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 the function of each.	1-10, 12-13, 17-18, 20-26, 199-202, 228-229, 242	15, 19	16	11, 14
LO 2.2 Explain the action potential.	27-29, 31, 203-205, 228, 242	30, 32, 34		33
LO 2.3 Describe how neurons use neurotransmitters to communicate with each other and with the body.	35-39, 41, 45, 47, 49, 51, 53-54, 56, 206-207, 230-232	42-43, 58-59	46, 48, 50, 57	40, 44, 52, 55
LO 2.4 Describe how the brain and spinal cord interact and respond to external experiences.	60-67, 69, 208-212, 243	70, 74	68, 71, 73	72, 233
LO 2.5 Differentiate the roles of the somatic and autonomic nervous systems.	75-76, 78-81, 85-86, 88-90, 92, 213-214, 244	77, 83	82, 84, 87, 91, 93-94	233-234
LO 2.6 Explain why the pituitary gland is known as the "master gland."	96-97, 245	95		
LO 2.7 Recall the role of various endocrine glands.	98-100, 103-104, 215-219, 235, 246		101-102, 105	
LO 2.8 Describe how lesioning studies and brain stimulation are used to study the brain.	106	107		
LO 2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain.	108, 112, 115-116, 118, 220, 236	111, 121	109-110, 113-114, 117, 119-120, 122	
LO 2.10 Identify the different structures of the hindbrain and the function of each.	123-124, 126-127, 129, 131, 134-135, 221		125, 128, 130, 132-133, 136-139	
LO 2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation.	140-143, 146-147, 149, 151-153	148	145, 150, 154-155, 222	144
LO 2.12 Identify the parts of	156-159, 161-	164, 179	160, 165, 168-169,	

Learning Objectives	Remember the Facts	Understand the Concepts	Apply What You Know	Analyze It
LO 2.13 Name the parts of the cortex that are responsible for higher forms of thought, such as language.	182-183, 185, 225, 238-239, 247		184, 186-187	
LO 2.14 Explain how some brain functions differ between the left and right hemispheres.	188, 191, 195-196, 198, 226-227, 240	192, 194	189-190, 193, 197	241
LO 2.15 Identify some potential causes of attention-deficit/hyperactivity disorder.				

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 hormone released by the pineal gland that reduces body temperature and prepares you for sleep is _____.
   a) melatonin
   b) DHEA
   c) parathormone
   d) thyroxin

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
   c) temporal lobe

b) parietal 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 brain and spinal cord interact and respond to external experiences, 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 brain and spinal cord interact and respond to external experiences, 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. a Explanation: *The pineal gland secretes melatonin.* (Topic: Distant Connections: The Endocrine Glands, Remember the Facts, 1 - Easy, LO 2.7 - Recall the role of various endocrine glands, 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 2.9 - Compare and contrast neuroimaging techniques for mapping the structure and function of the brain, 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 2.11 - 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 2.12 - 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 2.14 – 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. 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 the _____.
   a) reticular activating system
   b) pons
   c) medulla
   d) cerebellum

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 brain and spinal cord interact and respond to external experiences, 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: This is the point where nerves cross over. (Topic: From the Bottom Up: The Structures of the Brain, Remember the Facts, 2 - Moderate, LO 2.10 - Identify the different structures of the hindbrain and the function of each, 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 2.11 - 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 2.12 - 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 2.13 - Name the parts of the cortex that are 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 2.14 - 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 nervous system

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
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_06_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_07_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_08_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)

% correct 70 a= 5 b= 70 c= 2 d= 23 *r* = .37
% correct 74 a= 0 b= 74 c= 26 d= 1 *r* = .32
APA=1.1

TB_02_09_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_10_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_11_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_12_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_13_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_14_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_15_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_16_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_17_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_18_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_19_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_20_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_21_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_22_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_23_Neurons and Nerves: Building the Network_Remember_LO 2.1, APA 1.1
Which of the following is TRUE about myelin?
a) It's 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_24_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_25_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_26_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_27_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_28_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_29_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_30_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_31_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_32_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_33_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_34_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_35_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_36_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_37_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_38_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_39_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_40_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_41_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_42_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_43_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_44_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_45_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_46_Neurons and Nerves: Building the Network_Apply_LO 2.3, APA 1.1, 1.3
After being bitten by a black widow spider, Jean 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_47_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_48_Neurons and Nerves: Building the Network_Apply_LO 2.3, APA 1.1, 1.3
Sara 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_49_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_50_Neurons and Nerves: Building the Network_Apply_LO 2.3, APA 1.1, 1.3
Andy has decided to seek medical help for mood disturbances and appetite problems. Which neurotransmitter is most likely involved in the problems Andy 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_51_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_52_Neurons and Nerves: Building the Network_Analyze_LO 2.3, APA 1.1
The effect of alcohol is to enhance the effect of _____, which causes the general inhibition of the nervous system associated with getting drunk.

a) GABA

Correct. GABA is an inhibitory neurotransmitter.

b) serotonin
c) dopamine
d) acetylcholine

Incorrect. Acetylcholine is not associated with the effects of alcohol.

TOPIC: Neurons and Nerves: Building the Network
ANS: a, 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_53_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_54_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_55_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_56_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_57_Neurons and Nerves: Building the Network_Apply_LO 2.3, APA 1.1, 1.3
Isabella 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_58_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_59_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: The "Central Processing Unit"

Learning Objective 2.4 - Describe how the brain and spinal cord interact and respond to external experiences.

TB_02_60_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 brain and spinal cord interact and respond to external experiences., (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_61_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 brain and spinal cord interact and respond to

external experiences., (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_62_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 brain and spinal cord interact and respond to external experiences., (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_63_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 brain and spinal cord interact and respond to external experiences., (1)
% correct 85 a= 7 b= 85 c= 1 d= 7 *r* = .21
APA=1.1

TB_02_64_An Overview of the Nervous System_Remember_LO 2.4, APA 1.1
The long bundle of neurons that carries messages to and from the body to the brain and is responsible for very fast, lifesaving reflexes is called the _____.
a) spinal cord
Correct. The spinal cord carries messages to and from the body to the brain.
b) brain
Incorrect. The brain receives messages from the spinal cord.
c) reflexes
d) interneurons
TOPIC: An Overview of the Nervous System
ANS: a, Remember the Facts, LO=2.4 Describe how the brain and spinal cord interact and respond to external experiences., (1)

% correct 89 a= 89 b= 0 c= 2 d= 9 *r* = .31
APA=1.1

TB_02_65_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 to and from the brain to the body and is responsible for certain reflexes?

a) spinal cord

Correct. The spinal cord carries messages to and from the body to 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 brain and spinal cord interact and respond to external experiences., (2)
% correct 77 a= 77 b= 2 c= 19 d= 2 *r* = .29
APA=1.1

TB_02_66_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 brain and spinal cord interact and respond to external experiences., (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_67_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 brain and spinal cord interact and respond to external experiences., (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_68_An Overview of the Nervous System_Apply_LO 2.4, APA 1.1, 1.3
LaKeisha 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 LaKeisha'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 brain and spinal cord interact and respond to external experiences., (3)
% correct 58 a= 58 b= 2 c= 18 d= 521 *r* = .27
APA=1.1; 1.3

TB_02_69_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 brain and spinal cord interact and respond to external experiences., (2)
APA=1.1

TB_02_70_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 brain and spinal cord interact and respond to external experiences., (1)
% correct 80 a= 8 b= 80 c= 8 d= 3 *r* = .37
APA=1.1

TB_02_71_An Overview of the Nervous System_Apply_LO 2.4, APA 1.1, 1.3
Mary 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 brain and spinal cord interact and respond to external experiences., (1)
% correct 90 a= 5 b= 3 c= 90 d= 1 *r* = .27
APA=1.1; 1.3

TB_02_72_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 brain and spinal cord interact and respond to external experiences., (3)
% correct 49 a= 17 b= 49 c= 14 d= 21 *r* = .51
APA=1.1; 1.3

TB_02_73_An Overview of the Nervous System_Apply_LO 2.4, APA 1.1, 1.3
Jack suffered a brain injury as a result of hitting his head while waterskiing. One of the problems that developed was that Jack 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 to adjust to the trauma.

a) adaptology
b) stagnation
c) neuroplasticity

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

d) reflex arc

Incorrect. Neuroplasticity accounts for Jack'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 brain and spinal cord interact and respond to external experiences., (2)
APA=1.1; 1.3

TB_02_74_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 brain and spinal cord interact and respond to external experiences., (3)
APA=1.1

The Peripheral Nervous System: Nerves on the Edge

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

TB_02_75_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_76_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_77_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_78_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_79_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_80_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_81_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_82_An Overview of the Nervous System_Apply_LO 2.5, APA 1.1, 1.3

Vladimir 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_83_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_84_An Overview of the Nervous System_Apply_LO 2.5, APA 1.1, 1.3
As she walks out of the living room, Gloriann turns out the light. In this example, Gloriann'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_85_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_86_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_87_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_88_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_89_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_90_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_91_An Overview of the Nervous System_Apply_LO 2.5, APA 1.1, 1.3
As Molly 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 Molly'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)
% correct 73 a= 11 b= 0 c= 16 d= 73 *r* = .48
% correct 81 a= 11 b= 0 c= 9 d= 81 *r* = .51
APA=1.1; 1.3

TB_02_92_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_93_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 was responsible for putting Malcolm'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_94_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

Distant Connections: 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_95_Distant Connections: 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: Distant Connections: 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_96_Distant Connections: 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: Distant Connections: 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_97_Distant Connections: The Endocrine Glands_Remember_LO 2.6, APA 1.1

Which hormone has been dubbed the "love hormone" because if it's 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: Distant Connections: 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_98_Distant Connections: 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: Distant Connections: 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_99_Distant Connections: 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: Distant Connections: 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_100_Distant Connections: 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: Distant Connections: The Endocrine Glands
ANS: a, Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (1)
APA=1.1

TB_02_101_Distant Connections: The Endocrine Glands_Apply_LO 2.7, APA 1.1, 1.3
Tim 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: Distant Connections: 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_102_Distant Connections: The Endocrine Glands_Apply_LO 2.7, APA 1.1, 1.3
Denise 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: Distant Connections: 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_103_Distant Connections: 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: Distant Connections: 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_104_Distant Connections: 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: Distant Connections: The Endocrine Glands
ANS: a, Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (1)
APA=1.1

TB_02_105_Distant Connections: The Endocrine Glands_Apply_LO 2.7, APA 1.1, 1.3
Joe 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: Distant Connections: 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

Looking Inside the Living Brain

Methods for Studying Specific Regions of the Brain

Learning Objective 2.8 - Describe how lesioning studies and brain stimulation are used to study the brain.

TB_02_106_Looking Inside the Living Brain_Remember_LO 2.8, 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=2.8 Describe how lesioning studies and brain stimulation are used to study the brain., (1)
APA=1.1

TB_02_107_Looking Inside the Living Brain_Understand_LO 2.8, 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=2.8 Describe how lesioning studies and brain stimulation are used to study the brain., (2)
APA=2.4

Neuroimaging Techniques

Learning Objective 2.9 - Compare and contrast neuroimaging techniques for mapping the structure and function of the brain.

TB_02_108_Looking Inside the Living Brain_Remember_LO 2.9, 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=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (3)
% correct 30 a= 16 b= 42 c= 11 d= 30 *r* = .30
APA=2.4

TB_02_109_Looking Inside the Living Brain_Apply_LO 2.9, APA 2.4
Ali 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=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (3)
% correct 37 a= 18 b= 42 c= 4 d= 37 *r* = .30
APA=2.4

TB_02_110_Looking Inside the Living Brain_Apply_LO 2.9, APA 2.4
If Mindy'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=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (3)
APA=2.4

TB_02_111_Looking Inside the Living Brain_Understand_LO 2.9, 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=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (2)
APA=2.4

TB_02_112_Looking Inside the Living Brain_Remember_LO 2.9, 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=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (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_113_Looking Inside the Living Brain_Apply_LO 2.9, APA 2.4

Rashad 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=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (1)
% correct 93 a= 4 b= 93 c= 0 d= 4 *r* = .29
APA=2.4

TB_02_114_Looking Inside the Living Brain_Apply_LO 2.9, APA 2.4

Small metal disks are pasted onto Miranda'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 Miranda'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=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (1)
% correct 81 a= 10 b= 5 c= 4 d= 81 *r* = .35
APA=2.4

TB_02_115_Looking Inside the Living Brain_Remember_LO 2.9, 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=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (2)
APA=2.4

TB_02_116_Looking Inside the Living Brain_Remember_LO 2.9, 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=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (3)
% correct 31 a= 27 b= 19 c= 22 d= 31 *r* = .37
APA=2.4

TB_02_117_Looking Inside the Living Brain_Apply_LO 2.9, 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=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (3)
APA=2.4

TB_02_118_Looking Inside the Living Brain_Remember_LO 2.9, 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=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (3)
% correct 48 a= 25 b= 12 c= 48 d= 13 *r* = .37
APA=2.4

TB_02_119_Looking Inside the Living Brain_Apply_LO 2.9, APA 2.4
Libby'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=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (2)
APA=2.4

TB_02_120_Looking Inside the Living Brain_Apply_LO 2.9, APA 2.4
Marika 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 Marika'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=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (2)
APA=2.4

TB_02_121_Looking Inside the Living Brain_Understand_LO 2.9, APA 2.4
Which of the following is the primary benefit of SPECT over PET?
a) SPECT is a non-invasive neuroimaging technique, while PET is invasive.
b) SPECT offers the benefit of using radioactive tracers that are easier to obtain than PET.
Correct. SPECT allows the use of tracers that can be more easily obtained than those used in PET scans.
c) SPECT allows the monitoring of actual brain activity, while PET does not.
d) SPECT offers the monitoring of brain oxygen changes, while PET does not.
Incorrect. Both PET and SPECT can track changes in brain oxygenation levels.
TOPIC: Looking Inside the Living Brain
ANS: b, Understand the Concepts, LO=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (2)
APA=2.4

TB_02_122_Looking Inside the Living Brain_Apply_LO 2.9, 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=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., , (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 2.10 - Identify the different structures of the hindbrain and the function of each.

TB_02_123_From the Bottom Up: The Structures of the Brain_Remember_LO 2.10, 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=2.10 Identify the different structures of the hindbrain and the function of each., (3)
APA=1.1

TB_02_124_From the Bottom Up: The Structures of the Brain_Remember_LO 2.10, 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=2.10 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_125_From the Bottom Up: The Structures of the Brain_Apply_LO 2.10, APA 1.1, 1.3
An auto accident rendered Chris'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=2.10 Identify the different structures of the hindbrain and the function of each., (3)
% correct 48 a= 10 b= 48 c= 37 d= 5 *r* = .22
APA=1.1; 1.3

TB_02_126_From the Bottom Up: The Structures of the Brain_Remember_LO 2.10, 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=2.10 Identify the different structures of the hindbrain and the function of each., (2)
APA=1.1

TB_02_127_From the Bottom Up: The Structures of the Brain_Remember_LO 2.10, 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=2.10 Identify the different structures of the hindbrain and the function of each., (3)
APA=1.1

TB_02_128_From the Bottom Up: The Structures of the Brain_Apply_LO 2.10, 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 the _____.

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=2.10 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_129_From the Bottom Up: The Structures of the Brain_Remember_LO 2.10, 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=2.10 Identify the different structures of the hindbrain and the function of each., (2)
APA=1.1

TB_02_130_From the Bottom Up: The Structures of the Brain_Apply_LO 2.10, APA 1.1, 1.3
Since Jessica 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 her 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=2.10 Identify the different structures of the hindbrain and the function of each., (3)
% correct 46 a= 46 b= 22 c= 32 d= 1 *r* = .40
APA=1.1; 1.3

TB_02_131_From the Bottom Up: The Structures of the Brain_Remember_LO 2.10, 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=2.10 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_132_From the Bottom Up: The Structures of the Brain_Apply_LO 2.10, APA 1.1, 1.3
Katie 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 Katie is asleep. However, each time Katie wakes up and asks for the fan to be turned back on. Katie 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=2.10 Identify the different structures of the hindbrain and the function of each., (3)
APA=1.1; 1.3

TB_02_133_From the Bottom Up: The Structures of the Brain_Apply_LO 2.10, APA 1.1, 1.3
Alice 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 Alice 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=2.10 Identify the different structures of the hindbrain and the function of each., (2)
APA=1.1; 1.3

TB_02_134_From the Bottom Up: The Structures of the Brain_Remember_LO 2.10, 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=2.10 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_135_From the Bottom Up: The Structures of the Brain_Remember_LO 2.10, 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=2.10 Identify the different structures of the hindbrain and the function of each., (1)
APA=1.1

TB_02_136_From the Bottom Up: The Structures of the Brain_Apply_LO 2.10, 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=2.10 Identify the different structures of the hindbrain and the function of each., (3)
APA=1.1

TB_02_137_From the Bottom Up: The Structures of the Brain_Apply_LO 2.10, APA 1.1, 1.3
Tracey 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, she was likely to have suffered damage to her _____.
cerebellum
Correct. This part of the brain controls coordination and balance.
medulla
cerebral cortex
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=2.10 Identify the different structures of the hindbrain and the function of each., (2)
APA=1.1; 1.3

TB_02_138_From the Bottom Up: The Structures of the Brain_Apply_LO 2.10, 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=2.10 Identify the different structures of the hindbrain and the function of each., (2)
APA=1.1

TB_02_139_From the Bottom Up: The Structures of the Brain_Apply_LO 2.10, APA 1.1, 1.3
Jennifer 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 _____.
hippocampus
amygdala
cerebellum
Correct. This is the part of the brain that is affected by this disease.
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=2.10 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 2.11 - Identify the structures of the brain that are involved in emotion, learning, memory, and motivation.

TB_02_140_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, 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=2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation., (3)
APA=1.1

TB_02_141_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, 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=2.11 Identify the structures of the brain that are 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_142_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, 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=2.11 Identify the structures of the brain that are 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_143_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, 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=2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation., (2)
APA=1.1

TB_02_144_From the Bottom Up: The Structures of the Brain_Analyze_LO 2.11, 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=2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation., (2)
APA=1.1

TB_02_145_From the Bottom Up: The Structures of the Brain_Apply_LO 2.11, APA 1.1, 1.3
Jerry 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=2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation., (2)
% correct 75 a= 14 b= 75 c= 0 d= 12 *r* = .43
APA=1.1; 1.3

TB_02_146_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, 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=2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation., (2)
APA=1.1

TB_02_147_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, 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=2.11 Identify the structures of the brain that are involved 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_148_From the Bottom Up: The Structures of the Brain_Understand_LO 2.11, 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=2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation., (2)
APA=1.1

TB_02_149_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, 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=2.11 Identify the structures of the brain that are 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_150_From the Bottom Up: The Structures of the Brain_Apply_LO 2.11, 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=2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation., (2)
APA=1.1

TB_02_151_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, 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=2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation., (3)
APA=1.1

TB_02_152_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, 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=2.11 Identify the structures of the brain that are 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_153_From the Bottom Up: The Structures of the Brain_Remember_LO 2.11, 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=2.11 Identify the structures of the brain that are 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_154_From the Bottom Up: The Structures of the Brain_Apply_LO 2.11, APA 1.1, 1.3
Stan 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. Stan'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=2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation., (3)
APA=1.1; 1.3

TB_02_155_From the Bottom Up: The Structures of the Brain_Apply_LO 2.11, APA 1.1, 1.3
As Joe walks to his car late at night, he hears footsteps behind him. Feeling afraid, Joe grips his keys and quickens his pace. It is likely that Joe'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=2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation., (2)
APA=1.1; 1.3

The Cortex

Learning Objective 2.12 - Identify the parts of the cortex that process the different senses and those that control movement of the body.

TB_02_156_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, 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=2.12 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_157_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, 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 callosums

d) neurotransmitters

TOPIC: From the Bottom Up: The Structures of the Brain
ANS: a, Remember the Facts, LO=2.12 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_158_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, 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=2.12 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_159_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, APA 1.1
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

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=2.12 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_160_From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, 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=2.12 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_161_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, 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=2.12 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_162_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, 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=2.12 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_163_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, 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=2.12 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_164_From the Bottom Up: The Structures of the Brain_Understand_LO 2.12, 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=2.12 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_165_From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, APA 1.1, 1.3
John 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. John was shaken and reported to the trainer that he "saw stars" after he hit his head. As a result of "seeing stars," John'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=2.12 Identify the parts of the cortex that process the different senses and those that control movement of the body., (3)
% correct 92 a= 2 b= 92 c= 3 d= 3 *r* = .34
APA=1.1; 1.3

TB_02_166_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, 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=2.12 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_167_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, 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=2.12 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_168_From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, APA 1.1, 1.3

Al is trying to decide whether the shower is hot enough to step in. Hal is listening to his MP3 player. Sal is looking at a beautiful painting in an art museum. Which individual is using his parietal lobe?

a) Al

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

b) Hal

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

c) Sal
d) Hal and Sal are, but Al is not.

TOPIC: From the Bottom Up: The Structures of the Brain
ANS: a, Apply What You Know, LO=2.12 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_169_From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, APA 1.1, 1.3

Darla was in an automobile accident that resulted in an injury to her brain. Her sense of touch has been affected. Which part of the 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=2.12 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)
% correct 65 a= 20 b= 11 c= 4 d= 65 *r* = .30
% correct 62 a= 18 b= 16 c= 5 d= 62 *r* = .32
APA=1.1; 1.3

TB_02_170_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, APA 1.1

Which of the following regions 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=2.12 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)

% correct 63 a= 63 b=7 c= 22 d= 7 *r* = .44

APA=1.1

TB_02_171_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, 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=2.12 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_172_From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, APA 1.1, 1.3

Bobby B. 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, Bobby 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=2.12 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_173_From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, APA 1.1, 1.3

Warren 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=2.12 Identify the parts of the cortex that process the different senses and those that control movement of the body., (3)
% correct 64 a= 10 b= 21 c= 64 d= 5 *r* = .42
% correct 66 a= 8 b= 26 c= 66 d= 1 *r* = .38
APA=1.1; 1.3

TB_02_174_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, APA 1.1
Which of the following lobes 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=2.12 Identify the parts of the cortex that process the different senses and those that control movement of the body., (2)
% correct 70 a= 11 b= 0 c= 70 d= 18 *r* = .30
% correct 70 a= 10 b= 2 c= 70 d= 18 *r* = .34
APA=1.1

TB_02_175_From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, APA 1.1, 1.2, 1.3
Joella 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, Joella exhibited symptoms similar to that 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=2.12 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_176_From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, APA 1.2
Phineas Gage tragically had a tamping iron propelled through his head. Both left and right sides of the prefrontal cortex were severely damaged. As a result of the accident, Phineas Gage:
a) died from his injuries.

b) suffered loss of his arms and legs.
c) lost his sense of hearing.

Incorrect. Hearing is handled by the temporal lobe, not the frontal lobe of the brain.

d) suffered a change in personality.

Correct. After Phineas Gage's accident, his personality changed dramatically.

TOPIC: From the Bottom Up: The Structures of the Brain
ANS: d, Apply What You Know, LO=2.12 Identify the parts of the cortex that process the different senses and those that control movement of the body., (1)
APA=1.2

TB_02_177_From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, APA 1.1, 1.3

Ito 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, Ito 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=2.12 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_178_From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, APA 1.1, 1.3

Ever since he suffered a brain injury by falling from a ladder, Zack'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. Zack 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=2.12 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_179_From the Bottom Up: The Structures of the Brain_Understand_LO 2.12, 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=2.12 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_180_From the Bottom Up: The Structures of the Brain_Apply_LO 2.12, APA 1.1, 1.3

Marta was in an automobile accident and suffered an injury to her brain, resulting in paralysis of her left arm. What part of Marta'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=2.12 Identify the parts of the cortex that process the different senses and those that control movement of the body., (1)

% correct 82 a= 0 b= 82 c= 5 d= 11 *r* = .36

APA=1.1; 1.3

TB_02_181_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, 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=2.12 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 2.13 - Name the parts of the cortex that are responsible for higher forms of thought, such as language.

TB_02_182_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, 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=2.13 Name the parts of the cortex that are 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_183_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, APA 1.1
The area of the frontal lobe that is devoted to the production of fluent speech is _____ 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=2.13 Name the parts of the cortex that are responsible for higher forms of thought, such as language., (2)
% correct 74 a= 74 b= 3 c= 19 d= 4 *r* = .31
% correct 73 a= 73 b= 3 c= 21 d= 4 *r* = .27
APA=1.1

TB_02_184_From the Bottom Up: The Structures of the Brain_Apply_LO 2.13, APA 1.1, 1.3
Bill was admitted to the hospital last week after he fell. When Bill's son visited, he found that his father was unable to get words out in a smooth, connected fashion. If Bill's difficulty speaking is due to brain damage, what 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=2.13 Name the parts of the cortex that are responsible for higher forms of thought, such as language., (2)
% correct 75 a= 75 b= 2 c= 22 d= 2 *r* = .35
APA=1.1; 1.3

TB_02_185_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, 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 _____ 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=2.13 Name the parts of the cortex that are responsible for higher forms of thought, such as language., (3)
% correct 49 a= 37 b= 8 c= 49 d= 6 *r* = .35
APA=1.1

TB_02_186_From the Bottom Up: The Structures of the Brain_Apply_LO 2.13, APA 1.1, 1.3
Mary 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. Mary 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=2.13 Name the parts of the cortex that are responsible for higher forms of thought, such as language., (2)
APA=1.1; 1.3

TB_02_187_From the Bottom Up: The Structures of the Brain_Apply_LO 2.13, APA 1.1, 1.3
Robert'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. He 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=2.13 Name the parts of the cortex that are responsible for higher forms of thought, such as language., (3)
APA=1.1; 1.3

The Cerebral Hemispheres: Are You in Your Right Mind?

Learning Objective 2.14 - Explain how some brain functions differ between the left and right hemispheres.

TB_02_188_From the Bottom Up: The Structures of the Brain_Remember_LO 2.14, 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=2.14 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_189_From the Bottom Up: The Structures of the Brain_Apply_LO 2.14, APA 1.1
Since Norma 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=2.14 Explain how some brain functions differ between the left and right hemispheres., (1)
APA=1.1

TB_02_190_From the Bottom Up: The Structures of the Brain_Apply_LO 2.14, APA 1.1, 1.3
Pat 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=2.14 Explain how some brain functions differ between the left and right hemispheres., (2)
APA=1.1; 1.3

TB_02_191_From the Bottom Up: The Structures of the Brain_Remember_LO 2.14, 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=2.14 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_192_From the Bottom Up: The Structures of the Brain_Understand_LO 2.14, 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=2.14 Explain how some brain functions differ between the left and right hemispheres., (2)
APA=1.1

TB_02_193_From the Bottom Up: The Structures of the Brain_Apply_LO 2.14, APA 1.1

If Darren'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=2.14 Explain how some brain functions differ between the left and right hemispheres., (2)
APA=1.1

TB_02_194_From the Bottom Up: The Structures of the Brain_Understand_LO 2.14, 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=2.14 Explain how some brain functions differ between the left and right hemispheres., (2)
APA=1.1

TB_02_195_From the Bottom Up: The Structures of the Brain_Remember_LO 2.14, 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=2.14 Explain how some brain functions differ between the left and right hemispheres., (1)
APA=1.1

TB_02_196_From the Bottom Up: The Structures of the Brain_Remember_LO 2.14, 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=2.14 Explain how some brain functions differ between the left and right hemispheres., (1)
APA=1.1

TB_02_197_From the Bottom Up: The Structures of the Brain_Apply_LO 2.14, 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: From the Bottom Up: The Structures of the Brain
ANS: c, Apply What You Know, LO=2.14 Explain how some brain functions differ between the left and right hemispheres., (2)
APA=1.1; 1.3

Applying Psychology to Everyday Life

Paying Attention to Attention-Deficit/Hyperactivity Disorder

Learning Objective 2.15 - Identify some potential causes of attention-deficit/hyperactivity disorder

TB_02_198_From the Bottom Up: The Structures of the Brain_Remember_LO 2.14, 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: From the Bottom Up: The Structures of the Brain
ANS: a, Remember the Facts, LO=2.14 Explain how some brain functions differ between the left and right hemispheres., (3)
APA=1.1

TRUE OR FALSE

TB_02_199_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_200_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_201_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_202_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_203_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_204_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_205_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_206_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_207_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_208_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 brain and spinal cord interact and respond to external experiences., (1)
APA=1.1

TB_02_209_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 brain and spinal cord interact and respond to external experiences., (1)
APA=1.1

TB_02_210_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 brain and spinal cord interact and respond to external experiences., (2)
APA=1.1

TB_02_211_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 brain and spinal cord interact and respond to external experiences., (3)
APA=1.1

TB_02_212_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 brain and spinal cord interact and respond to external experiences., (2)
APA=1.1

TB_02_213_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_214_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_215_Distant Connections: The Endocrine Glands_Remember_LO 2.7, APA 1.1
Endocrine glands secrete chemicals directly into the body's tissues through specialized ducts.
TOPIC: Distant Connections: The Endocrine Glands
ANS: F, Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (1)
APA=1.1

TB_02_216_Distant Connections: The Endocrine Glands_Remember_LO 2.7, APA 1.1
The pineal gland secrets a hormone called insulin.
TOPIC: Distant Connections: The Endocrine Glands
ANS: F, Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (2)
APA=1.1

TB_02_217_Distant Connections: The Endocrine Glands_Remember_LO 2.7, APA 1.1
The thyroid gland secretes a hormone called thyroxin.
TOPIC: Distant Connections: The Endocrine Glands
ANS: T, Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (1)
APA=1.1

TB_02_218_Distant Connections: The Endocrine Glands_Remember_LO 2.7, APA 1.1
If the pancreas secretes too little insulin, the result is diabetes.
TOPIC: Distant Connections: The Endocrine Glands
ANS: T, Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (3)
APA=1.1

TB_02_219_Distant Connections: The Endocrine Glands_Remember_LO 2.7, APA 1.1
If the body secretes too much insulin, the result is hyperglycemia.
TOPIC: Distant Connections: The Endocrine Glands
ANS: F, Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (3)
APA=1.1

TB_02_220_Looking Inside the Living Brain_Remember_LO 2.9, 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=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (3)
APA=1.1

TB_02_221_From the Bottom Up: The Structures of the Brain_Remember_LO 2.10, 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=2.10 Identify the different structures of the hindbrain and the function of each., (2)
APA=1.1

TB_02_222_From the Bottom Up: The Structures of the Brain_Apply_LO 2.11, 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=2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation., (2)
APA=1.1

TB_02_223_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, 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=2.12 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_224_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, 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=2.12 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_225_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, 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=2.13 Name the parts of the cortex that are responsible for higher forms of thought, such as language., (1)
APA=1.1

TB_02_226_From the Bottom Up: The Structures of the Brain_Remember_LO 2.14, 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=2.14 Explain how some brain functions differ between the left and right hemispheres., (1)
APA=1.1

TB_02_227_From the Bottom Up: The Structures of the Brain_Understand_LO 2.14, 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=2.14 Explain how some brain functions differ between the left and right hemispheres., (2)
APA=1.1

SHORT ANSWER

TB_02_228_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_229_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_230_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_231_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_232_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_233_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 brain and spinal cord interact and respond to external experiences and LO=2.5 Differentiate the roles of the somatic and autonomic nervous systems., (3)
APA=1.1

TB_02_234_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_235_Distant Connections: 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: Distant Connections: The Endocrine Glands
Remember the Facts, LO=2.7 Recall the role of various endocrine glands., (3)
APA=1.1

TB_02_236_Looking Inside the Living Brain_Remember_LO 2.9, 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=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (3)
APA=1.1; 2.4

TB_02_237_From the Bottom Up: The Structures of the Brain_Understand_LO 2.12 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=2.12 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_238_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, 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=2.13 Name the parts of the cortex that are responsible for higher forms of thought, such as language., (3)
APA=1.1

TB_02_239_From the Bottom Up: The Structures of the Brain_Remember_LO 2.13, 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=2.13 Name the parts of the cortex that are responsible for higher forms of thought, such as language., (3)
APA=1.1

TB_02_240_From the Bottom Up: The Structures of the Brain_Remember_LO 2.14, 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=2.14 Explain how some brain functions differ between the left and right hemispheres., (2)
APA=1.2

TB_02_241_From the Bottom Up: The Structures of the Brain_Analyze_LO 2.14, 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=2.14 Explain how some brain functions differ between the left and right hemispheres., (2)
APA=1.1

ESSAY

TB_02_242_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_243_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 brain and spinal cord interact and respond to external experiences., (1)
APA=1.1

TB_02_244_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_245_Distant Connections: 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: Distant Connections: 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_246_Looking Inside the Living Brain_Apply_LO 2.8, 2.9, 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=2.8 Describe how lesioning studies and brain stimulation are used to study the brain and LO=2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (3)
APA=2.4

TB_02_247_From the Bottom Up: The Structures of the Brain_Remember_LO 2.12, 2.13, 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=2.12 Identify the parts of the cortex that process the different senses and those that control movement of the body and LO=2.13 Name the parts of the cortex that are 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. Robert 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 Robert'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. 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. 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. 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. medulla
b. pons
c. reticular formation
d. cerebellum

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 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. 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. hearing
b. touch
c. taste and smell
d. vision

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. right rear
b. left frontal
c. left rear
d. right frontal

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 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

Neurons and Nerves: Building the Network

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. When the electrical charge inside a neuron is negative in relation to the outside, the neuron is said to be in a state of:
a. equilibrium.
b. shock.
c. polarization.
d. depolarization.
Answer c % correct 81 a= 3 b= 2 c= 73 d= 12 *r* = .27

7. 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

8. Endorphins
a. are found where neurons meet skeletal muscles
b. are less powerful than enkaphalins
c. reduce pain messages in the brain
d. are radically different in function from neurotransmitters
Answer c % correct 86 a= 3 b= 3 c= 86 d= 8 *r* = .23

9. 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

10. 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

11. 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

12. 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

13. 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

14. 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

15. 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

16. 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

17. 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

18. 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

19. 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

20. 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

21. 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

22. 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

23. 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

24. 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

25. 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

26. 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

27. 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

28. 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

29. 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

30. 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

31. 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

32. 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

33. 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

34. 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 60 a= 25 b= 60 c= 6 d= 8 *r* = .40

35. 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

36. An emergency room physician must treat a patient who has recently eaten a can of tainted mushrooms. Suspecting botulism, the physician must treat the woman in order to:
a. prevent the breakdown of catecholamines in the patient's nervous system.
b. prevent the botulism toxin from blocking the release of acetylcholine.
c. prevent the toxin from breaking down the acetylcholine in the patient's nervous system.
d. prevent the botulism from blocking the release of catecholamines.
Answer b % correct 78 a= 3 b= 78 c= 8 d= 11 *r* = .23

37. 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

The Peripheral Nervous System

38. 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

39. 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

40. 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

41. 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

42. 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

43. 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

44. 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

45. 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

46. 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

47. 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

48. 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

49. The FIRST division of the nervous system consists of the:
a. central and peripheral nervous systems.
b. brain and spinal cord.
c. somatic and autonomic nervous systems.
d. sympathetic and parasympathetic nervous systems.
Answer a % correct 73 a= 73 b= 20 c= 4 d= 26 *r* = .41

50. 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

51. 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

52. 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

53. 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

54. 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

55. 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

56. 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

57. 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

58. 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

59. 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

60. 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

61. 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

62. 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

The Central Nervous System

63. 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

64. 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

65. 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

66. 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

67. 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

68. 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

69. 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

70. 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

71. 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

72. 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

73. The part of the brain most people think of when they talk about the brain is the _____.
a. cerebral cortex
b. pons
c. medulla
d. cerebellum
Answer a % correct 50 a= 50 b= 3 c= 13 d= 34 *r* = .33

74. The notion that human language production is controlled primarily by the left cerebral cortex was first proposed by _____.
a. Paul Broca
b. Sally Shaywitz
c. Karl Wernicke
d. Hermann Ebbinghaus
Answer a % correct 53 a= 53 b= 3 c=35 d= 7 *r* = .31

75. 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

76. 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

77. 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

78. "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

79. 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

80. 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

81. 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

82. 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

83. 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

84. 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

85. 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

86. 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

87. 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

88. 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

89. 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

90. 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

91. 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

92. 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

93. 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

94. 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

95. 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

96. 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

97. 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

98. 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

99. 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

100. 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

101. 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

102. 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

103. 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

104. 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

105. 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

106. 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

107. 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

108. 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

109. 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

110. 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 84 a= 3 b= 5 c= 84 d= 8 *r* = .40

111. 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

112. 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

113. The part of the brain responsible for emotional behavior and regulating the nervous system in times of stress is the _____.
a. medulla
b. cerebellum
c. thalamus
d. hypothalamus
Answer d % correct 60 a= 8 b= 4 c= 28 d= 60 *r* = .35

114. 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

115. 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

116. 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

117. 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

118. 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

119. 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

120. 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

121. 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

122. 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

123. 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 88 a= 6 b= 3 c= 88 d= 3 *r* = .38

124. 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

The Chemical Connection

125. 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

126. 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

127. 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

128. 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

129. 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

130. 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

131. 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

132. 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

133. 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

134. 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

135. 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

136. Estrogen is to _____ as testosterone is to _____.
a. gonads; testes
b. testes; ovaries
c. ovaries; testes
d. ovaries; gonads
Answer c % correct 89 a= 2 b= 1 c= 89 d= 8 *r* = .41

REVEL Assessments

End of Module Quizzes

Quiz: Neurons and Nerves: Building the Network

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

LO=Learning Objective

Quiz: 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's 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's 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's at rest is not currently firing a neural impulse or message. LO 2.2 Explain the action potential.
ANS: a

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.

c) reuptake inhibitor.

Consider This: Neurotransmitters originate inside neurons and must cross this gap between adjacent neurons to transmit messages.

d) glial cell.

Consider This: Neurotransmitters originate inside neurons and must cross this gap between adjacent neurons to transmit messages.

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.

c) glutamate

Consider This: When a person is hurt, these pain relieving chemicals are released when a neurotransmitter signaling pain reaches the brain.

d) serotonin

Consider This: When a person is hurt, these pain relieving chemicals are released when a neurotransmitter signaling pain reaches the brain.

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: 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 what scientists call

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 brain and spinal cord interact and respond to external experiences.

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 brain and spinal cord interact and respond to external experiences.

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 brain and spinal cord interact and respond to external experiences.

Topic: An Overview of the Nervous System
ANS: a, Apply What You Know, LO 2.4 Describe how the brain and spinal cord interact and respond to external experiences., (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 brain and spinal cord interact and respond to external experiences.

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 brain and spinal cord interact and respond to external experiences.

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 brain and spinal cord interact and respond to external experiences.

Topic: An Overview of the Nervous System
ANS: a, Remember the Facts, LO 2.4 Describe how the brain and spinal cord interact and respond to external experiences., (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 autonomic 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 autonomic 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 autonomic nervous systems., (2)

Quiz: Distant Connections: The Endocrine Glands

Multiple Choice Single Select

EOM Q2.3.1
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: Distant Connections: The Endocrine Glands
ANS: a, Apply What You Know, LO 2.7 Recall the role of various endocrine glands., (2)

EOM Q2.3.2
Andrew has always been thin. In fact, he often seems to be able to eat whatever he wants without gaining weight. The doctor told his parents that Andrew's _____ gland is the cause of his fast metabolism.

a) thyroid
b) pituitary

Consider This: This gland secretes a hormone that controls the burning of energy. LO 2.7 Recall the role of various endocrine glands.

c) adrenal

Consider This: This gland secretes a hormone that controls the burning of energy. LO 2.7 Recall the role of various endocrine glands.

d) pancreas

Consider This: This gland secretes a hormone that controls the burning of energy. LO 2.7 Recall the role of various endocrine glands.

Topic: Distant Connections: The Endocrine Glands
ANS: a, Apply What You Know, LO 2.7 Recall the role of various endocrine glands., (2)

EOM Q2.3.3
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: Distant Connections: The Endocrine Glands
ANS: a, Understand the Concepts, LO 2.7 Recall the role of various endocrine glands., (2)

EOM Q2.3.4
Which gland(s) have the greatest influence over other components of the endocrine system?

a) pituitary
b) gonads

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) pineal

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) pancreas

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: Distant Connections: The Endocrine Glands
ANS: a, Understand the Concepts, LO 2.6 Explain why the pituitary gland is known as the "master gland.", (2)

Quiz: Looking Inside the Living Brain

Multiple Choice Single Select

EOM 2.4.1
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 2.8 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 2.8 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 2.8 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 2.8 Describe how lesioning studies and brain stimulation are used to study the brain., (2)

EOM 2.4.2
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 2.8 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 2.8 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 2.8 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 2.8 Describe how lesioning studies and brain stimulation are used to study the brain., (2)

EOM 2.4.3
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 2.9 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 2.9 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 2.9 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 2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (2)

EOM 2.4.4
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 2.9 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 2.9 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 2.9 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 2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of the brain., (2)

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

Multiple Choice Single Select

EOM Q2.5.1
Which brain structure allows us to pay attention to certain stimuli while ignoring others?

a) reticular formation
b) medulla

Consider This: This is a network of neurons running through the middle of the medulla and the pons and slightly beyond. LO 2.10 Identify the different structures of the hindbrain and the function of each.

c) cerebellum

Consider This: This is a network of neurons running through the middle of the medulla and the pons and slightly beyond. LO 2.10 Identify the different structures of the hindbrain and the function of each.

d) pons

Consider This: This is a network of neurons running through the middle of the medulla and the pons and slightly beyond. LO 2.10 Identify the different structures of the hindbrain and the function of each.

Topic: From the Bottom Up: The Structures of the Brain
ANS: a, Remember the Facts, LO 2.10 Identify the different structures of the hindbrain and the function of each., (1)

EOM Q2.5.2

Which brain structure relays incoming sensory information?

a) thalamus

b) hypothalamus

Consider This: This structure might process that sensory information before sending it on to the part of the cortex that deals with that kind of sensation. LO 2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation.

c) reticular formation

Consider This: This structure might process that sensory information before sending it on to the part of the cortex that deals with that kind of sensation. LO 2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation.

d) pons

Consider This: This structure might process that sensory information before sending it on to the part of the cortex that deals with that kind of sensation. LO 2.11 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 2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation., (1)

EOM Q2.5.3

If you were to develop a rare condition in which you were not able to remember to be afraid of certain situations, animals, or events, which part of the brain would most likely be damaged?

a) amygdala

b) cingulate cortex

Consider This: This is involved in fear responses and memory of fear. LO 2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation.

c) hypothalamus

Consider This: This is involved in fear responses and memory of fear. LO 2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation.

d) thalamus

Consider This: This is involved in fear responses and memory of fear. LO 2.11 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 2.11 Identify the structures of the brain that are involved in emotion, learning, memory, and motivation., (2)

EOM Q2.5.4
What part of the brain can sometimes be referred to as the "rind" or outer covering?

a) cortex
b) thalamus

Consider This: This is very recognizable surface anatomy because it is full of wrinkles. LO 2.12 Identify the parts of the cortex that process the different senses and those that control movement of the body.

c) medulla

Consider This: This is very recognizable surface anatomy because it is full of wrinkles. LO 2.12 Identify the parts of the cortex that process the different senses and those that control movement of the body.

d) corpus callosum

Consider This: This is very recognizable surface anatomy because it is full of wrinkles. LO 2.12 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, Remember the Facts, LO 2.12 Identify the parts of the cortex that process the different senses and those that control movement of the body., (1)

EOM Q2.5.5
In which of the following lobes of the cortex would you find the primary visual cortex?

a) occipital
b) frontal

Consider This: This is located at the base of the cortex, toward the back of the brain. LO 2.12 Identify the parts of the cortex that process the different senses and those that control movement of the body.

c) temporal

Consider This: This is located at the base of the cortex, toward the back of the brain. LO 2.12 Identify the parts of the cortex that process the different senses and those that control movement of the body.

d) parietal

Consider This: This is located at the base of the cortex, toward the back of the brain. LO 2.12 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, Remember the Facts, LO 2.12 Identify the parts of the cortex that process the different senses and those that control movement of the body., (1)

EOM Q2.5.6
You have a dream in which you wake up to find that people around you are using words that make no sense. What's more, your friends don't seem to understand you when you speak. At one point in your dream, your mom tells you that you almost forgot your tree limb today. When you give her a puzzled look, she holds up your lunchbox and repeats, "You know, your tree limb." Your predicament in your dream is most like which of the following disorders?

a) Wernicke's aphasia

b) Broca's aphasia

Consider This: A person with this condition is able to speak fluently and pronounce words correctly, but the words would be the wrong ones entirely. LO 2.13 Name the parts of the cortex that are responsible for higher forms of thought, such as language.

c) apraxia

Consider This: A person with this condition is able to speak fluently and pronounce words correctly, but the words would be the wrong ones entirely. LO 2.13 Name the parts of the cortex that are responsible for higher forms of thought, such as language.

d) spatial neglect

Consider This: A person with this condition is able to speak fluently and pronounce words correctly, but the words would be the wrong ones entirely. LO 2.13 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 2.13 Name the parts of the cortex that are responsible for higher forms of thought, such as language., (2)

End of Chapter Quiz

Quiz: The Biological Perspective

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, as well as 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.
c) serotonin
Consider This: This was the first neurotransmitter ever identified; it is often found at the synapses between neurons and muscle cells.
d) endorphin
Consider This: This was the first neurotransmitter ever identified; it is often found at the synapses between neurons and muscle cells.

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 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 “rest and digest” system.
b) sympathetic
Consider This: This system is sometimes called the “rest and digest” system.
c) parasympathetic
d) somatic
Consider This: This system is sometimes called the “rest and digest” 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., (1)

EOC Q2.9
Robert 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 Robert’s physician focus on?
a) pineal
b) pituitary
Consider This: This gland secretes a hormone called melatonin, which helps track 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 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 day length. LO 2.7 Recall the role of various endocrine glands.

Topic: Distant Connections: The Endocrine Glands
ANS: a, Apply What You Know, 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: Distant Connections: The Endocrine Glands

ANS: a, Remember the Facts, LO 2.6 Explain why the pituitary gland is known as the "master gland."., (1)

EOC Q2.11
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 2.8 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 2.8 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 2.8 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 2.8 Describe how lesioning studies and brain stimulation are used to study the brain., (2)

EOC Q2.12
Which technique of studying the brain involves injecting the patient with radioactive glucose?

a) PET
b) EEG

Consider This: Active brain areas require energy. In this technique brain activity is examined by identifying which cells are using up the radioactive glucose.

c) MRI

Consider This: Active brain areas require energy. In this technique brain activity is examined by identifying which cells are using up the radioactive glucose.

d) CT

Consider This: Active brain areas require energy. In this technique brain activity is examined by identifying which cells are using up the radioactive glucose.

Topic: Looking Inside the Living Brain
ANS: a, Understand the Concepts, LO 2.9 Compare and contrast neuroimaging techniques for mapping the structure and function of 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 2.10 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 2.10 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 2.10 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 2.10 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 most upon?

a) cerebellum

b) medulla

Consider This: This part of the brain coordinates voluntary movements that have to happen in rapid succession. LO 2.10 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 2.10 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 2.10 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 2.10 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 2.11 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 2.11 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 2.11 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 2.11 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 2.11 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 2.11 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 2.11 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 2.11 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.

c) touch

Consider This: The primary cortical processing area for this sensory modality is found in the occipital lobe.

d) taste and smell

Consider This: The primary cortical processing area for this sensory modality is found in the occipital lobe.

Topic: From the Bottom Up: The Structures of the Brain
ANS: a, Apply What You Know, LO 2.12 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.

c) left rear

Consider This: This area coordinates various brain areas, allowing a person to speak smoothly and fluently.

d) right frontal

Consider This: This area coordinates various brain areas, allowing a person to speak smoothly and fluently.

Topic: From the Bottom Up: The Structures of the Brain
ANS: a, Apply What You Know, LO 2.12 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 2.13 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 2.13 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 2.13 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 2.13 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 2.14 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 2.14 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 2.14 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 2.14 Explain how some brain functions differ between the left and right hemispheres., (2)