

Test Bank for Biological Psychology 1st Lambert

Chapter 2 The Nervous System: Structure and Function

Multiple Choice

- Difficulty: Easy 1. _____ are only one of the cell types found in the nervous system.
Ans: b
Factual
Pages 33, 36
- a. Soma
b. Neurons*
c. Mitochondria
d. Myelin
- Difficulty: Easy 2. Your biopsychology professor keeps correcting you to remind you to refer to single cells of the nervous system as _____ and not as _____.
Ans: a
Factual
Pages 33, 38
- a. neurons; nerves*
b. nerve cells; nerves
c. ganglion; nerves
a. nerves; neurons
- Difficulty: Easy 3. The cells supporting the neurons of the brain are the _____.
Ans: b
Factual
Page 36
- a. neurons.
b. glia.*
c. neurofilaments.
d. Schwann cells.
- Difficulty: Moderate 4. _____ have a branched structure and receive stimulation from other neurons.
Ans: a
Factual
Page 34
- a. Dendrites*
b. Axons
c. Glial cells
d. Soma
- Difficulty: Moderate 5. The dendrites of a neuron _____
Ans: a
Factual
Page 34
- a. have expanded their surface area by developing dendritic spines.*
b. house the ribosomes of the cell.
c. transmit neural impulses to the glia.
a. release messages to neighboring neurons.
- Difficulty: Easy 6. The part of a neuron that contains the nucleus is called the _____.
Ans: b
Factual
Page 34
- a. axon.
b. soma.*
c. dendrite.
d. mitochondrion.
- Difficulty: Easy 7. The most prominent part of the neuron is the _____

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Ans: a
Factual
Page 34

- a. soma.*
- b. axon.
- c. terminal.
- d. dendritic process.

Difficulty: Easy
Ans: b
Factual
Page 35

8. The part of a neuron that sends information to another neuron is the _____
- a. soma.
 - b. axon.*
 - c. dendrite.
 - d. synapse.

Difficulty: Easy
Ans: a
Factual
Page 35

9. The axon of a neuron _____
- a. ends in swellings known as terminal branches.*
 - b. receives messages from other neurons.
 - c. transmits neural impulses to the soma.
 - d. contains the cell's nucleus.

Difficulty:
Difficult
Ans: c
Factual
Page 39

10. Sensory neurons _____
- a. control muscles and produce movement.
 - b. send messages away from the brain toward the periphery.
 - c. gather information from the environment and convey it into the central nervous system.*
 - d. produce axons covered with myelin.

Difficulty: Easy
Ans: d
Factual
Page 35

11. In _____ neurons the axon and the dendrites branch out from the soma in multiple directions.
- a. multi-fibered
 - b. unipolar
 - c. bipolar
 - d. multipolar

Difficulty: Easy
Ans: c
Factual
Page 35

12. A _____ neuron has an axon and the dendritic processes exiting from opposite ends of the soma.
- a. motor
 - b. unipolar
 - c. bipolar*
 - d. multipolar

Difficulty: Easy
Ans: b
Factual
Page 35

13. The soma of a _____ neuron gives rise to a short projection that divides into two branches.
- a. uni-fibered
 - b. unipolar*

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- c. bipolar
- d. multipolar

Difficulty: Easy 14. A(n) _____ would be transmitting impulses between a sensory neuron with a motor neuron.

Ans: c

Factual

Page 39

- a. glial neuron
- b. projection
- c. interneuron*
- d. multipolar

Difficulty: Easy 15. Negotiations can be said to involve an “intermediary” who communicates between two parties. The “intermediary” between a sensory neuron and a motor neuron is a _____

Ans: d

Conceptual

Page 39

- a. synapse.
- b. projection neuron.
- c. glial cell.
- d. interneuron.*

Difficulty: Easy 16. Most neurons in the brain are _____.

Ans: d

Factual

Page 35

- a. motor neurons
- b. unipolar neurons
- c. bipolar neurons
- d. multipolar neurons*

Difficulty: Easy 17. A disease that destroys myelin is _____

Ans: b

Factual

Page 37

- a. Alzheimer’s disease.
- b. multiple sclerosis.*
- c. Parkinson’s disease.
- d. neuropathy.

Difficulty: 18. Loss of myelin from neurons would be expected to _____

Moderate

Ans: b

Conceptual

Page 37

- a. speed up nerve cell electrical conduction.
- b. greatly impair neuronal electrical conduction.*
- c. increase the amplitude of the action potential.
- d. prevent the removal of dead nerve cells in the brain.

Difficulty: Easy 19. Who first proposed that individual neurons were not in direct contact with each other?

Ans: c

Factual

Page 33

- a. Golgi
- b. Loewi
- c. Cajal*
- d. Ranvier

Difficulty: Easy 20. The midbrain includes _____

Ans: d

Factual

Pages 48, 49

- a. the superior colliculi
- b. the tegmentum
- c. the tectum

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d. all of the above.*

Difficulty: Moderate
Ans: a
Factual
Page 46

21. Damage to the medulla can produce problems in _____.
a. regulation of respiration.*
b. regulation of sleep.
c. filtering of sensory information.
d. motor coordination.

Difficulty: Easy
Ans: d
Factual
Pages 47, 49

22. Immediately _____ to the thalamus is the _____.
a. dorsal; pituitary gland
b. ventral; pituitary gland
c. dorsal; hypothalamus
d. ventral; hypothalamus

Difficulty: Moderate
Ans: a
Factual
Page 39

23. Which of the cranial nerves extends to the body's organs?
a. optic
b. auditory
c. olfactory
d. vagus*

Difficulty: Moderate
Ans: b
Factual
Page 35

24. The sites of protein synthesis in neurons are called _____.
a. granule.
b. ribosomes.*
c. liposomes.
d. Golgi bodies.

Difficulty: Moderate
Ans: c
Conceptual
Page 36

25. What do you predict would happen if a purple dye made of a large protein molecule was injected into a rat's bloodstream?
a. The brain would be stained purple
b. The spinal cord would be stained purple.
c. All tissues except brain and spinal cord would be stained purple.
d. None of the body tissues would be stained purple.

Difficulty: Moderate
Ans: c
Factual
Page 37

26. The cells that produce myelin in the Peripheral Nervous System (PNS) are called _____.
a. Astrocytes.
b. Oligodendrocytes
c. Schwann cells.*
d. Microglia.

Difficulty: Easy
Ans: a
Conceptual
Page 47

27. Being given a "pat on the back" refers to being hit on the body's _____ surface.
a. dorsal*
b. ventral
c. rostral

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d. anterior

Difficulty: The
Ans: d
Conceptual
Page 47

28. The temporal lobes are _____ to the thalamus.

- a. dorsal
- b. rostral
- c. medial
- d. lateral*

Difficulty:
Moderate
Ans: a
Factual
Page 47

29. A cut through the brain that divides the two hemispheres (a cut "between the eyes") is called a _____ section.

- a. sagittal*
- b. coronal
- c. horizontal
- d. superior

Difficulty: Easy
Ans: c
Factual
Pages 39, 40

30. The two main parts of the peripheral nervous system are the

- a. sympathetic and parasympathetic.
- b. brain and spinal cord.
- c. somatic and autonomic*
- d. somatic and voluntary.

Difficulty:
Moderate
Ans: b
Factual
Pages 46, 48, 51

31. Which structure is part of the temporal lobes?

- a. Cerebellum
- b. Hippocampus *
- c. Tectum
- d. Tegmentum

Difficulty: Easy
Ans: b
Factual
Page 51

32. The visual information is processed in the _____ lobe.

- a. parietal
- b. occipital*
- c. olfactory
- d. frontal

Difficulty: Easy
Ans: c
Factual
Page 49

33. A primary function of the thalamus is to _____

- a. regulate blood pressure.
- b. control the pituitary gland.
- c. relay information to the cerebral cortex.*
- d. initiate hunger,

Difficulty:
Moderate
Ans: d
Conceptual
Page 50

34. The basal ganglia are important for _____

- a. processing visual information.
- b. processing auditory information.
- c. directing attention.
- d. regulating movement. *

Difficulty:

35. You've just eaten a huge meal consisting of a three meat barbecue

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Moderate
Ans: c
Conceptual
Pages 42, 43

plate (spareribs, brisket, polish sausage) with sides of beans, French fries and corn on the cob, cornbread with butter, 2 quarts of sweet tea, 2 slices of apple pie, and a wafer-thin mint. Your _____ is likely highly activated at this time.

- a. somatic nervous system
- b. sympathetic nervous system
- c. parasympathetic nervous system*
- d. basal ganglia

Difficulty: Moderate
Ans: c
Conceptual
Page 42

36. You've just been mugged and punched. Your _____ is likely highly activated at this time

- a. somatic nervous system
- b. sympathetic nervous system*
- c. parasympathetic nervous system
- d. basal ganglia

Difficulty: Moderate
Ans: d
Factual
Pages 46, 48

37. The reticular formation is a network of neurons in the brain that _____

- a. controls respiration.
- b. regulates blood pressure.
- c. processes odor information.
- d. can cause you to pay attention to a new sound.*

Difficulty: Easy
Ans: d
Factual
Page 34

38. The _____ initiates the process of propagating neural messages away from the soma toward a target such as another neuron.

- a. Golgi apparatus
- b. mitochondria
- c. dendrite
- d. axon hillock*

Difficulty: Easy
Ans: b
Factual
Page 38

39. Cabled axons of multiple neurons within the central nervous system are called _____

- a. nerves.
- b. tracts.*
- c. projections.
- d. commissures.

Difficulty: Moderate
Ans: c
Factual
Page 16

40. When a dominant gene is paired with a recessive gene, the gene pair is said to be _____ for that trait.

- a. homozygous
- b. phenotypic
- c. heterozygous*
- d. polygenic

Difficulty: 41. As a group, the 12 cranial nerves differ from spinal nerves in that

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- Difficult they _____
Ans: b a. only project to the head, neck and shoulders.
Factual b. exit directly from the brain.*
Page 39 c. carry only sensory information.
 d. carry only motor commands.
- Difficulty: Easy 42. Each spinal nerve projects to a specific patch of skin on the body
Ans: a surface called a _____
Factual a. dermatome.*
Page 39 b. somatotome.
 c. receptive field.
 d. target field.
- Difficulty: 43. The lowest level of the brain is called the _____
Moderate a. telencephalon.
Ans: d b. myelencephalon.*
Factual c. metencephalon.
Page 46 d. mesencephalon.
- Difficulty: 44. The highest level of the brain is called the _____.
Moderate a. mesencephalon
Ans: c b. diencephalon
Factual c. telencephalon*
Page 49 d. myelencephalon
- Difficulty: 45. Parkinson's disease affects the function of the _____.
Moderate a. cerebellum.
Ans: c b. limbic system.
Factual c. basal ganglia.*
Page 50 d. reticular formation.
- Difficulty: Easy 46. Epileptics experiencing intense emotions instead of convulsions
Ans: a may be having a _____ seizure.
Factual a. limbic system*
Page 50 b. basal ganglia
 c. reticular formation
 d. cerebellar
- Difficulty: easy 47. The limbic system is present in _____
Ans: c a. fish.
Factual b. reptiles.
Page 51 c. mammals.*
 d. worms.
- Difficulty: 48. The bulges on the surface of the cerebral cortex are referred to as

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Moderate

Ans: b

Factual

Page 51

- _____
- a. sulci.
 - b. gyri.*
 - c. lobes.
 - d. tuberosities.

Difficulty: Easy

Ans: c

Factual

Page 53

49. The misfortune of Phineas Gage helped illuminate the function of the _____

- a. parietal lobe.
- b. temporal lobe
- c. frontal lobe.*
- d. occipital lobe.

Difficulty:

Difficult

Ans: d

Factual

Page 54

50. One of the specialized functions of the left cerebral hemisphere is _____

- a. mathematics.
- b. musical ability.
- c. motor skills.
- d. language.*

Difficulty: Easy

Ans: a

Factual

Page 56

51. The body's tendency to maintain a consistent internal environment is called _____

- a. homeostasis.*
- b. metastasis.
- c. allostasis.
- d. resilience.

Difficulty:

Moderate

Ans: b

Factual

Page 56

52. The body's management of the varying energy demands across organs in response to stress is called _____

- a. homeostasis.
- b. metastasis.
- c. allostasis. *
- d. resilience.

Difficulty:

Difficult

Ans: a

Conceptual

Page 58

53. The work of Ader and Cohen established _____

- a. that the nervous and immune systems communicate cooperatively.*
- b. the function of the limbic system.
- c. the effects of split-brain surgery.
- d. the role of the sympathetic nervous system in digestion.

Difficulty:

Difficult

Ans: c

54. The immune response within the central nervous system (CNS) is _____

- a. more intense than the immune response in the

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Conceptual
Page 59

- peripheral nervous system (PNS).
- b. slower than the immune response in the peripheral nervous system (PNS) but just as strong.
 - c. weaker than the immune response in the peripheral nervous system (PNS).*
 - d. more selective than the immune response in the peripheral nervous system (PNS).

Difficulty:
Moderate
Ans: d
Factual
Page 57

55. The acquired immune system, or adaptive immune system, was identified by _____
- a. Neal Miller.
 - b. Ader and Cohen.
 - c. Bruce McEwen.
 - d. Edward Jenner.*

Difficulty: Easy
Ans: d
Factual
Page 55

56. The choroid plexus renews the total volume of cerebrospinal fluid (CSF) _____ per day.
- a. once
 - b. twice.
 - c. ten times
 - d. three times*

Difficulty:
Moderate
Ans: a
Conceptual
Page 52

57. Compared with other mammals, humans have a _____ cerebral cortex.
- a. disproportionately large *
 - b. disproportionately small
 - c. proportionately sized
 - d. slightly larger

Difficulty:
Moderate
Ans: a
Factual
Page 51

58. The _____ separates the primary motor cortex in the frontal lobe from the primary somatosensory cortex in the parietal lobe
- a. central fissure*
 - b. central gyrus
 - c. insula
 - d. basal ganglia

Difficulty: Easy
Ans: c
Factual
Pages 51

59. The human brain's cerebral cortex is divided into how many distinct cellular layers?
- a. four
 - b. five
 - c. six*
 - d. seven

Difficulty:
Difficult

60. Parkinson's disease results from suboptimal activation of the basal ganglia due to an inadequate supply of _____.

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Ans: d
Factual
Page 50

- a. cerebrospinal fluid (CSF).
- b. glucocorticoids.
- c. adrenaline.
- d. dopamine.*

Difficulty:
Moderate

Ans: c
Factual
Page 59

61. The insertion of fluorescent protein genes found in jellyfish and coral into mouse genes is the basis of _____
- a. psychoneuroimmunology.
 - b. biofeedback.
 - c. Brainbow transgenic mice.*
 - d. allostasis.

Difficulty:
Moderate

Ans: b
Factual
Page 58

62. Which of the following would activate the adaptive immune system?
- a. Glucocorticoids
 - b. Antigens*
 - c. Adrenaline
 - d. Allostatic overload

Difficulty:
Difficult

Ans: a
Factual
Page 56

63. If stress continues for too long the result can be described as
- a. allostatic overload.*
 - b. homeostasis.
 - c. hypertension.
 - d. hyperthyroidism.

Difficulty:
Moderate

Ans: b
Factual
Page 55

64. The _____ provides buoyancy and physical space that acts as a buffer when the brain is jolted as a result of sudden movement.
- a. dura mater.
 - b. cerebrospinal fluid (CSF)*
 - c. pia mater
 - d. arachnoid mater

Difficulty: Easy
Ans: a
Conceptual
Page 54

65. A person with a split-brain surgery has objects presented visually in front of them. What might be expected?
- a. They could respond verbally only if the left hemisphere was activated by the right visual field. *
 - b. They could respond verbally only if the left hemisphere was activated by the left visual field.
 - c. They could respond verbally only if the right hemisphere was activated by the left visual field.
 - d. They could respond verbally only if the right hemisphere was activated by the right visual field.

Difficulty:
Difficult

66. You have a very clear memory for what you were wearing on the day you proposed marriage to your significant other. Why might

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- Ans: d
Conceptual
Page 51
- this be the case?
- a. Reduced serotonin activity in the reticular formation.
 - b. Seizure activity in the basal ganglia.
 - c. Increased motor inputs to the cerebellum.
 - d. Stress hormone activation of the hippocampus.*
- Difficulty: Easy
Ans: a
Factual
Pages 46, 53
67. Which of the following structures is the least critical for maintaining basic autonomic functions?
- a. Forebrain*
 - b. Cerebellum
 - c. Medulla oblongata
 - d. Hypothalamus
- Difficulty: Moderate
Ans: c
Conceptual
Page 46
68. Which of the following structures is the most critical for maintaining basic autonomic functions?
- a. Forebrain
 - b. Cerebellum
 - c. Medulla oblongata *
 - d. Hypothalamus
- Difficulty: Easy
Ans: d
Conceptual
Pages 44, 45
69. Which of the following conditions should result in the least amount of neurogenesis in rats?
- a. Socially housed rats allowed to run.
 - b. Socially housed rats not allowed to run.
 - c. Individually housed rats allowed to run.
 - d. Individually housed rats not allowed to run.*
- Difficulty: Moderate
Ans: a
Conceptual
Pages 44, 45
70. Which of the following conditions should result in the greatest amount of neurogenesis in rats?
- a. Socially housed rats allowed to run. *
 - b. Socially housed rats not allowed to run.
 - c. Individually housed rats allowed to run.
 - d. Individually housed rats not allowed to run.
- Difficulty: Difficult
Ans: c
Factual
Page 39
71. After damage, neurons in the central nervous system (CNS) do not regenerate because _____
- a. microglia do not readily clear away debris from the damage.
 - b. of the presence of inhibitory proteins
 - c. astrocytes promote the formation of scar tissue.
 - d. All of the above options are correct.*
- Difficulty: Difficult
Ans: b
Factual
72. Isotopic fractionation was used to answer what question about the brain?
- a. The amount of myelin loss in Multiple Sclerosis (MS).
 - b. Relative overall number of glial cells versus neurons.*

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Page 37

- c. The speed of a nerve signal.
- d. The rate of cerebrospinal fluid (CSF) synthesis.

Difficulty:
Moderate

73. Gaps along the axon between segments of myelin are called _____.

Ans: d

Factual

Page 34

- a. dendritic spines
- b. terminal branches
- c. axon hillocks
- d. nodes of Ranvier*

Difficulty:
Difficult

74. Stimulating activity of what brain region would be predicted to enhance the effectiveness of biofeedback techniques?

Ans: a

Conceptual

Page 32

- a. insular cortex*
- b. parietal cortex.
- c. the cerebellum
- d. the amygdala

Difficulty:
Moderate

75. _____ are an important part of the adaptive immune system.

Ans: c

Conceptual

Pages 57

- a. Phagocytes
- b. Macrophages
- c. T-cells*
- d. Microglia

Difficulty:
Moderate

76. In response to environmental stressors the adrenal medulla releases _____

Ans: d

Factual

Page 56

- a. corticotropin-releasing hormone (CRH).
- b. adrenocorticotrophic hormone (ACTH).
- c. glucocorticoids
- d. adrenaline. *

Difficulty: Easy
Ans: c

Factual

Page 56

77. In response to environmental stressors the adrenal cortex releases _____

- a. corticotropin-releasing hormone (CRH).
- b. adrenocorticotrophic hormone (ACTH).
- c. glucocorticoids.*
- d. adrenaline.

Difficulty:
Moderate

78. The choroid plexus produces _____

Ans: c

Factual

Page 55

- a. neuronal stem cells.
- b. microglia.
- c. cerebrospinal fluid (CSF).*
- d. the blood-brain barrier.

Difficulty:
Moderate

79. Brain lateralization means _____

- a. the two cerebral hemispheres have specialized

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- Ans: a
Conceptual
Page 53
- functions.*
- b. anatomical structures on one side of the brain have a twin counterpart on the other.
- c. the two cerebral hemispheres are connected.
- d. damage to one of the two cerebral hemispheres can be compensated for by the other.
- Difficulty: Moderate
Ans: c
Factual
Pages 53, 54
80. Split-brain surgery conducted to treat epilepsy also provided evidence for _____
- a. multiple personalities.
- b. the biological basis of depression.
- c. brain lateralization.*
- d. none of the above options are correct.
- Difficulty: Moderate
Ans: c
Factual
Page 51
81. Which lobe of the cerebral cortex is dedicated to the control of movement and decision making?
- a. Parietal lobe
- b. Temporal lobe
- c. Frontal lobe*
- d. Occipital lobe
- Difficulty: Moderate
Ans: b
Factual
Page 49
82. Which of the following structures is critical for the regulation of the pituitary gland?
- a. thalamus
- b. hypothalamus*
- c. amygdala
- d. basal ganglia
- Difficulty: Easy
Ans: d
Factual
Page 49
83. The corpus callosum connects what two structures?
- a. The hippocampus and amygdala
- b. The brain stem and forebrain
- c. The thalamus and hypothalamus
- d. The right and left cerebral hemispheres*
- Difficulty: Moderate
Ans: c
Factual
Page 46
84. The use of field sobriety tests by the police are intended to assess the function of _____
- a. the pons.
- b. the medulla oblongata.
- c. the cerebellum.*
- d. the basal ganglia.
- Difficulty: Difficult
Ans: a
Factual
Pages 46, 48, 49,
85. Which of the following is part of the forebrain?
- a. hippocampus*
- b. cerebellum
- c. superior colliculi
- d. inferior colliculi

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50

Difficulty: 86. Which of the following is not part of the forebrain?
Difficult a. amygdala
Ans: d b. basal ganglia
Factual c. hypothalamus
Pages 46, 48, 49, d. red nucleus*
50

Difficulty: 87. Which of the following is part of the midbrain?
Difficult a. inferior colliculi*
Ans: a b. hypothalamus
Factual c. basal ganglia
Pages 46, 48, 49, d. medulla oblongata
50

Difficulty: 88. Which of the following is not part of the midbrain?
Difficult a. superior colliculi
Ans: c b. inferior colliculi
Factual c. basal ganglia*
Pages 46, 48, 49, d. periaqueductal gray
50

Difficulty: 89. Which of the following is part of the brainstem?
Difficult a. hypothalamus
Ans: c b. thalamus
Factual c. superior colliculi*
Pages 46, 48, 49, d. basal ganglia
50

Difficulty: 90. Which of the following is not part of the brainstem?
Difficult a. pons
Ans: d b. medulla oblongata
Factual c. reticular formation
Pages 46, 48, 49 d. hypothalamus*

Difficulty: Easy 91. The brain micromanages its energy expenditure in proportion to
Ans: c its missions because it consumes _____ of the body's fuel.
Factual a. 5%
Page 44 b. 15%
c. 25%*
d. 50%

Difficulty: Easy 92. Voluntary intentional movements of the skeletal muscles are
Ans: c controlled by the _____.
Factual a. sympathetic nervous system.

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Page 39

- b. parasympathetic nervous system.
- c. somatic nervous system. *
- d. autonomic nervous system.

Difficulty: Easy

Ans: b

Factual

Pages 43, 44

93. Which branch of the nervous system can be characterized as the “rest-and-digest” system?

- a. sympathetic
- b. parasympathetic*
- c. somatic
- d. autonomic

Difficulty:

Moderate

Ans: d

Factual

Page 43

94. Activation of the sympathetic nervous system _____

- a. prepares the individual for empathic contact with emotional individuals.
- b. prepares the individual to store excess calories as fat.
- c. prepares the individual for digesting a meal.
- d. prepares the individual for strenuous physical responses.*

Difficulty:

Moderate

Ans: c

Factual

Page 37

95. Up to 80% of the brain’s neurons can be found in _____

- a. the cerebral cortex.
- b. the sympathetic nervous system
- c. the cerebellum.*
- d. the ganglia.

Difficulty:

Moderate

Ans: b

Factual

Page 36

96. Endothelial cells with tight junctions in combination with _____ are responsible for the blood-brain barrier.

- a. bipolar cells
- b. astrocytes*
- c. oligodendrocytes
- d. microglia

Difficulty: Easy

Ans: a

Factual

Pages 31, 32

97. Self-proclaimed endurance artist _____ increased voluntary control over his autonomic breathing functions to break the world record for holding one’s breath.

- a. David Blaine*
- b. Neal Miller
- c. Camillo Golgi
- d. Santiago Ramón y Cajal

Difficulty: Easy

Ans: b

Factual

Page 33

98. Who abandoned the *nerve net theory* and endorsed the notion that neurons are discrete units, not part of a continuous network?

- a. Camillo Golgi
- b. Santiago Ramón y Cajal*
- c. Sir Charles Sherrington
- d. Neal Miller

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Difficulty: Easy 99. Who demonstrated that autonomic functions were within individual voluntary control?

Ans: d

Factual

Page 32

- a. Camillo Golgi
- b. Santiago Ramón y Cajal
- c. Sir Charles Sherrington
- d. Neal Miller*

Difficulty: Easy 100. Who believed that the nervous system consisted of a continuous network of connected nerves?

Ans: a

Factual

Page 33

- a. Camillo Golgi*
- b. Santiago Ramón y Cajal
- c. Sir Charles Sherrington
- d. Neal Miller

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True/False

- Difficulty: Easy 1. An individual neuron can also be referred to as a nerve.
Ans: False a. True
Factual b. False
Pages 33, 38
- Difficulty: Easy 2. Sensory neurons move the muscles.
Ans: False a. True
Factual b. False
Page 38
- Difficulty: Moderate 3. The most common neuron in the central nervous system is the interneuron.
Ans: False a. True
Factual b. False
Page 34
- Difficulty: Moderate 4. Dendritic spines are small fibers where terminal branches appear.
Ans: False a. True
Factual b. False
Page 34
- Difficulty: Easy 5. The most common type of neuron in the nervous system is the bipolar neuron.
Ans: False a. True
Factual b. False
Page 34
- Difficulty: Difficult 6. Most unipolar and bipolar neurons are sensory in nature.
Ans: True a. True
Factual b. False
Page 35
- Difficulty: Moderate 7. The most important supporting cells in the nervous system are the glia.
Ans: True a. True
Factual b. False
Page 36
- Difficulty: Easy 8. One function of microglia is to clean up the debris in the nervous system.
Ans: True a. True
Factual b. False
Page 36

Chapter 2 The Nervous System: Structure and Function

Difficulty: Easy

Ans: True

Factual

Pages 36, 37

9. The myelin sheath is formed by either oligodendrocytes or Schwann cells.

a. True

b. False

Difficulty:

Difficult

Ans: True

Factual

Page 50

10. Dopamine plays a key role in Parkinson's disease.

a. True

b. False

Difficulty:

Difficult

Ans: True

Factual

Page 37

11. Multiple sclerosis is the result of the loss of myelin.

a. True

b. False

Difficulty:

Difficult

Ans: True

Conceptual

Page 52

12. As brain complexity increases across species to humans, there is a disproportionate increase in the size of the cerebral cortex.

a. True

b. False

Difficulty:

Difficult

Ans: False

Factual

Page 38

13. The nervous system is divided into three subunits: the central nervous system, the spinal cord, and the peripheral nervous system.

a. True

b. False

Difficulty:

Moderate

Ans: True

Factual

Page 51

14. The cerebral cortex consists of gray matter.

a. True

b. False

Difficulty:

Difficult

Ans: False

Conceptual

Pages 52, 53

15. With frontal lobe damage the most common consequence is the loss of language.

a. True

b. False

Difficulty:

Difficult

Ans: True

Conceptual

16. Epilepsy in the limbic system produces strong feelings and emotions.

a. True

b. False

Chapter 2 The Nervous System: Structure and Function

Page 50

Difficulty: 17. The spinal nerves deal mostly with head, neck and shoulders.
Difficult a. True
Ans: False b. False
Factual
Page 39

Difficulty: Easy 18. The hypothalamus controls the pituitary.
Ans: True a. True
Factual b. False
Page 49

Difficulty: 19. Neurogenesis can be improved by exercise.
Difficult a. True
Ans: True b. False
Conceptual
Page 44

Difficulty: Easy 20. Split-brain surgery is primarily intended to be a surgical
Ans: True intervention to treat epilepsy.
Factual a. True
Page 54 b. False

Chapter 2 The Nervous System: Structure and Function

Fill-in-the-Blank

Difficulty: Easy

Ans:

Biofeedback
techniques

Factual

Page 32

1. _____ can alter functions such as heart rate and blood flow.

Difficulty: Easy

Ans: insular
cortex

Factual

Page 32

2. The _____ is involved in *interoception*, the ability to monitor the body's internal processes.

Difficulty: Easy

Ans: nerve net
theory

Factual

Page 33

3. Camillo Golgi advocated _____ .

Difficulty: Easy

Ans: nodes of
Ranvier

Factual

Page 34

4. Tiny gaps in the myelin sheath are called _____.

Difficulty:

Moderate

Ans: Astrocytes

Factual

Page 36

5. _____ transport essential nutrients from the brain's blood vessels to neurons and maintain a constant chemical environment for them.

Difficulty:

Moderate

Ans: cerebellum

Factual

Page 37

6. The _____ contains up to 80% of all the brain's neurons.

Difficulty:

Difficult

Ans: dermatome

Factual

Page 39

7. A _____ is a specific area of skin served by a spinal nerve.

Chapter 2 The Nervous System: Structure and Function

Difficulty:

Difficult

Ans: globus

pallidus

Factual

Page 50

8. The basal ganglia consists of the caudate, the putamen and the _____.

Difficulty:

Difficult

Ans: allostatic

overload

Factual

Page 56

9. If stress continues for too long, a process known as _____ may occur.

Difficulty:

Moderate

Ans: antigens

Factual

Page 58

10. Any substances leading to the production of antibodies are sometimes referred to as _____.

Essay Questions

1. What are the structures of a neuron and what are their functions?

Ans: dendrite, receive messages from other neurons; soma, housing nucleus and maintaining cellular life processes; axon hillock, gateway to axon; axon relays messages to other neurons; terminal branches; makes contact with dendrites of other neurons.

Difficulty: Moderate

Factual

Pages 34, 35

2. What are the different kinds of glial cells and what do they do?

Ans: astrocyte, maintain constant chemical environment for neurons; microglia, resident immune system; oligodendrocyte, myelin in the CNS, Schwann cell, myelin in the PNS.

Difficulty: Moderate

Factual

Pages 36, 37

3. What is the difference between the functions of the sympathetic and parasympathetic nervous systems?

Ans: the sympathetic prepares the organism to expend energy in response to a crisis, fight-or-flight; the parasympathetic prepares the organism to store energy and heal or repair itself, rest-and-digest.

Difficulty: Moderate

Factual

Page 40

4. What was the nature of the disagreement between Camillo Golgi and Santiago Ramón y Cajal?

Ans: Golgi supported nerve net theory, that the nervous system was a physically interconnected system of cells. Cajal supported the neuron doctrine, that all neurons were physically separate cells.

Difficulty: Difficult

Conceptual

Page 33

5. How did MacLean envision the role of the limbic system?

Ans: MacLean used a neuroethological approach, believing its role was to facilitate play behavior, parental behavior, and the cry of infants on separation from their mothers.

Difficulty: Moderate

Conceptual

Pages 50, 51