

## Unit 3 Practice Questions /45

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Block: \_\_\_\_\_

1. The function of dendrites is to
  - A) receive incoming signals from other neurons.
  - B) release neurotransmitters into the spatial junctions between neurons.
  - C) coordinate the activation of the parasympathetic and sympathetic nervous systems.
  - D) control pain through the release of opiate-like chemicals into the brain.
  - E) transmit signals to other neurons.
  
2. The slowdown of neural communication in multiple sclerosis involves a degeneration of the
  - A) thresholds.
  - B) dendrites.
  - C) endocrine gland.
  - D) myelin sheath.
  - E) pituitary gland.
  
3. Resting potential is to action potential as \_\_\_\_\_ is to \_\_\_\_\_.
  - A) adrenal gland; pituitary gland
  - B) sensory neuron; motor neuron
  - C) temporal lobe; occipital lobe
  - D) polarization; depolarization
  - E) dendrite; axon
  
4. The depolarization of a neural membrane can create a(n)
  - A) action potential.
  - B) myelin sheath.
  - C) lesion.
  - D) neural network.
  - E) interneuron.
  
5. Within a single neuron the action potential
  - A) is generated in the dendrites.
  - B) will be slower if myelin is present.
  - C) depends on the movement of charged calcium atoms.
  - D) travels in one direction toward the axon terminals.
  - E) crosses the synapse to the adjacent neurons.

6. The body's speedy, electrochemical information system is called the
- A) circulatory system.
  - B) threshold.
  - C) action potential.
  - D) nervous system.
  - E) endocrine system.
7. For you to be able to run, \_\_\_\_\_ must relay messages from your central nervous system to your leg muscles.
- A) interneurons
  - B) agonists
  - C) motor neurons
  - D) sensory neurons
  - E) the autonomic nervous system
8. When Mr. Valdez thought his 1-year-old daughter had fallen down the stairs, his heartbeat accelerated, his blood pressure rose, and he began to perspire heavily. Mr. Valdez's state of arousal was activated by his \_\_\_\_\_ nervous system.
- A) parasympathetic
  - B) sympathetic
  - C) somatic
  - D) sensorimotor
  - E) central
9. The strengthening of synaptic connections facilitates the formation of
- A) interneurons.
  - B) endorphins.
  - C) neural networks.
  - D) glial cells.
  - E) lesions.
10. The chemical messengers of the endocrine system are called
- A) neurotransmitters.
  - B) interneurons.
  - C) hormones.
  - D) agonists.
  - E) antagonists.

11. The ovaries in females and the testes in males are part of the
- A) peripheral system.
  - B) endocrine system.
  - C) sympathetic nervous system.
  - D) somatic system.
  - E) central nervous system.
12. Epinephrine and norepinephrine are released by the
- A) thyroid gland.
  - B) pituitary gland.
  - C) parathyroids.
  - D) adrenal glands.
  - E) pancreas.
13. Mandy came home late. As she reached to turn on the kitchen light, her hand brushed against something unexpected. Her adrenal glands, as a part of the “fight-or-flight” response, released epinephrine and norepinephrine, which increased her heart rate and blood pressure. Even after she realized it was just the curtain, her excited feelings lingered. This example illustrates
- A) how chemicals can amplify or block a neurotransmitter's activity.
  - B) that a resting axon has gates that block positive sodium ions.
  - C) how the myelin sheath insulates and increases the speed of neural messages.
  - D) the all-or-none response in neural firing.
  - E) that endocrine messages tend to outlast the effects of neural messages.
14. A brain lesion refers to \_\_\_\_\_ of brain tissue.
- A) electrical stimulation
  - B) X-ray photography
  - C) radioactive bombardment
  - D) destruction
  - E) development
15. In creating more effective treatments for pain, researchers would use which of the following techniques for identifying regions of the brain that handle pain?
- A) magnetic resonance imaging (MRI)
  - B) computed tomography (CT )
  - C) electroencephalogram (EEG)
  - D) functional MRI (fMRI)
  - E) lesion

16. What is the main difference between an MRI scan and an fMRI scan?
- A) MRI scans are able to show internal structures of the brain, fMRI scans can also show external structures.
  - B) MRI scans use X-rays, fMRI scans use gamma rays.
  - C) MRI scans measure glucose levels in the brain, fMRI scans measure oxygen levels.
  - D) MRI scans show structural details of the brain, fMRI scans show structure and activity levels.
  - E) MRI scans measure brain wave activity, fMRI scans use a series of X-ray images to show structural details.
17. Your life would be most immediately threatened if you suffered destruction of the
- A) amygdala.
  - B) hippocampus.
  - C) angular gyrus.
  - D) corpus callosum.
  - E) medulla.
18. The medulla is to the control of \_\_\_\_\_ as the cerebellum is to the control of \_\_\_\_\_.
- A) eating; sleeping
  - B) breathing; walking
  - C) emotion; motivation
  - D) memory; attention
  - E) hearing; seeing
19. The reticular formation is located in the
- A) brainstem.
  - B) limbic system.
  - C) sensory cortex.
  - D) motor cortex.
  - E) cerebellum.
20. The “little brain” attached to the rear of the brainstem is called the
- A) limbic system.
  - B) corpus callosum.
  - C) cerebellum.
  - D) reticular formation.
  - E) thalamus.

21. When the cat's amygdala is electrically stimulated the cat prepares to attack by hissing and arching its back. Which division of the autonomic nervous system is activated by such stimulation?
- A) somatic
  - B) parasympathetic
  - C) central
  - D) sympathetic
  - E) sensorimotor
22. Olds and Milner located reward centers in the brain structure known as the
- A) sensory cortex.
  - B) hypothalamus.
  - C) cerebellum.
  - D) medulla.
  - E) amygdala.
23. Nerve cells in the brain receive life-supporting nutrients and insulating myelin from
- A) glial cells.
  - B) neurotransmitters.
  - C) motor neurons.
  - D) hormones.
  - E) sensory neurons.
24. Which lobes of the brain receive the input that enables you to feel someone scratching your back?
- A) parietal
  - B) temporal
  - C) occipital
  - D) frontal
  - E) cerebral.
25. The occipital lobes are to \_\_\_\_\_ as the temporal lobes are to \_\_\_\_\_.
- A) hearing; sensing movement
  - B) seeing; sensing touch
  - C) sensing pleasure; sensing pain
  - D) seeing; hearing
  - E) speaking; hearing

26. One function of the glial cells is to
- A) control heartbeat and breathing.
  - B) mimic the effects of neurotransmitters.
  - C) provide nutrients to interneurons.
  - D) stimulate the production of hormones.
  - E) control the muscle movements involved in speech.
27. In 1848, Phineas Gage, a railroad construction foreman, survived when an explosion drove an iron rod through his head. The once friendly, soft-spoken Gage became irritable and dishonest. Gage's case provided evidence that which region of the brain plays a role in personality and behavior?
- A) temporal lobes
  - B) sensory cortex
  - C) frontal lobes
  - D) parietal lobes
  - E) Broca's area
28. To trigger a person's hand to make a fist, José Delgado stimulated the individual's
- A) motor cortex.
  - B) hypothalamus.
  - C) sensory cortex.
  - D) reticular formation.
  - E) limbic system.
29. A PET scan of a patient looking at a photograph of a painting would most likely indicate high levels of activity in which brain structure?
- A) sensory cortex
  - B) Broca's area
  - C) corpus callosum
  - D) occipital lobes
  - E) frontal lobes
30. The association areas are located in the
- A) spinal cord.
  - B) brainstem.
  - C) thalamus.
  - D) limbic system.
  - E) cerebral cortex.

31. In 1861, Paul Broca studied a stroke patient he called "Tan." He was called this because as a result of brain damage it was the only word he could pronounce. Based on Broca's early work, which of the following brain regions is involved in speech production?
- A) angular gyrus
  - B) left temporal lobe
  - C) sensory cortex
  - D) left frontal lobe
  - E) auditory cortex
32. The benefits of brain plasticity are most clearly demonstrated in
- A) children who have had a cerebral hemisphere surgically removed.
  - B) people paralyzed by a severed spinal cord.
  - C) individuals with Alzheimer's disease.
  - D) adults with aphasia.
  - E) people free of any disease or brain damage.
33. If a blind person uses one finger to read Braille, the brain area dedicated to that finger expands as the sense of touch invades the visual cortex. This is an example of
- A) brain plasticity.
  - B) hemispheric specialization.
  - C) neural prosthetics.
  - D) integrated association areas.
  - E) aphasia.
34. Which brain area is primarily involved with understanding and producing meaningful speech?
- A) sensory cortex
  - B) angular gyrus
  - C) association areas
  - D) Wernicke's area
  - E) hypothalamus
35. Which brain area is primarily involved with reading aloud?
- A) sensory cortex
  - B) angular gyrus
  - C) association areas
  - D) reticular formation
  - E) hypothalamus

36. The capacity of one brain area to take over the functions of another damaged brain area is known as brain
- A) tomography.
  - B) phrenology.
  - C) hemispherectomy.
  - D) aphasia.
  - E) plasticity.
37. A picture of a cat is briefly flashed in the left visual field and a picture of a mouse is briefly flashed in the right visual field of a split-brain patient. The individual will be able to use her
- A) right hand to indicate she saw a cat.
  - B) left hand to indicate she saw a mouse.
  - C) right hand to indicate she saw a mouse.
  - D) left or right hand to indicate she saw a cat.
  - E) left or right hand to indicate she saw a mouse.
38. The ability to simultaneously copy different figures with the right and left hand is most characteristic of those whose \_\_\_\_\_ has been cut.
- A) angular gyrus
  - B) reticular formation
  - C) corpus callosum
  - D) motor cortex
  - E) sensory cortex
39. Neurosurgeons have severed the corpus callosum in human patients in order to reduce
- A) aphasia.
  - B) epileptic seizures.
  - C) depression.
  - D) neural plasticity.
  - E) reward deficiency syndrome.
40. Psychologist Michael Gazzaniga asked split-brain patients to stare at a dot as he flashed HE·ART on a screen. HE appeared in the left visual field, ART in the right. When asked, patients said they saw
- A) HE.
  - B) ART.
  - C) HEART.
  - D) EA.
  - E) nothing. They were unable to complete the task.



41. Psychologist Michael Gazzaniga asked split-brain patients to stare at a dot as he flashed HE·ART on a screen. HE appeared in the left visual field, ART in the right. When asked to point to the word with their left hand, patients pointed to
- A) HE.
  - B) ART.
  - C) HEART.
  - D) EA.
  - E) nothing. They were unable to complete the task.
42. Which brain structure might be most active when answering the question “What do the following words have in common: plane, butter, insect?”
- A) amygdala
  - B) reticular formation
  - C) brainstem
  - D) left hemisphere
  - E) right hemisphere
43. Consciousness is
- A) the ability to solve problems, reason, and remember.
  - B) the process of organizing and interpreting sensory information.
  - C) effortless encoding of incidental information into memory.
  - D) our awareness of ourselves and our environment.
  - E) brain waves that indicate we are not reacting to a stimulus.
44. Research into dual processing provides partial evidence for levels of consciousness similar to the levels first described by which psychologist?
- A) B. F. Skinner
  - B) Wilhelm Wundt
  - C) Sigmund Freud
  - D) Mary Calkins
  - E) Edward Titchener
45. When people discuss the “nature vs. nurture” controversy, Nature refers to \_\_\_\_\_ and Nurture refers to \_\_\_\_\_.
- A) genes; heredity
  - B) chromosomes; genetics
  - C) biology; environment
  - D) DNA; hormones
  - E) thinking; behavior

## Answer Key

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

