building the Network
**Skill:** Remember the Facts
**Objective (LO):** 2.1 Identify the parts of a neuron and describe the function of each.
**Bloom's Taxonomy:** Knowledge

4. Recent research has shown that some types of glial cells have properties similar to
a. nerves
b. stem cells
c. endorphins
d. axons

**Answer:** b
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Remember the Facts
**Objective (LO):** 2.1 Identify the parts of a neuron and describe the function of each
**Bloom's Taxonomy:** Knowledge

5. The charged particles inside and outside the cell are called
a. nuclei
b. membranes
c. ions
d. axons

**Answer:** c
**Difficulty:** Moderate

**Topic:** Neurons and Nerves: Building the Network
**Skill:** Remember the Facts
**Objective (LO):** 2.2 Explain the action potential
**Bloom's Taxonomy:** Knowledge

6. What occurs to a neuron when it receives a chemical message?
   a. The cell becomes positively charged on the inside
   b. The cell returns to its resting state.
   c. The cell floods the nucleus with sodium ions
   d. The cell becomes impermeable for a short time

**Answer:** a
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Understand the Concepts
**Objective (LO):** 2.2 Explain the action potential
**Bloom's Taxonomy:** Comprehension

7. During _____, sodium ions cannot enter the cell.
   a. the action potential state
   b. the resting potential state
   c. diffusion
   d. firing

**Answer:** b
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Understand the Concepts
**Objective (LO):** 2.2 Explain the action potential
**Bloom's Taxonomy:** Comprehension

8. When a neuron receives a stimulus that is very strong, the result is that _____.
   a. the neuron fires at a weaker strength
   b. the neuron fires in an all-or-none fashion
   c. the neuron fires at a greater strength
   d. fewer neurons fire at the same time

**Answer:** b
**Difficulty**: Difficult
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Understand the Concepts
**Objective (LO):** 2.2 Explain the action potential
**Bloom's Taxonomy:** Comprehension

9. Partial firing of a neuron _____.
   a. is extremely rare
   b. is common
   c. happens about 20 percent of the time
   d. does not happen

**Answer:** d
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Understand the Concepts
**Objective (LO):** 2.2 Explain the action potential.
**Bloom's Taxonomy:** Comprehension

10. After a neurotransmitter travels across the _____, it fits into a place on the dendrite
   a. synapse; receptor site
   b. synapse; synaptic vesicle
   c. axon terminal; axon button
   d. synaptic gap; GABA

**Answer:** a
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Understand the Concepts
**Objective (LO):** 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy:** Comprehension

11. A molecule of neurotransmitter is to a(n) _____ as a key is to a keyhole.

a. Receptor site
b. axon
c. dendrite
d. synapse

**Answer:** a
**Difficulty:** Difficult
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Analyze It
**Objective (LO):** 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy:** Analysis

12. Which of the following statements is true about an agonist?

a. It can have an excitatory effect but not an inhibitory effect.
b. It can have an inhibitory effect but not an excitatory effect
c. It blocks or reduces the effects of a neurotransmitter
d. It mimics or enhances the effects of a neurotransmitter.

**Answer:** d
**Difficulty:** Difficult
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Understand the Concepts
**Objective (LO):** 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy:** Comprehension

13. The venom of a black widow spider causes neurons to release a flood of the

a. vomiting and diarrhea
b. relaxation and sleepiness
c. paralysis and shock
d. convulsions and possible death

**Answer:** d
**Difficulty:** Moderate
**Topic**: Neurons and Nerves: Building the Network
**Skills:** Understand the Concepts
**Objective (LO):** 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy:** Comprehension

14. Alcohol is an agonist for _____.

a. glutamate
b. acetylcholine
c. GABA
d. dopamine

**Answer:** c
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skills:** Remember the Facts

**Objective (LO):** 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy:** Knowledge

15. Endorphins help the body _____.
a. stave off depression
b. regulate growth
c. control pain
d. regulate hormones

**Answer:** c
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skills:** Understand the Concepts
**Objective (LO):** 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy:** Comprehension

16. When a person is hurt, _____ are released.
a. hormones
b. endorphins
c. antagonists
d. neurons

**Answer:** b
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Remember the Facts
**Objective (LO):** 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy**: Knowledge

17. The process by which the structure of a neurotransmitter is altered so that it can no longer act on a receptor is _____.
a. enzymatic degradation
b. reuptake
c. the inhibitory effect
d. the excitatory effect

**Answer:** a
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Remember the Facts
**Objective (LO):** 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy:** Knowledge

18. SSRIs treat depression by blocking the reuptake of _____.
a. dopamine
b. GABA
c. endorphins
d. serotonin

**Answer:** d
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Understand the Concepts
**Objective (LO):** 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy:** Comprehension

19. The spinal cord is divided into _____ main areas.
a. two
b. eight
c. ten
seventeen

**Answer:** a
**Difficulty:** Moderate
**Topic:** An Overview of the Nervous System
**Skill:** Remember the Facts
**Objective (LO):** 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury
**Bloom's Taxonomy:** Knowledge

20. The _____ part of the spinal cord transmits messages to and from the brain. The _____ part controls life-saving reflexes.
a. upper; lower
b. lower; upper
c. outer; inner
d. inner; outer

**Answer**: c
**Difficulty:** Moderate
**Topic:** An Overview of the Nervous System
**Skill:** Remember the Facts
**Objective (LO):** 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury
**Bloom's Taxonomy:** Knowledge

21. _____ carry messages from the senses to the spinal cord.
a. Afferent neurons
b. Efferent neurons
c. Interneurons
d. Motor neurons

**Answer:** a
**Difficulty:** Moderate
**Topic:** An Overview of the Nervous System
**Skill:** Remember the Facts
**Objective (LO):** 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury
**Bloom's Taxonomy:** Knowledge

22. Afferent neurons, efferent neurons, and interneurons make up the _____.
a. reflex arc
b. limbic system
c. peripheral nervous system
d. sympathetic division

**Answer:** a
**Difficulty:** Moderate
**Topic:** An Overview of the Nervous System
**Skill:** Remember the Facts
**Objective (LO):** 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury
**Bloom's Taxonomy:** Knowledge

23. _____ refers to the ability to constantly change both the structure and function of many cells in the brain in response to experience and trauma
a. The striatum
b. Autonomic
c. The reflex arc
d. Neuroplasticity

**Answer:** d
**Difficulty:** Easy

**Topic:** An Overview of the Nervous System
**Skill:** Remember the Facts
**Objective (LO):** 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury
**Bloom's Taxonomy:** Knowledge

24. _____ can become other cells, such as blood cells, nerve cells, and brain cells, when those cells need to be replaced due to damage or wear and tear.

a. Stem cells
b. Neurotransmitters
c. Afferent neurons
d. Efferent neurons

**Answer:** a
**Difficulty:** Easy
**Topic:** An Overview of the Nervous System
**Skill:** Remember the Facts
**Objective (LO):** 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury
**Bloom's Taxonomy:** Knowledge

25. What special cells found in all the tissues of the body may offer promise for addressing diseases such as Parkinson's and Alzheimer's?

a. Glial cells
b. Stem cells
c. Red blood cells
d. Neurons

**Answer:** b
**Difficulty:** Moderate
**Topic:** An Overview of the Nervous System
**Skill:** Understand the Concepts
**Objective (LO):** 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury
**Bloom's Taxonomy:** Comprehension

26. The peripheral nervous system is made up of _____.

a. the brain and the spinal cord
b. all the nerves and neurons that are not contained in the brain and spinal cord
c. the cerebellum and the hippocampus.
d. the parietal lobes and the frontal lobes

**Answer**: b
**Difficulty**: Moderate
**Topic:** An Overview of the Nervous System
**Skill:** Remember the Facts
**Objective (LO):** 2.5 Differentiate the roles of the somatic and autonomic nervous systems
**Bloom's Taxonomy:** Knowledge

27. The nerves carrying messages from the central nervous system (CNS) to the voluntary muscles comprise the _____.

a. sensory pathway
b. motor pathway
c. autonomic nervous system
d. parasympathetic division

**Answer:** b
**Difficulty:** Moderate
**Topic:** An Overview of the Nervous System
**Skill:** Remember the Facts

**Objective (LO):** 2.5 Differentiate the roles of the somatic and autonomic nervous systems
**Bloom's Taxonomy:** Knowledge

28. The _____ is to involuntary muscles as the _____ is to voluntary muscles.
a. somatic nervous system; autonomic nervous system
b. autonomic nervous system; somatic nervous system
c. central nervous system; peripheral nervous system
d. peripheral nervous system; central nervous system

**Answer:** b
**Difficulty:** Difficult
**Topic:** An Overview of the Nervous System
**Skill**: Analyze It
**Objective (LO):** 2.5 Differentiate the roles of the somatic and autonomic nervous systems
**Bloom's Taxonomy**: Analysis

29.. Natalie sees a beautiful flower, so she walks over to touch and smell it. She is using the _____.
a. sympathetic division
b. parasympathetic division
c. autonomic nervous system
d. somatic nervous system

**Answer:** d
**Difficulty:** Moderate
**Topic:** An Overview of the Nervous System
**Skill:** Apply What You Know
**Objective (LO):** 2.5 Differentiate the roles of the somatic and autonomic nervous systems
**Bloom's Taxonomy:** Application

30. The _____ allow(s) people and animals to deal with stressful events.
a. somatic nervous system
b. parasympathetic division
c. sympathetic division
d. neurotransmitters

**Answer**: c
**Difficulty:** Moderate
**Topic:** An Overview of the Nervous System
**Skill**: Remember the Facts
**Objective (LO):** 2.5 Differentiate the roles of the somatic and autonomic nervous systems
**Bloom's Taxonomy:** Knowledge

31. After a stressful situation, the parasympathetic division allows the body to _____.
a. run from danger
b. put back the energy it burned
c. react quickly
d. suspend digestion

**Answer:** b
**Difficulty:** Moderate
**Topic:** An Overview of the Nervous System
**Skill:** Understand the Concepts
**Objective (LO):** 2.5 Differentiate the roles of the somatic and autonomic nervous systems
**Bloom's Taxonomy:** Comprehension

32. Endocrine glands differ from other glands in that they release _____, which flow directly into the bloodstream to affect target organs.

a. neurotransmitters
b. endorphins
c. hormones
d. axons

**Answer:** c
**Difficulty:** Moderate
**Topic:** The Endocrine Glands
**Skill:** Remember the Facts
**Objective (LO):** 2.6 Explain why the pituitary gland is known as the "master gland."
**Bloom's Taxonomy:** Knowledge

33. Melatonin and thyroxin are examples of _____.
a. neurons
b. glands
c. hormones
d. stem cells

**Answer:** c
**Difficulty:** Moderate
**Topic:** The Endocrine Glands
**Skill:** Remember the Facts
**Objective (LO):** 2.7 Recall the role of various endocrine glands
**Bloom's Taxonomy:** Knowledge

34. In some animals, seasonal behaviors such as breeding and molting are influenced by _____.
a. thyroxin
b. melatonin
c. serotonin
d. endorphins

**Answer:** b
**Difficulty:** Difficult
**Topic:** The Endocrine Glands
**Skill:** Understand the Concepts
**Objective (LO):** 2.7 Recall the role of various endocrine glands
**Bloom's Taxonomy:** Comprehension

35. If the pancreas secretes too little insulin, it results in _____. If it secretes too much insulin, it results in _____.
a. depression; anxiety
b. epilepsy; Parkinson's disease
c. diabetes; high blood pressure
d. diabetes; hypoglycemia

**Answer:** d
**Difficulty:** Difficult
**Topic:** The Endocrine Glands
**Skill:** Understand the Concepts
**Objective (LO):** 2.7 Recall the role of various endocrine glands
**Bloom's Taxonomy:** Comprehension

36. The _____ secrete hormones that regulate sexual behavior and reproduction
a. gonads
b. adrenal glands
c. neurotransmitters
d. neurons

**Answer:** a
**Difficulty:** Easy

**Topic:** The Endocrine Glands
**Skill:** Remember the Facts
**Objective (LO):** 2.7 Recall the role of various endocrine glands
**Bloom's Taxonomy:** Knowledge

37. Adrenal glands produce hormones called _____.

a. corticoids
b. thyroxin
c. melatonin
d. serotonin

**Answer**: a
**Difficulty:** Moderate
**Topic:** The Endocrine Glands
**Skill:** Remember the Facts
**Objective (LO):** 2.7 Recall the role of various endocrine glands
**Bloom's Taxonomy:** Knowledge

38. In the _____ stage of the General Adaptation Syndrome, the body is working at a much increased level of resistance, using resources until the stress ends or the resources run out.

a. resistance
b. alarm
c. resolution
d. exhaustion

**Answer**: a
**Difficulty:** Moderate
**Topic:** The Endocrine Glands
**Skill:** Remember the Facts
**Objective (LO):** 2.8 Describe how the autonomic nervous system and body are impacted by stress
**Bloom's Taxonomy:** Knowledge

39. _____ is the insertion into the brain of an animal of a thin, insulated wire through which an electrical current is sent that destroys the brain cells at the tip of the wire.

a. EEG
b. Lesioning
c. Neuroplasticity
d. MRI

**Answer:** b
**Difficulty:** Moderate
**Topic:** Looking Inside the Living Brain
**Skill**: Remember the Facts
**Objective (LO):** 2.9 Describe how lesioning studies and brain stimulation are used to study the brain
**Bloom's Taxonomy**: Knowledge

40. Deep brain stimulation is widely used to treat _____.

a. Alzheimer's disease
b. schizophrenia
c. angina
d. Parkinson's disease

**Answer:** d
**Difficulty:** Moderate
**Topic:** Looking Inside the Living Brain
**Skill:** Understand the Concepts
**Objective (LO):** 2.9 Describe how lesioning studies and brain stimulation are used to study the brain.
**Bloom's Taxonomy:** Comprehension

41. Miguel had a metal plate inserted in his head after suffering a serious head injury. Miguel's doctor now wishes to examine his brain to see if any damage has occurred since his surgery. Which of the following procedures might the doctor prefer to use?

a. CT scan
b. MRI scan
c. EEG
d. PET scan

**Answer:** a
**Difficulty:** Moderate
**Topic:** Looking Inside the Living Brain
**Skill:** Apply What You Know
**Objective (LO):** 2.10 Compare and contrast neuroimaging techniques for mapping the brains' structure and function
**Bloom's Taxonomy:** Application

42. When researchers destroy the reticular formation of rats via deep lesioning, the rats _____.

a. lose all of their mobility and become incapable of walking
b. begin eating and will not stop until their stomachs rupture and they die.
c. enter a coma-like sleep from which they do not wake up.
d. become blind.

**Answer:** c
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Remember the Facts
**Objective (LO):** LO 2.11 Identify the different structures of the hindbrain and the function of each.
**Bloom's Taxonomy:** Knowledge

43. The _____ stimulates the upper part of the brain, keeping people awake and alert

a. cerebellum
b. Pons
c. reticular activating system
d. limbic system

**Answer:** c
**Difficulty**: Moderate
**Topic**: From the Bottom Up: The Structures of the Brain
**Skill:** Remember the Facts
**Objective's (LO):** 2.11 Identify the different structures of the hindbrain and the function of each
**Bloom's Taxonomy**: Knowledge

44. Which brain structure serves as a relay station for sensory information?

a. Limbic system
b. Hypothalamus
c. Thalamus
d. Amygdala

**Answer:** c
**Difficulty:** Moderate
**Topic**: From the Bottom Up: The structures of the Brain
**Skill:** Understand the Concepts
**Objective (LO):** 2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation
**Bloom's Taxonomy:** Comprehension

45. Humans with damage to the amygdala show decreased _____.

a. fear response
b. sex drive
c. incidence of depression
d. cancer risk

**Answer:** a
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Understand the Concepts
**Objective (LO):** 2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation.
**Bloom's Taxonomy:** Comprehension

46. The visual centers of the brain area are contained in the _____.
a. corpus callosum
b. parietal lobes
c. temporal lobes
d. occipital lobes

**Answer:** d
**Difficulty:** Moderate
**Topic**: From the Bottom Up: The Structures of the Brain
**Skill:** Remember the Facts
**Objective (LO):** 2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body
**Bloom's Taxonomy:** Knowledge

47. Phineas Gage lacked _____ because of the damage to his prefrontal cortex.
a. bladder control
b. common sense
c. a conscience
d. emotional control

**Answer:** d
**Difficulty:** Difficult
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Understand the Concepts
**Objective (LO**): 2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body
**Bloom's Taxonomy:** Comprehension

48. Cassie's mother suffered a stroke. Since then, she sometimes says strange things, such as, "I need to go to the store to buy some canaries," when she means to say that she needs groceries. Cassie's mother seems to be suffering from _____.
a. nonspecific aphasia.
b. language degenerative disease
c. Broca's aphasia.
d. Wernicke's aphasia

**Answer:** d
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Apply What You Know
**Objective (LO):** 2.14 Name the parts of the cortex responsible for higher forms of thought, such as language
**Bloom's Taxonomy**: Application

49. Roger Sperry was looking for a cure for which disease when researching differentiation of the left and right hemispheres of the brain?
a. Epilepsy
b. Parkinson's
c. Spatial neglect
d. Aphasia

**Answer:** a
**Difficulty:** Easy
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Remember the Facts
**Objective (LO):** 2.15 Explain how some brain functions differ between the left and right hemispheres
**Bloom's Taxonomy:** Knowledge

50. The left hemisphere of the brain specializes in which of the following?
a. Visual-spatial perception
b. Language
c. Emotional thought and recognition
d. Pattern recognition

**Answer:** b
**Difficulty:** Difficult
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Understand the Concepts
**Objective (LO):** 2.15 Explain how some brain functions differ between the left and right hemispheres
**Bloom's Taxonomy:** Comprehension

51. Much of the research over the past 10 years has focused on the _____ markers for ADHD, such as attention problems, which may or may not be combined with neuroimaging.
a. environmental
b. biological
c. cognitive
d. behavioral

**Answer:** c
**Difficulty:** Moderate
**Topic:** Applying Psychology to Everyday Life
**Skill:** Remember the Facts
**Objective (LO):** 2.16 Identify some potential causes of attention-deficit/hyperactivity disorder.
**Bloom's Taxonomy:** Knowledge

52. Which of the following examples would be most similar to a neuron?
a. A gun that fires when the trigger is pulled
b. Tree branches that grow after receiving nourishment from the sun and rain
c. A silicon chip in a computer that receives and transmits information between input and output devices as well as between other chips
d. A nozzle at the end of a hose from which water is squirted

**Answer:** c
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill**: Apply What You Know
**Objective (LO):** 2.1 Identify the parts of a neuron and describe the function of each
**Bloom's Taxonomy:** Application

53. Which of the following parts of a neuron work most like a telephone wire that carries information away from a telephone?
a. Synapse
b. Dendrites
c. Soma
d. Axon

**Answer:** d
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Apply What You Know
**Objective (LO):** 2.1 Identify the parts of a neuron and the function of each
**Bloom's Taxonomy**: Application

54. While cutting wood for his daughter's playhouse, Lee accidentally severed his finger. Fortunately, Lee was quickly rushed to the hospital where his finger was successfully reattached, and Lee was eventually able to regain some function and feeling in his once-severed appendage. Which of the following is/are responsible for helping to repair the nerve fibers in Lee's finger that give him the ability to regain function and feeling?
a. Glial cells
b. Schwann cells
c. Myelin
d. Oligodendrocytes

**Answer:** b
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Apply What You Know
**Objective (LO):** 2.1 Identify the parts of a neuron and the function of each.
**Bloom's Taxonomy:** Application

55. In a railway system, once a train stops at a particular location, people are able to exit the train and walk through a corridor that eventually connects to another train. Which part of the neuron works much like the train station?

a. Synapse
b. Dendrites
c. Soma
d. Axon terminal

**Answer:** a
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Apply What You Know
**Objective (LO):** 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy:** Application

56. Lately, Wanda has been having trouble sleeping at night, and has also experienced a sharp decline in appetite and energy level. A decrease in which of the following neurotransmitters might be responsible for Wanda's sudden change in behavior?

a. Dopamine
b. Serotonin
c. Endorphins
d. GABA

**Answer:** b
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Apply What You Know
**Objective (LO):** 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy:** Application

57. Researchers have found that nicotine, one of the main substances in cigarettes, indirectly releases dopamine, which produces a "feel good" sensation in people who smoke. Based on this finding, nicotine would be an example of a(n) _____.

a. excitatory neurotransmitter
b. inhibitory neurotransmitter
c. antagonist.
d. agonist

**Answer**: d
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Apply What You Know
**Objective (LO):** 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy:** Application

58. To help control Chloe's nausea, Chloe's doctor gives her Zofran (ondansetron), which blocks the action of serotonin, a chemical involved in the body's nausea response. In Chloe's case, the medication prescribed by her doctor acts as a(n) _____.

a. excitatory neurotransmitter.
b. inhibitory neurotransmitter
c. antagonist.
d. agonist

**Answer:** c
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Apply What You Know
**Objective (LO):** 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy:** Application

59. A team of researchers is working on a new procedure that could result in the regrowth of neurons in the spinal cord. With which part of the nervous system is the team most concerned?
a. Peripheral nervous system
b. Sympathetic nervous system
c. Parasympathetic nervous system
d. Central nervous system

**Answer:** d
**Difficulty:** Moderate
**Topic:** An Overview of the Nervous System
**Skill:** Apply What You Know
**Objective (LO):** 2.4 Describe how the components of the central nervous system interact and how they may respond to experience or injury
**Bloom's Taxonomy:** Application

60. Alicia quickly pulled back her hand just as she touched the hot curling iron on the dresser. Which neuron is responsible for carrying the message from the muscles in Alicia's hand to her spinal cord, allowing her to yank her hand away from the hot curling iron?
a. Efferent neuron
b. Afferent neuron
c. Interneuron
d. Reflex neuron

**Answer:** b
**Difficulty:** Moderate
**Topic:** An Overview of the Nervous System
**Skill:** Apply What You Know
**Objective (LO):** 2.4 Describe how the components of the central nervous system interact and how they may respond to experience or injury
**Bloom's Taxonomy:** Application

61. Running, lifting a book, and sweeping a floor are all actions associated with the use of which nervous system?
a. Somatic
b. Autonomic
c. Central
d. Sympathetic

**Answer:** a
**Difficulty:** Moderate
**Topic:** An Overview of the Nervous System
**Skill:** Apply What You Know
**Objective (LO):** 2.5 Differentiate the roles of the somatic and autonomic nervous systems
**Bloom's Taxonomy:** Application

62. Just as Khalif approaches the podium to give his speech, he realizes that his heart is racing, his mouth is dry, his breathing is faster, and his mind is completely blank. The division of Khalif's nervous system that has just been activated is the _____.
a. parasympathetic division
b. sympathetic division
c. central division
d. somatic division

**Answer:** b
**Difficulty:** Moderate
**Topic:** An Overview of the Nervous System
**Skill:** Apply What You Know
**Objective (LO):** 2.5 Differentiate the roles of the somatic and autonomic nervous systems
**Bloom's Taxonomy:** Application

63. After an exhausting 10K run, Sophie sits down to allow her body to rest. Several minutes later, she notices that her breathing and heart rate have slowed down, and she begins to feel extremely hungry. The division of the nervous system responsible for Sophie's physiological changes is the _____.

a. parasympathetic division
b. sympathetic division
c. central division
d. somatic division

**Answer:** a
**Difficulty:** Moderate
**Topic:** An Overview of the Nervous System
**Skill:** Apply What You Know
**Objective (LO):** 2.5 Differentiate the roles of the somatic and autonomic nervous systems
**Bloom's Taxonomy:** Application

64. At the age of 21, Donte stands at 5 feet 2 inches in height. If it is believed that an endocrine gland is most likely responsible for Donte's lack of growth, which gland might his doctor be most interested in studying?

a. the pineal gland
b. the adrenal gland
c. the thyroid gland
d. the pituitary gland

**Answer:** d
**Difficulty:** Moderate
**Topic:** The Endocrine Glands
**Skill:** Apply What You Know
**Objective (LO):** 2.6 Explain why the pituitary gland is known as the "master gland."
**Bloom's Taxonomy**: Application

65. Miley suffers from sleep deprivation because her body doesn't produce enough melatonin. Which gland is most likely responsible for Miley's sleep deprivation?

a. Pineal gland
b. Adrenal gland
c. Thyroid gland
d. Pituitary gland

**Answer:** a
**Difficulty:** Moderate
**Topic:** The Endocrine Glands
**Skill:** Apply What You Know
**Objective (LO):** 2.7 Recall the role of various endocrine glands
**Bloom's Taxonomy:** Application

66. Collin has diabetes for which he has to receive insulin shots. Collin's need for insulin is most likely related to problems with his _____.

a. adrenal glands
b. pancreas
c. thyroid glands
d. gonads

**Answer:** b
**Difficulty:** Moderate
**Topic:** The Endocrine Glands
**Skill:** Apply What You Know
**Objective (LO):** 2.7 Recall the role of various endocrine glands
**Bloom's Taxonomy**: Application

67. An auto accident rendered Chris's nervous system unable to send messages for him to swallow, so he is using a feeding tube. Which brain structure was most likely damaged in the accident?

a. Pons
b. Reticular formation
c. Medulla
d. Cerebellum

**Answer:** c
**Difficulty:** Moderate

**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Apply What You Know
**Objective (LO):** 2.11 Identify the different structures of the hindbrain and the function of each
**Bloom's Taxonomy:** Application

68. Jared is 2 months old and cannot yet sit upright on his own. Jared's inability to sit on his own is most likely due to which of the following?

a. Jared suffers from an enlarged medulla.
b. Jared's cerebellum has not yet fully developed
c. Jared has a lesion in his midbrain.
d. Jared's reticular formation failed to form properly during prenatal development

**Answer:** b
**Difficulty:** Difficult
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Apply What You Know
**Objective (LO):** 2.11 Identify the different structures of the hindbrain and the function of each
**Bloom's Taxonomy:** Application

69. Darius has been diagnosed with a tumor that affects the right side of his visual field. The tumor is most likely in which lobe of Darius's brain?

a. Right frontal lobe
b. Left frontal lobe
c. Left occipital lobe
d. Right occipital lobe

**Answer:** c
**Difficulty:** Moderate
**Topic**: From the Bottom Up: The Structures of the Brain
**Skill:** Apply What You Know
**Objective (LO):** 2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body
**Bloom's Taxonomy:** Application

70. In an attempt to ask for water, Josh, who recently experienced a stroke, said, "I…dot dink…otter." Josh seems to be suffering from _____.

a. Wernicke's aphasia
b. Sperry's aphasia
c. Broca's aphasia
d. Berger's aphasia

**Answer:** c
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Apply What You Know
**Objective (LO):** 2.14 Name the parts of the cortex responsible for higher forms of thought, such as language
**Bloom's Taxonomy:** Application

## MyLab Formative Assessment

1. Xzasia has been suffering from severe bouts of depression for the past several years. Her doctor suggests that some medications designed to impact a specific neurotransmitter might be helpful for her. Which neurotransmitter would be the most likely target of this medication?

a. GABA
b. Dopamine
c. Serotonin
d. Acetylcholine

**Answer:** c
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Apply What You Know
**Objective (LO):** 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy**: Application

2. Young Keith was in a very bad accident during which specific parts of his brain were damaged. His neurologists noted that over the course of the next several months, other parts of his brain began to compensate for these deficits, and he was not as impaired as they had expected. Keith's case demonstrates the concept of _____.

a. neuroadaptivity
b. neuroplasticity
c. neurogenesis
d. dendritic pruning

**Answer**: b
**Difficulty:** Moderate
**Topic:** An Overview of the Nervous System
**Skill:** Apply What You Know
**Objective (LO):** 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury
**Bloom's Taxonomy:** Application

3. Kathy suffers from a brain disease that causes her to have tremors, an unsteady walk, dizziness, and slurred speech, among other symptoms. Which part of Kathy's brain is probably affected by this illness?

a. Thalamus
b. Hypothalamus
c. Amygdala
d. Cerebellum

**Answer:** d
**Difficulty:** Difficult
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Apply What You Know
**Objective (LO):** 2.11 Identify the different structures of the hindbrain and the function of each
**Bloom's Taxonomy:** Application

## MyLab Pre-Test

1. A branch of the life sciences that deals with the structure and functioning of the nervous system is called

a. neuroscience
b. biopsychology
c. bioscience
d. psychology

**Answer**: a
**Difficulty**: Easy
**Topic**: Neurons and Nerves: Building the Network
**Skill**: Remember the Facts
**Objective (LO)**: 2.1 Identify the parts of a neuron and describe the function of each.
**Bloom's Taxonomy**: Knowledge

2. Special types of glial cells generate a protective fatty substance called

a. dendrites
b. myelin
c. axons
d. cholesterol

**Answer:** a
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network

**Skill:** Remember the Facts
**Objective (LO):** 2.1. Identify the parts of a neuron and describe the function of each
**Bloom's Taxonomy:** Knowledge

3. When a neuron is at rest, the ions inside the cell are mostly _____ and the ions outside the cell are mostly _____.
   a. positively charged; negatively charged
   b. dead; alive
   c. negatively charged; positively charged
   d. small; large

**Answer:** c
**Difficulty:** Difficult
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Understand the Concepts
**Objective (LO):** 2.2 Explain the action potential
**Bloom's Taxonomy:** Comprehension

4. When the action potential gets to the end of the axon _____.
   a. the cell does not return to its resting state
   b. the cell dies
   c. the message is received by the brain
   d. the message gets transmitted to another cell

**Answer:** d
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Understand the Concepts
**Objective (LO):** 2.2 Explain the action potential
**Bloom's Taxonomy:** Comprehension

5. Neurons fire _____.
   a. stronger when there is a strong stimulus
   b. either full strength or not at all
   c. partially when there is a weak stimulus
   d. partially when there is a strong stimulus

**Answer:** b
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Understand the Concepts
**Objective (LO):** 2.2 Explain the action potential
**Bloom's Taxonomy:** Comprehension

6. The sac-like structures that are found at the end of a neuron's axon and that contain neurotransmitters are called
   a. synaptic vesicles
   b. axon terminals
   c. synaptic knobs
   d. dendrites

**Answer:** a
**Difficulty:** Easy
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Remember the Facts
**Objective (LO**): 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy:** Knowledge

7. According to the textbook, scientists are investigating the use of stem cells to _____.
   a. treat cancer
   b. alleviate depression
   c. repair damaged or diseased brain tissue
   d. cure birth defects

**Answer:** c
**Difficulty:** Moderate

**Topic:** An Overview of the Nervous System
**Skill:** Remember the Facts
**Objective (LO):** 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury
**Bloom's Taxonomy:** Knowledge

8. When people are walking, raising their hands in class, or smelling a flower, they are using the
   a. central nervous system
   b. somatic nervous system
   c. autonomic nervous system
   d. skeletal nervous system

**Answer:** b
**Difficulty:** Moderate
**Topic:** An Overview of the Nervous System
**Skill:** Understand the Concepts
**Objectives (LO):** 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury
**Bloom's Taxonomy:** Comprehension

9. If the pancreas secretes too much insulin, it results in a condition known as _____.

   a. premature baldness
   b. dyspepsia
   c. diabetes
   d. hypoglycemia

**Answer:** d
**Difficulty:** Moderate
**Topic:** The Endocrine Glands
**Skill:** Understand the Concepts
**Objective (LO):** 2.7 Recall the role of various endocrine glands
**Bloom's Taxonomy:** Comprehension

10. _____ was the founder of the field of research concerning stress and its effects on the human body
   a. Hans Selye
   b. Santiago Ramon y Cajal
   c. Carl Wernicke
   d. Hans Berger

**Answer:** a
**Difficulty:** Easy
**Topic:** The Endocrine System
**Skill:** Remember the Facts
**Objective (LO):** 2.8 Describe how the autonomic nervous system and body are impacted by stress
**Bloom's Taxonomy:** Knowledge

11. For which of the following reasons would a researcher prefer to study the brain through brain stimulation over lesioning?
   a. Lesioning can only be done with people
   b. Brain stimulation causes no negative side effects.
   c. Lesioning only works with individuals who have already suffered brain damage
   d. Brain stimulation is a less harmful technique

**Answer:** d
**Difficulty:** Difficult
**Topic:** Looking Inside the Living Brain
**Skill:** Analyze It

**Objective (LO):** 2.9 Describe how lesioning studies and brain stimulation are used to study the brain
**Bloom's Taxonomy:** Analysis

12. Which of the three primary divisions of the brain is important for both sensory and motor functions?
    a. The right brain
    b. The left brain
    c. The midbrain
    d. The forebrain

**Answer:** c
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Remember the Facts
**Objective (LO):** 2.11 Identify the different structures of the hindbrain and the function of each
**Bloom's Taxonomy:** Knowledge

13. Damage to the medulla could likely cause problems with which of the following functions?
    a. Seeing
    b. Hearing
    c. Feeling
    d. Swallowing

**Answer:** d
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Understand the Concepts
**Objective (LO):** 2.11 Identify the different structures of the hindbrain and the function of each
**Bloom's Taxonomy:** Comprehension

14. The thalamus, hypothalamus, hippocampus, amygdala, and cingulate cortex are all part of the
    a. parasympathetic system
    b. endocrine system
    c. sympathetic system
    d. limbic system

**Answer:** d
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structure of the Brain
**Skill:** Remember the facts
**Objective (LO):** 2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation
**Bloom's Taxonomy:** Knowledge

15. Most pictures of the brain simply display the outermost covering, this part of the brain is called the?
    a. cerebellum
    b. medulla
    c. cortex
    d. thalamus

**Answer:** c
**Difficulty:** Easy
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Remember the Facts
**Objective (LO):** 2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body
**Bloom's Taxonomy:** Knowledge

16. Handedness is generally associated with functions of the
    a. motor cortex
    b. nerve cells
    c. cerebral hemispheres
    d. frontal lobes

**Answer:** c
**Difficulty:** Difficult
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Understand the Concepts
**Objective (LO):** 2.15 Explain how some brain functions differ between the left and right hemispheres
**Bloom's Taxonomy:** Comprehension

17. Which of the following neuroimaging techniques would be best used for investigating conditions such as dementia and schizophrenia?

a. EEG
b. CT Scan
c. PET
d. DTI

**Answer:** d
**Difficulty:** Difficult
**Topic:** Looking Inside the Living Brain
**Skill:** Analyze It
**Objective (LO):** 2.17 Compare and contrast neuroimaging techniques for mapping the brain's structure and function.
**Bloom's Taxonomy:** Analysis

18. Attention-deficit/hyperactivity disorder (ADHD) is most commonly diagnosed in _____.

a. older adults
b. young adults
c. children
d. adolescents

**Answer:** c
**Difficulty:** Moderate
**Topic:** Applying Psychology to Everyday Life: Paying Attention to Attention-Deficit/ Hyperactivity Disorder
**Skill:** Remember the Facts
**Objective (LO):** 2.16 Identify some potential causes of attention-deficit/hyperactivity disorder
**Bloom's Taxonomy:** Knowledge

19. The venom of a black widow spider is an example of a(n) _____, which mimics or enhances the effects of neurotransmitters

a. beta blocker
b. antagonist
c. endorphin
d. agonist

**Answer:** d
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Apply What you Know
**Objective (LO):** 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body.
**Bloom's Taxonomy:** Application

20. Pytor was in a coma for several days after falling from a ladder. The doctor indicated that he suffered damage to an area of his brain. Which area of Pytor's brain was most likely damaged?

a. The thalamus
b. The cerebellum
c. The basal ganglia
d. The recticular

**Answer:** d
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Apply What You Know
**Objective (LO):** 2.11 Identify the different structures of the hindbrain and the function of each
**Bloom's Taxonomy:** Application

21. Following his involvement in a car accident, Kendall was told that he might experience problems performing mental or motor tasks as result of damage to his brain. Which area of Kendall's brain was most likely damaged?

a. The frontal lobes
b. Broca's area
c. The parietal lobes
d. Wernicke's area

**Answer:** a
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Apply What You Know
**Objective (LO):** 2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body
**Bloom's Taxonomy:** Application

22. Greater amounts of corticalization, or wrinkling, in the cortex are associated with?

a. increases in intelligence
b. increases in brain and size complexity
c. decreases in age
d. decreases in neurons

**Answers:** b
**Difficulty:** Difficult
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Analyze It
**Objective (LO):** 2.13 Identify the parts of the cortex that process the different senses and those that control the movement of the body
**Bloom's Taxonomy:** Analysis

23. A stroke left Bob with an inability to recognize the left side of his visual field. Bob's condition is called

a. Wernicke's aphasia
b. Broca's aphasia
c. spatial neglect
d. spinocerebellar degeneration

**Answer:** c
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Apply What You Know
**Objective (LO):** 2.14 Name the parts of the cortex responsible for higher forms of thought, such as language
**Bloom's Taxonomy:** Application

24. Broca's aphasia is the inability to _____ language, whereas Wernicke's aphasia is the inability to _____ language.

a. remember; hear
b. comprehend; ask
c. hear; remember
d. produce; understand

**Answer:** d
**Difficulty:** Difficult
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Analyze It
**Objective (LO):** 2.14 Name the parts of the cortex responsible for higher forms of thought, such as language
**Bloom's Taxonomy:** Analysis

25. Which statement most accurately explains the difference in functioning between the right hemisphere of the brain and the left hemisphere?

a. The right specializes in logical thought processes
b. The right processes information from the right side of the body, whereas the left processes information from the left side.
c. The right processes information all at once, whereas the left breaks things down into parts.
d. The right sees things upside down, whereas the left sees them right-side up

**Answer:** c
**Difficulty:** Difficult
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Analyze It
**Objective (LO):** 2.15 Explain how some brain functions differ between the left and right hemispheres
**Bloom's Taxonomy:** Analysis

## MyLab Post-Test

1. The _____ is the cell body, which contains the nucleus.
a. soma
b. dendrite
c. axon
d. neuron

**Answer:** a
**Difficulty:** Easy
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Remember the Facts
**Objective (LO):** 2.1 Identify the parts of a neuron and describe the function of each
**Bloom's Taxonomy:** Knowledge

2. In the disease _____, the myelin sheath is destroyed
a. multiple sclerosis
b. epilepsy
c. depression
d. schizophrenia

**Answer:** a
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Understand the Concepts
**Objective (LO):** 2.1 Identify the parts of a neuron and describe the function of each
**Bloom's Taxonomy:** Comprehension

3. The brain is primarily composed of two different kinds of cells. They are neurons and
a. glial cells
b. synapses
c. myelin
d. somas

**Answer:** a
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Remember the Facts
**Objective (LO):** 2.1 Identify the parts of a neuron and describe the function of each
**Bloom's Taxonomy:** Knowledge

4. When neurons fire and transmit messages, they _____.
a. begin slowly, then gradually increase in velocity
b. begin rapidly, then gradually slow down
c. do so in an all-or-none fashion
d. sometimes transmit information partially, depending on signal strength

**Answer**: c
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Understand the Concepts
**Objective (LO):** 2.2 Explain the action potential
**Bloom's Taxonomy:** Comprehension

5. What is a biological reason for why heroin is addictive?
a. Neurotransmitters are damaged and continue sending stimulating messages to cells.
b. It produces an excess of dopamine in the brain.
c. The bodies of heroin users do not produce endorphins, so withdrawal is very painful.
d. Heroin bonds with serotonin, producing mental confusion in users.

**Answer:** c
**Difficulty:** Difficult
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Understand the Concepts
**Objective (LO): 2.3** Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy:** Comprehension

6. The first identified neurotransmitter was _____.
a. dopamine
b. acetylcholine
c. serotonin
d. melatonin

**Answer:** b
**Difficulty:** Easy
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Remember the Facts
**Objective (LO):** 2.3. Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy:** Knowledge

7. It has been found that neurons may release _____ neurotransmitter(s) at a time
a. no more than one
b. more than twenty
c. hundreds of
d. more than one

**Answer**: d
**Difficulty:** Moderate
**Topic:** Neurons and Nerves: Building the Network
**Skill:** Remember the Facts
**Objective (LO):** 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body
**Bloom's Taxonomy:** Knowledge

8. Walking, riding a bike, raising a hand, and picking up a fork are all involve the use of the _____ nervous system.
a. autonomic
b. somatic
c. parasympathetic
d. sympathetic

**Answer:** b
**Difficulty**: Moderate
**Topic:** An Overview of the Nervous System
**Skill:** Understand the Concepts
**Objective (LO):** 2.5 Differentiate the roles of the somatic and autonomic nervous systems
**Bloom's Taxonomy:** Comprehension

9. In the _____ stage of the General Adaptation Syndrome, reactions such as fever, nausea, and headache are common.
a. resistance
b. alarm
c. resolution
d. exhaustion

**Answer:** b
**Difficulty:** Moderate
**Topic:** The Endocrine Glands
**Skill:** Remember the Facts
**Objective (LO):** LO 2.8 Describe how the autonomic nervous system and body are impacted by stress
**Bloom's Taxonomy**: Knowledge

10. Which of the three primary divisions of the brain includes the cortex, basal ganglia, and the limbic system?
a. Hindbrain
b. Left brain
c. Midbrain
d. Forebrain

**Answer:** d
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Remember the Facts
**Objective (LO**): 2.11 Identify the different structures of the hindbrain and the function of each.
**Bloom's Taxonomy:** Knowledge

11. Damage to the cerebellum could likely result in the malfunction of
a. hearing
b. seeing
c. breathing
d. fine motor movement

**Answer**: d
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Understand the Concept
**Objective (LO):** 2.11 Identify the different structures of the hindbrain and the function of each.
**Bloom's Taxonomy:** Comprehension

12. The _____ includes the two cerebral hemispheres of the brain, including the cortex.
a. inner brain
b. hindbrain
c. midbrain
d. forebrain

**Answer:** d
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Remember the Facts
**Objective (LO):** 2.12 Identify the structures of the brain involved in emotion, learning, memory, and motivation
**Bloom's Taxonomy:** Knowledge

13. The _____ cortex is the part of the brain that helps identify and make sense of the visual information from the eyes.
a. somatosensory
b. primary visual
c. visual association
d. bilateral

**Answer:** c
**Difficulty:** Moderate
**Topic**: From the Bottom Up: The Structures of the Brain
**Skill:** Remember the Facts
**Objective (LO):** 2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body
**Bloom's Taxonomy:** Knowledge

14. Which of the following functions is controlled by the left hemisphere of the brain?
a. Pattern recognition
b. Music processing
c. Spoken language
d. Visual-spatial perception

**Answer:** c
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Remember the Facts
**Objective (LO):** 2.15 Explain how some brain functions differ between the left and right hemispheres
**Bloom's Taxonomy:** Knowledge

15. Scientists have learned a great deal about the specialization of the left and right hemispheres of the brain by studying _____.

a. CT scans
b. Phineas Gage
c. split-brain patients
d. Alzheimer's patient

**Answer:** c
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Understand the Concepts
**Objective (LO):** 2.15 Explain how some brain functions differ between the left and right hemispheres
**Bloom's Taxonomy:** Comprehension

16. Mel does not have to consciously think about his muscle tone, balance, or posture. This is because of the role of the _____.

a. medulla
b. cerebellum
c. basal ganglia
d. reticular formation

**Answer**: b
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Apply What You Know
**Objective (LO):** 2.11 Identify the different structures of the hindbrain and the function of each
**Bloom's Taxonomy:** Application

17. After suffering from a concussion, Raymond began having trouble with his vision. Which area of Raymond's brain was most likely damaged?

a. the occipital lobes
b. Broca's area
c. Wernicke's area
d. the frontal lobes

**Answer:** a
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Apply What You Know
**Objective (LO):** 2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body
**Bloom's Taxonomy:** Application

18. As wrinkling of the cortex increases _____.

a. intelligence increases
b. brain size and complexity increase
c. neurotransmission decreases
d. brain matter decreases

**Answer:** b
**Difficulty:** Difficult
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Analyze It
**Objective (LO):** 2.13 Identify the parts of the cortex that process the different senses and those that control movement of the body

**Bloom's Taxonomy:** Analysis

19. Which of the following neuroimaging techniques would be best used for examining the brain of a person who has metal in his or her body?

a. EEG
b. CT scan
c. PET
d. DTI

**Answer:** b
**Difficulty:** Difficult
**Topic:** Looking Inside the Living Brain
**Skill:** Analyze It
**Objective (LO):** 2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure and function
**Bloom's Taxonomy:** Analysis

20. Fred has a tumor in his brain that causes him to use words that are often mispronounced. Fred appears to be suffering from

a. Wernicke's aphasia.
b. Broca's aphasia.
c. spatial neglect.
d. spinocerebellar degeneration.

**Answer:** b
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Apply What You Know
**Objective (LO):** 2.14 Identify the parts of the cortex responsible for higher forms of thought, such as language.
**Bloom's Taxonomy:** Application

21. One important advantage of an MRI over a CT scan is that the MRI

a. highlights damaged areas of the brain
b. shows all the deeper areas of the brain
c. provides much more detail
d. is more portable

**Answer**: c
**Difficulty:** Difficult
**Topic:** Looking Inside the Living Brain
**Skill:** Analyze It
**Objective (LO):** 2.10 Compare and contrast neuroimaging techniques for mapping the brain's structure and function
**Bloom's Taxonomy:** Analysis

22. Maria is pregnant. Which gland will be responsible for releasing the hormone oxytocin, which will help Maria's body to produce milk?

a. The thyroid gland
b. The ovaries
c. The pancreas
d. The pituitary gland

**Answer:** d
**Difficulty:** Moderate
**Topic:** The Endocrine Glands
**Skill:** Apply What You Know
**Objective (LO):** 2.6 Explain why the pituitary gland is known as the "master gland."
**Bloom's Taxonomy:** Application

23. As Caroline's hand touched the iron, she quickly pulled it back realizing that the iron was hot. The neuron responsible for allowing Caroline to pull back her hand is the _____.

a. afferent neuron
b. efferent neuron
c. interneuron
d. reflex neuron

**Answer:** c
**Difficulty:** Difficult
**Topic:** An Overview of the Nervous System
**Skill:** Apply What You Know
**Objective (LO):** 2.4 Describe how the components of the central nervous system interact, and how they may respond to experience or injury
**Bloom's Taxonomy:** Application

24. Jesse has suffered damage to the right parietal and occipital lobes of the cortex and tends to ignore everything in the left visual field. Jesse has a condition called _____.

a. Klüver-Bucy syndrome
b. Wernicke's aphasia
c. Broca's aphasia
d. spatial neglect

**Answer:** d
**Difficulty:** Moderate
**Topic:** From the Bottom Up: The Structures of the Brain
**Skill:** Apply What You Know
**Objective (LO):** 2.14 Identify the parts of the cortex responsible for higher forms of thought, such as language
**Bloom's Taxonomy:** Application

25. Low-level lead exposure is a(n) _____ factor that may be related to the cause of attention-deficit/hyperactivity disorder (ADHD)

a. environmental
b. biological
c. cognitive
d. behavioral

**Answer:** a
**Difficulty:** Easy
**Topic:** Applying Psychology to Everyday Life
**Skill:** Remember the Facts
**Objective (LO):** 2.16 Identify some potential causes of attention-deficit/hyperactivity disorder
**Bloom's Taxonomy:** Knowledge