

HONORS PSYCHOLOGY | REVIEW QUESTIONS

The purpose of these review questions is to help you assess your grasp of the facts and definitions covered in your textbook. Knowing facts and definitions is necessary (but not sufficient) for success on formal exams, which assess your ability to conceptualize and analyze the material covered in textbook and lecture. An answer key is provided at the end of these review questions so you can check your answers.

1. The elementary units of the nervous system are called:
 - A) neurons.
 - B) nerves.
 - C) glia.
 - D) nuclei.

2. The central nervous system consists of the _____ and the _____.
 - A) left cerebral hemisphere; right cerebral hemisphere
 - B) brain; spinal cord
 - C) sympathetic nervous system; parasympathetic nervous system
 - D) brain; peripheral nervous system

3. The peripheral nervous system is made up of extensions from the central nervous system known as:
 - A) nerves.
 - B) nuclei.
 - C) tracts.
 - D) dendrites.

4. A _____ is a bundle of _____.
 - A) spinal nerve; cranial nerves
 - B) cranial nerve; interneurons
 - C) nerve; axons of neurons
 - D) nerve; interneurons

5. Which of these is NOT one of the three main categories of neurons located in the central nervous system?
 - A) resting neurons
 - B) sensory neurons
 - C) motor neurons
 - D) interneurons

6. The function of sensory neurons is to:
 - A) organize and integrate information in the central nervous system.
 - B) carry information to the central nervous system.
 - C) transmit messages between motor neurons.
 - D) transmit messages from motor neurons to interneurons.

7. Neurons that carry messages to muscles and glands are called:
 - A) motor neurons.
 - B) interneurons.
 - C) sensory neurons.
 - D) both interneuron and sensory neurons.

8. Neurons that exist completely within the central nervous system are called:
 - A) motor neurons.
 - B) interneurons.
 - C) sensory neurons.
 - D) nerves.

9. The most numerous neurons in the human nervous system are:
 - A) motor neurons.
 - B) interneurons.
 - C) sensory neurons.
 - D) peripheral neurons.

10. Although the shapes of neurons vary widely, most neurons share the same basic parts. What three parts are common in a typical neuron?
 - A) axons, cell body, somatosensations
 - B) cell body, somatosensations, thalamus
 - C) dendrites, cell body, thalamus
 - D) cell body, dendrites, axons

11. Which part of a motor neuron is specialized to receive signals from other neurons?
 - A) axon
 - B) dendrites
 - C) synaptic vesicles
 - D) axon terminals

12. The thin, tubelike branches that increase the surface area of the neuron to better receive signals from other neurons are called:
- A) axons.
 - B) myelin sheaths.
 - C) synapses.
 - D) dendrites.
13. The tightly wrapped casing around the axon in some neurons is called a(n):
- A) dendrite.
 - B) myelin sheath.
 - C) ganglion.
 - D) axon terminal.
14. _____ are when neurons exert their influence on other neurons and muscle cells by firing off all-or-nothing impulses.
- A) Resting potentials
 - B) Action potentials
 - C) Neurotransmitters
 - D) Somatosensations
15. What does it mean to say that action potentials are “all-or-none”?
- A) The action potential will occur in all parts of the neuron simultaneously or will not occur anywhere in that neuron.
 - B) Either all the neurons in a particular region will have an action potential or none will.
 - C) Every action potential in a given neuron is of the same strength and maintains that strength down the length of the axon.
 - D) Either all negative ions outside the cell enter the neuron or none do.
16. Which statement is NOT true about action potentials?
- A) Each action potential retains its full strength all the way down the axon.
 - B) Each action potential produced by a given neuron is of the same strength as any other action potential produced by that neuron.
 - C) Action potentials are unique given that they are not “membrane events.
 - D) They are triggered at the junction between the cell body and the axon.
17. Which parts of the neuron releases neurotransmitters onto receiving cells?
- A) axon terminals
 - B) dendrites
 - C) cell nucleus
 - D) action potentials

18. Which of the following statements about the cell membrane of a neuron is TRUE?
- A) The membrane of an inactive neuron maintains an electrical charge across it, with the inside of the neuron typically about -70 millivolts relative to the charge outside.
 - B) The membrane of an inactive neuron maintains an electrical equilibrium, so there is no charge across it until an action potential occurs.
 - C) The neuron's membrane is completely permeable, so all the various chemicals dissolved in the intracellular and extracellular fluid pass freely through it.
 - D) The cell membranes of excitatory neurons produce action potentials, while the cell membranes of inhibitory neurons produce resting potentials.
19. The resting potential is:
- A) the charge across the membrane of an inactive neuron.
 - B) the electrical charge of the extracellular fluid surrounding inactive neurons.
 - C) the positive electrical charge that results when potassium ions diffuse down the length of the axon.
 - D) All of these answers are correct.
20. In the resting potential, the inside of the cell is:
- A) negative relative to the outside.
 - B) positive relative to the outside.
 - C) electrically neutral relative to the outside.
 - D) rapidly fluctuating between a positive and negative charge relative to the outside.
21. In which part of the neuron does the action potential take place?
- A) the dendrites
 - B) the axon
 - C) the cell nucleus
 - D) all three parts
22. The action potential involves ions passing through:
- A) the myelin sheath.
 - B) channels in the cell membrane.
 - C) the axon terminals.
 - D) synaptic vesicles.
23. What type of charged particle enters the neuron at the beginning of the action potential?
- A) potassium ions
 - B) sodium ions
 - C) protein molecules
 - D) chloride ions

24. The rapid movement of sodium (Na⁺) ions into a neuron results in momentary reversal of the electrical charge across the cell membrane, which constitutes the _____ phase of the action potential.
- A) depolarization
 - B) repolarization
 - C) hyperpolarization
 - D) resting potential
25. The fact that like charges repel one another helps to explain:
- A) the depolarization phase of the action potential.
 - B) the repolarization phase of the action potential.
 - C) both repolarization and depolarization.
 - D) neither repolarization or depolarization.
26. The action potential, as measured inside the neuron relative to outside it, consists of a transition from a:
- A) negative charge to a persisting positive charge.
 - B) positive charge to a negative charge and, finally, a return to a positive charge.
 - C) negative charge to a positive charge and, finally, a return to a negative charge.
 - D) positive charge to a persisting negative charge.
27. During the _____ phase of the action potential, _____ ions pass out of the neuron.
- A) depolarization; potassium
 - B) repolarization; potassium
 - C) depolarization; sodium
 - D) repolarization; sodium
28. Which of the following statements is true about action potentials?
- A) The charge increases in magnitude as it travels along the axon.
 - B) The charge decreases in magnitude and dies out before it reaches the end of the axon.
 - C) The charge of the action potential is maintained as it sweeps down the axon by sodium channels.
 - D) The charge of the action potential decreases only after the action potential has traveled past the synapse to the next neuron.
29. An action potential is conducted fastest in an axon that is:
- A) thinner and unmyelinated.
 - B) thinner and myelinated.
 - C) thicker and unmyelinated.
 - D) thicker and myelinated.

30. Why are myelinated neurons able to conduct action potentials at a faster rate than unmyelinated neurons?
- A) Myelinated neurons produce excitatory neurotransmitters, and unmyelinated neurons produce inhibitory neurotransmitters.
 - B) In myelinated neurons, the action potential moves quickly down the axon below the myelin sheath, and is thus insulated from potentially interfering influences.
 - C) The action potential essentially skips from node to node in a myelinated neuron, but must move in continuous fashion down the whole axon of an unmyelinated neuron.
 - D) Myelinated neurons contain larger channels for sodium ions to pour into.
31. An action potential is triggered in a neuron when a reduction in charge across the cell membrane reaches a critical value, which we call the cell's:
- A) polarization level.
 - B) threshold.
 - C) permeability value.
 - D) resting potential.
32. The junctions between each axon terminal and the cell body or dendrite of the receiving neuron are referred to as:
- A) synapses.
 - B) interneurons.
 - C) nodes.
 - D) axons.
33. Suppose an action potential has just begun to occur in the presynaptic neuron and that another will then be triggered in the postsynaptic neuron. Which of the following best describes (in order) the anatomical structures that play a part in this series of events?
- A) synapse → axon terminal → axon → cell body → dendrites
 - B) cell body → dendrites → axon terminal → axon → synapse
 - C) axon → axon terminal → synapse → dendrites → axon
 - D) dendrites → synapse → cell body → axon → axon terminal

34. Communication between neurons occurs when the action potential reaches the end of the presynaptic cell's axon, and:
- A) axon terminals of the postsynaptic neuron pick up neurotransmitters released into the synapse.
 - B) neurotransmitters released from axon terminals cross the synaptic cleft and affect the functioning of the postsynaptic neuron.
 - C) dendrites release synaptic vesicles, which open the sodium channels of the postsynaptic neuron.
 - D) the axon releases neurotransmitters that bind to and open potassium channels between the presynaptic and postsynaptic neurons.
35. What are the two types of classes that synapses can be categorized into?
- A) excitatory and inhibitory
 - B) fast and slow
 - C) complex and simple
 - D) none of these types
36. The axon terminal of one neuron is separated from another neuron by a synaptic:
- A) node.
 - B) vesicle.
 - C) cleft.
 - D) membrane.
37. Within the axon terminals are vesicles that hold:
- A) intracellular fluid.
 - B) charged particles.
 - C) myelin.
 - D) neurotransmitter molecules.
38. In successful fast synaptic transmission, after a neurotransmitter is released it:
- A) diffuses across the synaptic cleft and attaches to special receptor sites on the receiving cell's membrane.
 - B) continues traveling down the axon of the next neuron as an action potential.
 - C) never actually reaches the receiving neuron but acts as a stepping stone for the action potential to keep traveling down the next neuron.
 - D) travels into the bloodstream.

39. Neurotransmitters at excitatory fast synapses tend to _____ the rate of action potentials in the postsynaptic neuron, and those at inhibitory fast synapses tend to _____ the rate.
- A) decrease; maintain
 - B) decrease; increase
 - C) increase; decrease
 - D) increase; maintain
40. At an excitatory fast synapse, the neurotransmitter opens _____ channels in the postsynaptic cell membrane, which is designed to _____ the rate of action potentials triggered in the postsynaptic cell.
- A) chloride; decrease
 - B) chloride; increase
 - C) sodium; decrease
 - D) sodium; increase
41. At an inhibitory fast synapse, the neurotransmitter opens _____ channels in the postsynaptic cell membrane, which act to _____ the rate of action potentials triggered in the postsynaptic cell.
- A) chloride or potassium; decrease
 - B) chloride or potassium; increase
 - C) sodium; decrease
 - D) sodium; increase
42. _____ synapses tend to decrease the rate of action potentials in a postsynaptic neuron.
- A) Intracellular
 - B) Excitatory
 - C) Fast
 - D) Inhibitory
43. Suppose a single postsynaptic neuron receives input from many fast synapses. What will determine its response to this input?
- A) It will either produce an action potential or not, depending entirely upon whether it is an excitatory or inhibitory neuron.
 - B) It will integrate the incoming excitatory and inhibitory signals, with its rate of action potentials depending on the relative amount of each type of signal.
 - C) It will produce an action potential if the number of incoming excitatory signals exceeds a certain threshold number and will not produce one otherwise.
 - D) It will chemically “track” the incoming signals one by one, such that it will produce an action potential each time an excitatory signal arrives at a synapse and will skip an action potential each time an inhibitory signal arrives at a synapse.

44. Transmission at _____ synapses can produce sustained effects on a person's behavior by altering the functioning of the postsynaptic neuron for periods ranging from hundreds of milliseconds to hours or even longer.
- A) slow
 - B) fast
 - C) inhibitory
 - D) excitatory
45. Which of the following statements regarding slow synapses is TRUE?
- A) Slow transmitters are responsible for changes in psychological state, such as emotion and motivation.
 - B) The nervous system contains fewer than a dozen types of slow-acting transmitter substances, while there are more than 50 types of fast-acting neurotransmitters.
 - C) The term slow is a relative term and in slow synapses, it refers to results that last up to an hour or two, but no longer.
 - D) Though there are two types of effects that fast-acting synapses can have (excitation or inhibition), there is only one type of effect (inhibition) produced at slow synapses.
46. Endorphins are a class of molecule that can attenuate the experience of pain through long-term effects on pain pathways in the spinal cord and brain. Endorphins are _____ and act at _____ synapses.
- A) biogenic amines; inhibitory
 - B) biogenic amines; slow
 - C) neuropeptides; inhibitory
 - D) neuropeptides; slow
47. Which type of structure in the central nervous system is analogous to a nerve in the peripheral nervous system?
- A) tract
 - B) nucleus
 - C) nerve
 - D) synapse
48. A _____, referred to as gray matter, is a cluster of cell bodies in the central nervous system, and a _____, referred to as white matter, is a bundle of axons that course together from one _____ to another.
- A) nerve; neuron; nerve
 - B) nucleus; tract; nucleus
 - C) neuron; nerve; neuron
 - D) tract; nucleus; tract

49. Psychologists and other neuroscientists have developed three general methods of identifying the functions of specific brain areas. Which of these is NOT one of those categories?
- A) observing behavioral effects or artificially stimulating specific parts of the brain
 - B) observing behavioral deficits that occur when a part of the brain is destroyed or is temporarily inactivated
 - C) recording what part of the brain a person indicates that she feels is activated during a specific behavioral task
 - D) recording changes in neural activity that occur in specific parts of the brain when a person or animal is engaged in a particular mental or behavioral task
50. Which of these is NOT a procedure used to observe brain activity in humans?
- A) deliberately placed brain lesions (DBL)
 - B) transcranial magnetic stimulation (TMS)
 - C) electroencephalogram (EEG)
 - D) functional magnetic resonance imaging (fMRI)
51. How has the fMRI technique allowed researchers to see the relative amount of activity in various parts of a person's brain as the person engages in a cognitive task?
- A) Oxygenated hemoglobin produces certain frequencies of radio waves when subjected to a strong magnetic field.
 - B) A radioactive form of glucose or water is injected and the radioactive molecules emit particles that degrade and give off gamma rays.
 - C) Electrodes placed on the scalp are used to record different levels of electrical activity in the brain.
 - D) X rays of the head are taken and assembled into computer images, providing a three-dimensional image of the brain that can be used to identify areas of high neural activity.
52. The division of the nervous system that carries neural commands directly to the muscles that produce observable body movements is the:
- A) central motor system.
 - B) skeletal motor system.
 - C) autonomic nervous system.
 - D) parasympathetic system.

53. Which division of the nervous system carries neural commands directly to the glands and internal muscular structures such as the heart and intestines?
- A) the skeletal motor system
 - B) the autonomic nervous system
 - C) the central nervous system
 - D) none of these divisions
54. In contrast to the skeletal motor system, the autonomic nervous system typically _____ activity in the muscles it acts upon.
- A) initiates
 - B) modulates
 - C) stabilizes
 - D) terminates
55. The _____ division of the peripheral nervous system is made up of neurons that act on muscles attached to bones that produce body movement.
- A) autonomic
 - B) sympathetic
 - C) skeletal
 - D) parasympathetic
56. Which of these is NOT an effect of the sympathetic division of the autonomic system?
- A) the release of energy molecules to permit high energy expenditure
 - B) increased blood flow to the skeletal muscles
 - C) inhibition of the digestive process
 - D) steady and normal heart rate
57. Which of these is NOT an effect of the parasympathetic division of the autonomic system?
- A) a steady and normal heart rate
 - B) increased blood flow to the skeletal muscles
 - C) normally functioning digestion
 - D) regenerative and growth-promoting processes are occurring
58. Under conditions of stress, which of the following prepares the body for possible “fight or flight”?
- A) skeletal motor system
 - B) spinal reflex system
 - C) sympathetic division of the autonomic system
 - D) parasympathetic division of the autonomic system

59. Which of the following statements in connection with the autonomic nervous system is FALSE?
- A) A division of the autonomic nervous system promotes bodily arousal to prepare the body for “fight or flight.”
 - B) The autonomic system modifies rather than initiates activity in the muscles it acts upon.
 - C) Most visceral muscles and glands receive two sets of neurons, which produce opposite effects.
 - D) The heart will not beat and the muscle walls of the intestines and arteries will stop contracting if all the nerves to these organs are destroyed.
60. Which of the following is most explicitly related to regenerative, growth-promoting, and energy-conserving functions?
- A) the skeletal motor system
 - B) the central nervous system
 - C) the sympathetic division of the autonomic system
 - D) the parasympathetic division of the autonomic system
61. Ascending tracts in the spinal cord carry:
- A) sensory information but not motor information.
 - B) motor information but not sensory information.
 - C) sensory and motor information only on the left side of the body.
 - D) sensory and motor information only on the right side of the body.
62. If the spinal cord is severed close to the brain rather than close to the bottom of the spinal column:
- A) fewer body parts will lose movement and sensation.
 - B) the body parts affected will show less severe deficits in movement and sensation.
 - C) a greater number of body parts will lose movement and sensation.
 - D) paralysis will not be accompanied by sensory loss.
63. How will a spinal cat respond if its paw is pricked with a pin?
- A) Its face and head will show signs of pain, but it will not withdraw its paw.
 - B) It will reflexively withdraw its paw, but its face and head will not show signs of pain.
 - C) It will reflexively withdraw its paw, and its face and head will show signs of pain.
 - D) It will not exhibit any interpretable behavior.

64. Which of the following statements about the spinal cord is FALSE?
- A) It contains pattern generators that produce muscle movements required for walking, running, and swimming.
 - B) Withdrawing your hand upon touching a sharp rock is a basic reflex organized by the spinal cord.
 - C) If surgically separated from the brain, the spinal cord would still enable you to have an experience of pain when you cut your finger.
 - D) The spinal cord contains both ascending and descending tracts.
65. Which of the following is true of the spinal cord and the brainstem?
- A) The spinal cord is the site of entry of motor tracts, and the brainstem is the site of entry of sensory tracts.
 - B) Both contribute to organizing certain reflexes.
 - C) Both contain spinal and cranial nerves.
 - D) All of the statements are true.
66. Which of the following is NOT a part of the brainstem?
- A) medulla
 - B) pons
 - C) midbrain
 - D) cerebellum
67. Which of the following statements about brainstem structures is FALSE?
- A) The brainstem contains neural systems that organize basic movement patterns.
 - B) The brainstem contains the neural systems that permit one to make a decision to move or stop moving.
 - C) The neurons that act on pattern generators in the spinal cord to control the pace of walking are in the midbrain.
 - D) The medulla and pons organize postural reflexes.
68. Which of the following would NOT be classified as a subcortical structure of the brain?
- A) brainstem
 - B) cerebral cortex
 - C) amygdala
 - D) medulla

69. Which part of the brain acts as a relay station that connects various parts of the brain with one another?
- A) brainstem
 - B) cerebellum
 - C) basal ganglia
 - D) thalamus
70. The medulla and pons are involved in producing _____, which are more complex and sustained than _____.
- A) spinal and vital reflexes; postural reflexes
 - B) spinal reflexes; postural and vital reflexes
 - C) postural and vital reflexes; spinal reflexes
 - D) decisions to move in a deliberate fashion; spinal reflexes
71. Which of the following brain structures is involved in postural reflexes?
- A) hippocampus
 - B) pons
 - C) somatosensory cortex
 - D) hypothalamus
72. The _____ contains neural centers that help govern most of an animal's species typical movement patterns, such as eating and drinking.
- A) myelin sheath
 - B) midbrain
 - C) cell membrane
 - D) cerebellum
73. The structure that receives input from most of the sensory tracts ascending through the brainstem is the:
- A) hypothalamus.
 - B) thalamus.
 - C) amygdala.
 - D) cerebellum.
74. Which of the following structures, located in the middle of the brain, is often described as being the relay station connecting various parts of the brain?
- A) hypothalamus
 - B) thalamus
 - C) cerebellum
 - D) limbic system

75. The thalamus is primarily responsible for which of the following functions?
- A) storing new memories
 - B) regulating attention, problem-solving, and other higher-order cognitive abilities
 - C) transmitting information from the sensory systems to the appropriate parts of the cortex
 - D) regulating the internal environment of the body
76. Which parts of the brain are crucial for the production of learned, skilled, and well-coordinated movements?
- A) medulla and pons
 - B) midbrain and brainstem
 - C) cerebellum and basal ganglia
 - D) hippocampus and amygdala
77. The cerebellum is most important for what aspect of movement?
- A) slow, deliberate movement that requires maximal sensory feedback
 - B) the rhythmic sequences of muscle movements involved in walking
 - C) intentional plans that govern movement at the highest level
 - D) movements so rapid they cannot be modified by sensory feedback once they are started
78. The basal ganglia are most important for what aspect of movement?
- A) slow, deliberate movement like that involved in reaching for an object
 - B) delicate movements of the eyes and lips
 - C) intentional plans that govern movement at the highest level
 - D) rapid-fire movements of the limbs
79. Which of the following pairs are functionally most similar and, in fact, play complementary roles in controlling movement?
- A) limbic system and cerebellum
 - B) basal ganglia and hypothalamus
 - C) cerebellum and basal ganglia
 - D) basal ganglia and limbic system
80. The basal ganglia appear to use sensory information primarily in a(n) _____ manner and the cerebellum uses sensory information primarily in a(n) _____ manner.
- A) modulation; activation
 - B) feed-forward; feedback
 - C) activation; modulation
 - D) feedback; feed-forward

81. The structure named for the border it forms between evolutionarily older parts of the brain and newer parts is the:
- A) cerebellum, which regulates rapid movements.
 - B) cerebellum, which regulates slow movements.
 - C) limbic system, which regulates perception.
 - D) limbic system, which regulates basic drives and emotions.
82. Within the limbic system, two specific structures are the:
- A) amygdala and cerebellum.
 - B) hippocampus and thalamus.
 - C) thalamus and hypothalamus.
 - D) amygdala and hippocampus.
83. The structure in the limbic system that plays an important role in memory formation is the:
- A) hypothalamus.
 - B) hippocampus.
 - C) amygdala.
 - D) midbrain.
84. The brain structure that regulates the body's internal environment, in part through influences on the autonomic nervous system and hormones, is the:
- A) hippocampus.
 - B) amygdala.
 - C) medulla.
 - D) hypothalamus.
85. In which of the following ways does the hypothalamus help to regulate the body's internal environment?
- A) influencing the activity of the autonomic nervous system
 - B) controlling the release of certain hormones
 - C) influencing drives such as hunger and thirst
 - D) in all of these ways
86. The limbic system, which consists of the _____ and the _____, is(are) crucially involved in regulating basic drives, motivation, and emotion.
- A) amygdala; hippocampus
 - B) cerebellum; basal ganglia
 - C) medulla; pons
 - D) midbrain; brainstem

87. In humans, the brain structure that takes up the greatest percentage of total volume is the:
- A) brainstem.
 - B) cerebral cortex.
 - C) limbic system.
 - D) cerebellum.
88. The terms occipital, parietal, temporal, and frontal
- A) subcortical structures.
 - B) functional areas of the cerebral cortex.
 - C) lobes of the cerebral cortex.
 - D) processes controlled by the cerebral cortex.
89. The cerebral cortex is divided into left and right hemispheres, each with four visible lobes. Which of the following would NOT be considered one of the four lobes?
- A) the parietal lobe
 - B) the sensory lobe
 - C) the temporal lobe
 - D) the occipital lobe
90. Which of these is *not* one of the lobes of the cerebral cortex?
- A) occipital lobe
 - B) central lobe
 - C) temporal lobe
 - D) parietal lobe
91. In the somatosensory cortex, the amount of cortical space corresponding to a given part of the body is related to the:
- A) size of the body part.
 - B) strength of the body part.
 - C) evolution of the body part.
 - D) sensitivity of the body part.
92. In the primary motor cortex, the amount of cortical space devoted to a given body part depends on the:
- A) size of the body part.
 - B) strength of the body part.
 - C) fineness of motor control in the body part.
 - D) evolutionary emergence of the body part.

93. The primary motor cortex is arranged such that neurons that are near one another send signals to adjacent areas of the muscle tissue. This arrangement illustrates the:
- A) principle of topographic organization.
 - B) hierarchical organization of motor control.
 - C) asymmetry of higher function.
 - D) split-brain syndrome.
94. Late in the chain of command preceding an action, the _____ serves to refine the signals going to small muscles such as those of the fingers.
- A) corpus callosum
 - B) cerebellum
 - C) primary motor cortex
 - D) basal ganglia
95. Areas of the frontal lobes of the cerebral cortex, called premotor areas, are critical to:
- A) visual processing.
 - B) auditory processing.
 - C) the regulation of basic drives, such as hunger.
 - D) the planning of movements.
96. Researchers tested vegetative patients' neural activity with fMRI machines, asking them to imagine specific movements, such as swinging a tennis racket. Which area of the brain did the researchers see active if the patients were able to imagine these movements?
- A) prefrontal cortex
 - B) occipital lobe
 - C) parietal lobe
 - D) somatosensory cortex
97. The two hemispheres of the cerebral cortex are functionally symmetrical in all of the following areas *except*:
- A) the primary motor areas.
 - B) the primary sensory areas.
 - C) the association areas.
 - D) none of these areas because the two hemispheres are completely functionally symmetrical.

98. Studies of people with localized brain damage indicate that most people have their:
- A) language centers in the right hemisphere.
 - B) higher-level intellectual centers in the left hemisphere.
 - C) language centers in the left hemisphere and their visual-spatial centers in the right hemisphere.
 - D) speech and visual-spatial centers spread across both hemispheres.
99. Which structure in the brain, comprised of a massive bundle of axons, connects the left and right hemispheres together?
- A) cerebellum
 - B) hippocampus
 - C) occipital lobe
 - D) corpus callosum
100. People whose corpus callosum had been severed to treat epilepsy:
- A) no longer had direct neural communication between the left and right cerebral hemispheres.
 - B) could no longer carry on a conversation or engage in tasks requiring physical coordination.
 - C) suffered a considerable loss in measured IQ.
 - D) experienced all of these losses to some degree.
101. In split-brain studies, when a picture of a common object was flashed to the _____, the patient typically would be unable to _____, but would be able to _____.
- A) left hemisphere; identify it verbally; identify it by touch with the left hand
 - B) left hemisphere; describe it; name it
 - C) right hemisphere; identify it verbally; identify it by touch with the left hand
 - D) right hemisphere; identify it by touch; name it
102. Research has shown that when so-called “split-brain patients” have a picture of an object flashed in their _____ visual field, they are unable to _____ what they have been shown.
- A) right; verbally describe
 - B) left; verbally describe
 - C) right; see
 - D) left; see

103. In humans, the _____ hemisphere of the brain is specialized for language and the _____ hemisphere of the brain is specialized for nonverbal, visiospatial analysis of information.
- A) mid; right
 - B) right; left
 - C) left; right
 - D) mid; left
104. An individual with specific damage to Broca's area is likely to:
- A) produce labored and telegraphic speech.
 - B) have difficulty comprehending grammatically complex sentences.
 - C) pack utterances with pronouns and nonsense words and exclude appropriate content words.
 - D) produce labored and telegraphic speech and have difficulty comprehending grammatically complex sentences.
105. People who suffer from Broca's aphasia have speech that retains its _____ but loses its _____.
- A) grammatical structure; meaning
 - B) meaning; grammatical structure
 - C) grammatical structure; articulation
 - D) meaning; articulation
106. Speech that is superficially fluent, filled with articles, prepositions, and nonsense words, but deficient in content words is characteristic of:
- A) nonfluent aphasia.
 - B) Wernicke's aphasia.
 - C) Broca's aphasia.
 - D) nonfluent aphasia and Broca's aphasia.
107. People with _____ aphasia, also known as fluent aphasia, have difficulty understanding language and produce sentences full of nonsense words.
- A) Wernicke's
 - B) Hebb's
 - C) Broca's
 - D) Gazzaniga's

108. During the 1960s, experiments were conducted in which rats were housed in either enriched or deprived environments. Results showed that:
- A) the brains of the enriched group had thicker cerebral cortexes, larger cortical neurons, and thicker, more developed synapses than did those of the deprived group.
 - B) the rats in the deprived group were far more sociable than those in the enriched group because they had fewer objects to explore, thereby putting more emphasis on socializing rather than exploring.
 - C) after weeks in the two environments, the brains of the groups showed few differences.
 - D) both groups developed significantly larger synapses and thicker cerebral cortexes.
109. After birth, the human brain:
- A) generates new neurons, especially in areas key to learning and memory.
 - B) can generate new neurons for only the first 18–21 months of life.
 - C) can generate new neurons only in the brainstem.
 - D) generates new glial cells but is unable to produce new neurons.
110. Which of the following is an actual research finding that showed that practice on a sensory discrimination task can alter neural connections so that more neurons become devoted to that task?
- A) brain imaging studies of blind people in response to stimulation of the index finger with which they read Braille
 - B) mapping of the somatosensory cortex of monkeys trained to discriminate between different rates of vibration on certain areas of the skin
 - C) brain imaging studies of stringed-instrument players in response to stimulation of their left hands
 - D) All the answers are correct.
111. Evidence from studies of seed-hiding birds and cab-driving humans indicates that spatial learning can result in growth in the:
- A) hypothalamus.
 - B) cerebellum.
 - C) amygdala.
 - D) hippocampus.

112. Suppose that neurons A and B both synapse on neuron C. The synapse between neurons A and C is too weak for A to cause C to fire, but the synapse between B and C is strong enough. Long-term potentiation in this situation would involve:
- A) the weak neuron A dying out in favor of the strong neuron B.
 - B) a lowering of the threshold in neuron C.
 - C) the growth of new synapses permitting B to stimulate A.
 - D) strengthening of the synapse between A and C.
113. Research on genetically altered Doogie mice showed that long-term potentiation (LTP):
- A) is related to only a narrow range of learning tasks, all based on classical conditioning.
 - B) lasts only for a few minutes, not the hours predicted on the basis of theory.
 - C) leads to significantly improved memory.
 - D) comes only from strengthening old synapses, not from creating new ones.
114. The chemical messengers secreted into the blood are called:
- A) hormones.
 - B) neurotransmitters.
 - C) releasing factors.
 - D) extracellular fluids.
115. _____ are released by endocrine glands into the bloodstream, are slow-moving, and most often travel great distances in the body to take action.
- A) Neurotransmitters
 - B) Neurohormones
 - C) Hormones
 - D) Vesicles
116. Which of the following statements regarding hormones is FALSE?
- A) They are secreted into the blood by endocrine glands and other organs.
 - B) Hormones can have either long-term or short-term effects.
 - C) Dozens of different hormones have been identified.
 - D) The hormonal system functions independently of neural control.
117. Which of the following is the most accurate way to categorize norepinephrine?
- A) Norepinephrine is strictly categorized as a hormone.
 - B) Norepinephrine is neither a hormone nor a neurotransmitter.
 - C) Norepinephrine is strictly categorized as a neurotransmitter.
 - D) Norepinephrine functions as a neurotransmitter when released by neurons and as a hormone when released into the bloodstream by the adrenal gland.

118. Which of the following statements regarding hormones and neurotransmitters is FALSE?
- A) Hormones and neurotransmitters probably evolved from the same primitive system of chemical messengers.
 - B) Hormones and neurotransmitters are chemically similar and, in some cases, are even identical.
 - C) Hormones and neurotransmitters often travel throughout the circulatory system before binding to their target cells.
 - D) Hormones are released by endocrine glands and other organs, and neurotransmitters are released by neurons.
119. Neurohormones are:
- A) neurons that directly stimulate endocrine glands to produce hormones.
 - B) hormones that directly stimulate neurological activity.
 - C) neurotransmitters secreted from neurons directly onto receptors in endocrine glands to stimulate hormone production.
 - D) hormones secreted from axon terminals into blood vessels rather than onto other neurons.
120. Hormones influence behavior in all of the following ways EXCEPT;
- A) by acting in the brain in ways that influence drives and moods.
 - B) by affecting the growth of the peripheral bodily structures, including muscles and bones.
 - C) by affecting metabolic processes throughout the body, thereby influencing the amount of energy that is available for action.
 - D) by organizing reflexes to help us maintain balance while moving or standing.
121. The structure of the brain that has the most direct control over the activity of the pituitary gland is the:
- A) amygdala.
 - B) cortex.
 - C) hypothalamus.
 - D) thalamus.

122. Which of the following statements concerning the pituitary gland is FALSE?
- A) The posterior lobe of the pituitary gland is actually part of the brain and consists mostly of modified neurons that secrete neurohormones.
 - B) The anterior lobe of the pituitary gland is subject to the influence of the hypothalamus.
 - C) The pituitary gland plays a role in all biological responses except those involved in response to emergency situations.
 - D) The anterior pituitary secretes specific hormones in response to specific “releasing factors.”
123. If a drug is going to act in the brain, it must first pass the tight capillary walls and the surrounding glial cells that form the _____ to help protect the brain from poisons.
- A) corpus callosum wall
 - B) blood-brain barrier
 - C) parietal fence
 - D) midbrain obstruction
124. In order for a drug to act on any portion of the brain, it first must pass through the _____ which is generally easier if the drug is _____.
- A) sodium-potassium pump; water soluble
 - B) blood-brain barrier; water soluble
 - C) sodium-potassium pump; fat-soluble
 - D) blood-brain barrier; fat-soluble
125. Drugs that alter a person's mood or behavioral capacities can exert their influences by:
- A) facilitating or inhibiting release of the neurotransmitter from the presynaptic cell.
 - B) prolonging or shortening the length of time the neurotransmitter remains in the cleft and produces its effects.
 - C) acting directly on postsynaptic binding sites to mimic or block the effect of the neurotransmitter.
 - D) All of the answers are correct.
126. Drugs can alter synaptic transmission through all of the following mechanisms, EXCEPT:
- A) causing the presynaptic neuron to release less neurotransmitter.
 - B) acting on postsynaptic receptors to block the neurotransmitter.
 - C) causing the presynaptic neuron to release a different neurotransmitter than it normally does.
 - D) shortening the time that the neurotransmitter remains in the synaptic cleft.

127. Which of the following is NOT a way drugs affect activity at a synapse?
- A) triggering action potentials in the postsynaptic neuron by fitting into neurotransmitter receptor sites
 - B) stopping an action potential that has already started in the postsynaptic neuron from reaching the axon terminals
 - C) preventing neurotransmitters from binding to receptor sites on the postsynaptic neuron by blocking receptor sites
 - D) prolonging the time that neurotransmitters are available in the synaptic cleft

Answer Key - Neuro Review

1. A
2. B
3. A
4. C
5. A
6. B
7. A
8. B
9. B
10. D
11. B
12. D
13. B
14. B
15. C
16. C
17. A
18. A
19. A
20. A
21. B
22. B
23. B
24. A
25. C
26. C
27. B
28. C
29. D
30. C
31. B
32. A
33. C
34. B
35. B
36. C
37. D
38. A
39. C
40. D
41. A
42. B
43. B
44. A
45. A
46. D
47. A
48. B
49. C
50. A
51. A
52. B

53. B
54. B
55. C
56. D
57. B
58. C
59. D
60. D
61. A
62. C
63. B
64. C
65. B
66. D
67. B
68. B
69. D
70. C
71. B
72. B
73. B
74. B
75. C
76. A
77. D
78. A
79. C
80. D
81. D
82. D
83. B
84. D
85. D
86. A
87. B
88. C
89. B
90. B
91. D
92. C
93. A
94. C
95. D
96. A
97. C
98. C
99. D
100. A
101. C
102. B
103. C
104. D
105. A
106. B

- 107. A
- 108. A
- 109. A
- 110. D
- 111. D
- 112. D
- 113. C
- 114. A
- 115. C
- 116. D
- 117. D
- 118. C
- 119. D
- 120. D
- 121. C
- 122. C
- 123. B
- 124. D
- 125. D
- 126. C
- 127. B