

1. Messages from other neurons and sensory receptors are typically:
 - A) collected by the synaptic vesicles.
 - B) relayed by glial cells to the correct node of Ranvier.
 - C) received by the dendrites.
 - D) received by the axon terminals.

2. The resting potential is:
 - A) a brief time period after an action potential when the neuron is incapable of firing.
 - B) the term used to describe how the sympathetic nervous system reduces arousal and conserves energy.
 - C) a state in which a neuron has an electrical charge of about -70 millivolts.
 - D) a state in which a neuron has an electrical charge of $+70$ millivolts.

3. During the action potential:
 - A) the electrical charge of the neuron changes from positive to negative.
 - B) sodium ions rush into the interior of the axon.
 - C) sodium ions rush out of the interior of the axon.
 - D) potassium ions flow into the interior of the axon.

4. Reuptake occurs:
 - A) when the brain shifts functions from damaged areas to undamaged areas.
 - B) when sodium ion and potassium ion channels open.
 - C) at the small gaps in the axon called the nodes of Ranvier.
 - D) when neurotransmitter molecules are reabsorbed by the presynaptic neuron.

5. Reduced brain levels of the neurotransmitter called _____ are involved in the progressive memory loss that characterizes Alzheimer's disease.
 - A) GABA
 - B) serotonin
 - C) dopamine
 - D) acetylcholine

6. The terms *autonomic* and *somatic* refer to the two main subdivisions of the:
 - A) sympathetic nervous system.
 - B) central nervous system.
 - C) peripheral nervous system.
 - D) parasympathetic nervous system.

1. The three types of neurons are:
 - A) excitatory, inhibitory, and myelinated.
 - B) sensory, motor, and interneurons.
 - C) interneurons, glial cells, and motor cells.
 - D) glial cells, myelinated cells, and unmyelinated cells.

2. In general, neural messages are received by the _____ and transmitted by the _____.
 - A) cell body; dendrites
 - B) axons; nucleus
 - C) dendrites; axon
 - D) axon; dendrites

3. When neurotransmitters communicate an inhibitory message to the postsynaptic neuron:
 - A) reuptake is inhibited.
 - B) the presynaptic neuron is less likely to activate.
 - C) the action potential is canceled out.
 - D) the postsynaptic neuron is less likely to activate.

4. The venom of the black widow spider bite causes _____ to be released continuously by motor neurons, causing severe muscle spasms.
 - A) acetylcholine
 - B) dopamine
 - C) GABA
 - D) serotonin

5. _____ are to the peripheral nervous system as _____ are to the central nervous system.
 - A) Nerves; neurons
 - B) Interneurons; glial cells
 - C) Neurons; nerves
 - D) Electrical impulses; chemical messengers

6. Janeen and Marty were strolling down a wooded path in a city park when a man holding a knife suddenly jumped out of the shrubbery. Rather than fight, Janeen and Marty decided to flee and took off running in the opposite direction. The _____ nervous system triggers this quick reaction, known as the fight-or-flight response, by stimulating the _____ to produce _____.
 - A) somatic; adrenal medulla; dopamine and serotonin
 - B) parasympathetic; adrenal cortex; melatonin and androgen
 - C) sympathetic; adrenal medulla; epinephrine and norepinephrine
 - D) central; hypothalamus; GABA and dopamine

1. Dr. Dawson is a neuroscientist. He is most likely to study which of the following topics?
 - A) how conflict affects marital happiness
 - B) which psychological test would best predict job success
 - C) the age at which children understand abstract concepts
 - D) brain development during adolescence

2. The branch of science concerned with the study of the nervous system, especially in the brain, is called:
 - A) interdisciplinary science.
 - B) neuroscience.
 - C) developmental psychology.
 - D) clinical psychology.

3. The branch of psychology that studies the relationship between behavior and bodily processes and systems is called:
 - A) biological psychology.
 - B) clinical psychology.
 - C) cognitive physiology.
 - D) forensic psychology.

4. Neurons are:
 - A) found in primates and humans but not in other animals.
 - B) highly specialized cells that receive and transmit information from one area of the body to another.
 - C) found only in the spinal cord and bone marrow.
 - D) highly specialized cells that produce myelin.

5. There are roughly _____ neurons in the human brain.
 - A) 500,000
 - B) 500 million
 - C) 1 billion
 - D) 100 billion

6. Which of the following signal muscles to relax or contract?
 - A) sensory neurons
 - B) glial cells
 - C) motor neurons
 - D) interneurons

1. How do the fields of biological psychology and neuroscience contribute to basic psychological knowledge?
2. How do sensory neurons, motor neurons, and interneurons differ?
3. What are the three basic components of a neuron, and what function does each component perform?
4. What are glial cells, and what is their role in the nervous system?
5. Describe the functions of the microglia, astrocytes, oligodendrocytes, and Schwann cells.
6. What does it mean to say that a neuron is polarized?
7. What is the refractory period, and what takes place during that period?
8. Describe the sequence of events that occurs when one neuron communicates with another neuron.
9. Describe the sequence of events that occurs when a neuron “fires,” or activates.
10. What different types of messages can be communicated by neurotransmitters?
11. Pick two neurotransmitters and describe the roles they play in behavior.
12. What are endorphins, and what are their functions?
13. Identify and explain several ways in which drugs can affect brain activity by interfering with synaptic transmission.

1. Biological psychology is a specialized branch of psychology that studies the relationship between behavior and bodily processes and systems.
 - A) True
 - B) False

2. Neuroscience and biological psychology study only the brain and nervous system and do not investigate topics such as perception, memory, sleep, dreams, and psychological disorders.
 - A) True
 - B) False

3. A *neuroscientist* might examine how damage to the hippocampus affects the ability to form new memories.
 - A) True
 - B) False

4. The human brain contains approximately 100 billion neurons and about ten times as many glial cells.
 - A) True
 - B) False

5. Interneurons communicate information from one neuron to the next.
 - A) True
 - B) False

6. Sensory neurons communicate information to muscles to help the muscles and glands of the body.
 - A) True
 - B) False

7. Motor neurons convey information about the environment from specialized receptor cells in the sense organs to the brain.
 - A) True
 - B) False

8. The neuron's genetic material (DNA) is found in the nucleus of the neuron's cell body.
 - A) True
 - B) False

