Drugs and the Neuroscience of Behavior An Introduction to Psychopharmacology 2nd edition Prus Test Bank

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Chapter 2: The Nervous System

Test Bank

Multiple Choice

1. Specialized cells in the nervous system that control behavior, senses, and movement are called:
a. neurons.
b. glial cells.
c. synapses.
d. endothelial cells.
Ans: A
Answer Location: Cells in the Nervous System
Learning Objective: Cells in the Nervous System
Cognitive Domain: Knowledge
Difficulty Level: Easy

2. Which of the following is NOT a function or characteristic of neurons?
a. Neurons communicate with other neurons in the central nervous system.
b. Neurons have dendrites and axons.
c. Neurons form myelin sheaths around axons.
d. Neurons control behavior, senses, and movement.
Ans: C
Answer Location: Cells in the Nervous System
Learning Objective: Cells in the Nervous System
Cognitive Domain: Knowledge
Difficulty Level: Medium

3. The parts of neurons that receive information from other neurons are called:
a. axons.
b. dendrites.

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c. synapses.

d. somas.

Ans: B

Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Easy

4. The greater the density of spines along dendrites, the greater a neuron's:

a. neurotransmitter system.

b. synaptic zone.

c. firing rate.

d. receptive area.

Ans: D

Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Application

Difficulty Level: Hard

5. The part of a neuron that sends neurotransmitters into a synapse is called a(n):

a. receptor.

b. synapse.

c. axon.

d. dendrite.

Ans: C

Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Medium

6. A toxin that destroyed the presynaptic terminal on an axon would likely:

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a. prevent a neuron from receiving information from other neurons.

b. prevent a neuron from sending information to other neurons.

c. cause damage to the postsynaptic terminal.

d. change a neuron's dendritic spine growth.

Ans: B

Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Analysis.

Difficulty Level: Medium

7. Which of the following lists the components found in a synapse?

a. Axon terminal, synaptic cleft, and postsynaptic terminal

b. Axon terminal, synaptic space, and postsynaptic terminal

c. Dendritic spine, soma, and synaptic cleft

d. Soma, synaptic cleft, and receptor

Ans: A

Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Medium

8. If a neuroscientist stated that a brain structure had *efferent neurons*, what can be concluded?

a. The structure must receive information from other neurons.

b. The structure must also have afferent neurons.

c. The structure sends information to other neurons.

d. Interneurons affect the flow of information in the structure.

Ans: C

Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Comprehension

Difficulty Level: Hard

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9. Which of the following are *afferent neurons*, relative to the central nervous system?

a. Motor neurons

b. Sensory neurons

c. Interneurons

d. Synaptic neurons

Ans: B

Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Hard

10. A neuron was found to originate in the hippocampus and terminate in the prefrontal cortex. Relative to the hippocampus, the neuron would be called a(n):

a. afferent neuron.

b. efferent neuron.

c. interneuron.

d. motor neuron.

Ans: A

Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Application

Difficulty Level: Medium

11. A neuron was found to originate in the hippocampus and terminate in the prefrontal cortex. Relative to the prefrontal cortex, the neuron would be called a(n):

a. interneuron.

b. efferent neuron.

c. afferent neuron.

d. motor neuron.

Ans: C

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Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Application

Difficulty Level: Medium

12. What effect might a disease that destroyed oligodendrocytes have on neuronal function?

a. Mitochondria in a neuron would no longer function.

b. Neurons would be unable to form the blood-brain barrier.

c. Electrical impulses would be unable to travel down axons.

d. Neurotransmission from the neuron would increase.

Ans: C

Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Analysis

Difficulty Level: Hard

13. A disease that destroyed astrocytes would be expected to:

a. decrease a neurons's aerobic energy metabolism.

b. prevent electrical impulses from traveling down axons.

c. lead to foreign substances entering the brain from the circulatory system.

d. increase the density of dendritic spines.

Ans: C

Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Comprehension

Difficulty Level: Hard

14. Oligodendrocytes form:

a. synapses.

b. the blood-brain barrier

c. myelin around axons.

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d. spines along dendrites.

Ans: C

Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Medium

15. Which cell causes endothelial cells to fit closely together?

a. Oligodendrocytes

b. Microglial cells

c. Astrocytes

d. Interneurons

Ans: C

Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Easy

16. _____ is a process for responding to brain injury.

a. Microglial cell activation

b. Gliosis

c. Myelination

d. The blood-brain barrier

Ans: B

Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Easy

17. Which type of microglial cells promote inflammation?

a. M4

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b. M3

c. M2

d. M1

Ans: C

Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Hard

18. If physicians found that inflammation had caused damage to the blood-brain barrier, which cells would most likely be responsible?

a. Astrocytes

b. Microglial cells

c. Oligodendrocytes

d. Neurons.

Ans: B

Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Comprehension

Difficulty Level: Medium

19. If a neuroscientist described a structure as more lateral to a particular area, this means that:

a. the structure is below the area.

b. the structure is closer to the midline of the brain.

c. the structure is further out to the side of the brain.

d. the structure is anterior to the area.

Ans: C

Answer Location: The Nervous System: Control of Behavior and Physiological Functions

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Comprehension

Difficulty Level: Easy

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20. A researcher found that a drug increased heart rate. Which nervous system was the drug most likely acting upon?

a. Central Nervous System

b. Somatic Nervous System

c. Extrapyramidal System

d. Autonomic Nervous System

Ans: D

Answer Location: The Peripheral Nervous System: Controlling and Responding to Physiological

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Application

Processes in the Body

Difficulty Level: Medium

21. Which nervous sytem is responsible for delivering voluntary motor signals from the CNS to muscles throughout the body?

a. Somatic Nervous System

b. Central Nervous System

c. Autonomic Nervous System

d. Extrapyramidal System

Ans: A

Answer Location: The Peripheral Nervous System: Controlling and Responding to Physiological

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Processes in the Body

Difficulty Level: Medium

22. The point where a motor neuron meets a muscle fiber is called the:

a. neuromuscular junction.

b. dorsal horn

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c. end terminus.

d. ventral root.

Ans: A

Answer Location: The Peripheral Nervous System: Controlling and Responding to Physiological Processes in the Body

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Hard

23. To which part of the spinal cord is sensory information sent?

a. Doral root

b. Ventral root

c. Neuromuscular junction

d. Sympathetic ganglion

Ans: A

Answer Location: The Peripheral Nervous System: Controlling and Responding to Physiological

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Processes in the Body

Difficulty Level: Hard

24. Which of the following would NOT be an example of having an activated sympathetic nervous system?

a. Pupil dilation

b. Constricted airways

c. Inhibited digestion

d. Inhibited salvation

Ans: B

Answer Location: The Peripheral Nervous System: Controlling and Responding to Physiological

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

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Processes in the Body
Difficulty Level: Hard

25. The autonomic nervous has control centers in the:
a. pituitary gland.
b. cerebellum.
c. basal ganglia.
d. medulla.
Ans: D
Answer Location: The Central Nervous System
Learning Objective: The Nervous System: Control of Behavior and Physiological Functions
Cognitive Domain: Knowledge
Difficulty Level: Medium

26. Which of the following is not true about the cerebral cortex?
a. The cerebral cortex has features called gyri and sulci.
b. The cerebral cortex is located in the forebrain.
c. The cerebral cortex includes the cerebellum.
d. The cerebral cortex is found on the surface of the brain.
Ans: C
Answer Location: The Central Nervous System
Learning Objective: The Nervous System: Control of Behavior and Physiological Functions
Cognitive Domain: Analysis
Difficulty Level: Medium

27. If a drug severely depressed the functioning of the medulla, which of the following might be likely to occur?
a. The person may have constricted pupils.
b. The person may have an increase in heart rate.
c. The person may stop breathing.
d. The person may have motor tremor.

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Ans: C

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Application

Difficulty Level: Medium

28. A drug that increases appetite would likely affect:

a. the hippocampus.

b. the medulla.

c. the thalamus.

d. the hypothalamus.

Ans: D

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Application

Difficulty Level: Medium

29. The hypothalamus is located in the:

a. midbrain.

b. forebrain.

c. hindbrain.

d. cingulate cortex.

Ans: B

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Easy

30. Damage to the _____ could cause changes to one's motivation to eat, such as having a low appetite.

a. hippocampus

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b. hypothalamus

c. medulla

d. pineal gland

Ans: B

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Comprehension

Difficulty Level: Medium

31. Many drugs that produce highly enjoyable effects likely do so by affecting the:

a. medulla.

b. thalamus.

c. nucleus accumbens.

d. reticular activating system.

Ans: C

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Comprehension

Difficulty Level: Medium

32. The thalamus routes all types of sensory information except:

a. visual information.

b. auditory information.

c. olfactory information.

d. touch information.

Ans: C

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Hard

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33. A person suffering from an inability to speak the word she intends to say, sometimes described as having a word on the tip of your tongue, might have abnormal functioning in the:

a. parietal lobe.

b. cingulate cortex.

c. occipital lobe.

d. temporal lobe.

Ans: D

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Application

Difficulty Level: Easy

34. A drug that caused someone to make a reckless decision might be affecting the:

a. temporal lobe.

b. cingulate cortex.

c. hippocampus.

d. prefrontal cortex.

Ans: D

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Comprehension

Difficulty Level: Medium

35. A severe tremor in someone's hands could be caused by abnormal functioning in the:

a. corpus callosum.

b. medulla.

c. basal ganglia.

d. hippocampus.

Ans: C

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

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Cognitive Domain: Application
Difficulty Level: Easy

36. If a loud noise made you jump, which structure was most likely responsible for this response?
a. Pons
b. Medulla
c. Cerebellum
d. Hypothalamus
Ans: A
Answer Location: The Central Nervous System
Learning Objective: The Nervous System: Control of Behavior and Physiological Functions
Cognitive Domain: Comprehension
Difficulty Level: Easy

37. The _____ facilitates balance and the timing of movements.
a. basal ganglia
b. medulla
c. pons
d. cerebellum
Ans: D
Answer Location: The Central Nervous System
Learning Objective: The Nervous System: Control of Behavior and Physiological Functions
Cognitive Domain: Knowledge
Difficulty Level: Medium

38. While taking notes in class, a student had keep in mind what the professor had just stated in order to draw a diagram in her notebook. This is an example of:
a. reference memory.
b. procedural memory.
c. working memory.

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d. implicit memory.

Ans: C

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Application

Difficulty Level: Medium

39. If a person ingested a substance that temporarily impaired the functioning of the hippocampus, which of the following would most likely be the result?

a. The person would have impaired decision making while the drug's effects were active.

b. The person would have impaired movement while the drug's effects were active.

c. The person would later be unable to recall events that took place for some period of time after taking the substance.

d. The person would have dulled senses for some period of time after taking the substance.

Ans: C

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Application

Difficulty Level: Hard

40. A drug that inhibited the reticular activating system would most likely cause:

a. alertness.

b. increased heart rate.

c. sleepiness.

d. tremor.

Ans: C

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Application

Difficulty Level: Medium

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41. All of the following describe functions for cerebrospinal fluid except:

a. it provides a protective cushion for the brain.

b. it provides a medium for nutrients to cells.

c. it increases flow to highly active neurons.

d. it fills spaces in the brain.

Ans: C

Answer Location: Cerebral Blood Flow and Cerebrospinal Fluid

Learning Objective: Cerebral Blood Flow and Cerebrospinal Fluid

Cognitive Domain: Analysis

Difficulty Level: Medium

42. The small layer of tissue surrounding the cerebral aqueduct in the brain is called:

a. periaqueductal gray.

b. cerebrospinal fluid.

c. a ventricle.

d. gray matter.

Ans: A

Answer Location: Cerebral Blood Flow and Cerebrospinal Fluid

Learning Objective: Cerebral Blood Flow and Cerebrospinal Fluid

Cognitive Domain: Knowledge

Difficulty Level: Medium

43. If an experimental drug produced physiological effects similar to nitric oxide, then a researcher would:

a. reduced cerebrospinal fluid.

b. expect to find increased blood flow.

c. reduced oxygen delivery to cells.

d. increased protection of the brain.

Ans: B

Answer Location: Cerebral Blood Flow and Cerebrospinal Fluid

Learning Objective: Cerebral Blood Flow and Cerebrospinal Fluid

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Cognitive Domain: Comprehension

Difficulty Level: Medium

44. The presence of at least one Y chromosome indicates:

a. that a person will have a polymorphism.

b. that a person is genetically female.

c. that a person is genetically male.

d. that a person has autochromosomal traits.

Ans: C

Answer Location: Genes and the Development and Physiological Processes of Cells

Learning Objective: Cerebral Blood Flow and Cerebrospinal Fluid

Cognitive Domain: Comprehension

Difficulty Level: Easy

45. Specific instructions that encode for traits are called:

a. polymorphisms.

b. autosomal chromosomes.

c. genes.

d. proteins.

Ans: C

Answer Location: Genes and the Development and Physiological Processes of Cells

Learning Objective: Cerebral Blood Flow and Cerebrospinal Fluid

Cognitive Domain: Knowledge

Difficulty Level: Easy

46. If a physician identified her patient as a low drug metabolizer, which of the following is most likely true?

a. The patient has a polymorphism that slow metabolism of a drug.

b. The patient is noncompliant and needs additional monitoring.

c. The patient has a low level of transcription factors.

d. The patient is at risk of a Mendelian disease.

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Ans: A
Answer Location: Genes and the Development and Physiological Processes of Cells
Learning Objective: Cerebral Blood Flow and Cerebrospinal Fluid
Cognitive Domain: Application
Difficulty Level: Medium

47. A substance that directly activates gene transcription is likely acting as a:
a. messenger ribonucleic acid.
b. polymorphism.
c. epigenetic stimulus.
d. transcription factor.
Ans: D
Answer Location: Genes and the Development and Physiological Processes of Cells
Learning Objective: Cerebral Blood Flow and Cerebrospinal Fluid
Cognitive Domain: Comprehension
Difficulty Level: Easy

48. Discovering that early life stress may cause polymorphisms that increase the risk of depression would be an example of:
a. epigenetics.
b. transcription factors.
c. a Mendelian disease.
d. ribosome transcription.
Ans: A
Answer Location: Genes and the Development and Physiological Processes of Cells
Learning Objective: Cerebral Blood Flow and Cerebrospinal Fluid
Cognitive Domain: Application
Difficulty Level: Hard

49. Which of the following is the study of mechanisms of gene expression not involving alternations to DNA sequences?

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a. Neurogenetics

b. Epigenetics

c. Transcription factors

d. Polymorphism

Ans: B

Answer Location: Genes and the Development and Physiological Processes of Cells

Learning Objective: Cerebral Blood Flow and Cerebrospinal Fluid

Cognitive Domain: Knowledge

Difficulty Level: Easy

50. _____ is the study of how genes support the function of neurons.

a. Functional genomics

b. Somatics

c. Epigenetics

d. Neurogenetics

Ans: D

Answer Location: Genes and the Development and Physiological Processes of Cells

Learning Objective: Cerebral Blood Flow and Cerebrospinal Fluid

Cognitive Domain: Knowledge

Difficulty Level: Easy

51. Discovering that someone has glial scars means suggests that:

a. the person had neurons that did not form correctly during neural development.

b. the person has a disease that affects myelin around axons.

c. the person had a past traumatic brain injury.

d. the person has a history of drug abuse.

Ans: C

Answer Location: From Actions to Effects: Glial Scars and Recovery from Brain Injury

Learning Objective: Genes and the Development and Physiological Processes of Cells

Cognitive Domain: Comprehension

Difficulty Level:

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52. Glial scars may impair recovery from brain injury because:

a. regenerating axons may be unable to regain previous connections through the site of injury.

b. they prevent axons from re-growing.

c. interneurons make inhibitory connections with damaged neurons.

d. oligodendrocytes fail to myelinate re-growing axons.

Ans: A

Answer Location: From Actions to Effects: Glial Scars and Recovery from Brain Injury

Learning Objective: Genes and the Development and Physiological Processes of Cells

Cognitive Domain: Comprehension

Difficulty Level: Medium

53. An experimental drug that reduces the release of chemicals that inhibit axon growth may:

a. inhibit the production of neurotrophins.

b. increasing glial scarring.

c. enhance the activity of reactive astrocytes.

d. improve recovery from traumatic brain injury.

Ans: D

Answer Location: From Actions to Effects: Glial Scars and Recovery from Brain Injury

Learning Objective: Genes and the Development and Physiological Processes of Cells

Cognitive Domain: Application

Difficulty Level: Medium

54. The inhibitory extracelluar matrix consists of chemicals that:

a. increase the activity of reactive astrocytes.

b. inhibit axon growth.

c. cause the release of neurotrophins.

d. act as transcription factors.

Ans: B

Answer Location: From Actions to Effects: Glial Scars and Recovery from Brain Injury

Learning Objective: Genes and the Development and Physiological Processes of Cells

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Cognitive Domain: Knowledge

Difficulty Level: Medium

55. _____ are chemicals that promote the growth and development of neurons.

a. Epigenetic markers

b. Neurotransmitters

c. Proteoglycans

d. Neurotrophins

Ans: D

Answer Location: From Actions to Effects: Glial Scars and Recovery from Brain Injury

Learning Objective: Genes and the Development and Physiological Processes of Cells

Cognitive Domain: Knowledge

Difficulty Level: Easy

56. The nervous system most dominant while relaxing is the:

a. extrapyramidal motor system.

b. sympathetic nervous system.

c. somatic nervous system.

d. parasympathetic nervous system.

Ans: D

Answer Location: The Autonomic Nervous System: Controlling Vital Functions

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Application

Difficulty Level: Easy

57. Which cells in the brain remove normal cellular waste?

a. Oligodendrocytes

b. Microglial cells

c. Astrocytes

d. Neurons

Ans: B

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Answer Location: Glial Cells: Facilitating Nervous System Functions
Learning Objective:Cells in the Nervous System
Cognitive Domain: Knowledge
Difficulty Level: Easy

58. All of the following describe the functions of astrocytes except:
a. astrocytes play a role in neurotransmission.
b. astrocytes respond to injury.
c. they form an insulating material around axons.
d. astrocytes form and maintain the blood-brain barrier.
Ans: C
Answer Location: Glial Cells: Facilitating Nervous System Functions
Learning Objective: Cells in the Nervous System
Cognitive Domain: Analysis
Difficulty Level: Medium

59. A scientist who wanted to determine how inflammation in the brain was occurring in a certain disorder would most likely investigate which of the following?
a. Oligodendrocytes
b. Reactive astrocytes
c. M2 microglial cells
d. M1 microglial cells
Ans: D
Answer Location: Glial Cells: Facilitating Nervous System Functions
Learning Objective: Cells in the Nervous System
Cognitive Domain: Application
Difficulty Level: Medium

60. The cerebellum is located in the:
a. forebrain.
b. hindbrain.

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c. midbrain.

d. frontal lobe.

Ans: B

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Hard

61. _____ are clusters of neuron cell bodies in the sympathetic and parasympathetic nervous system.

a. Basal ganglia

b. Neurotrophins

c. Ganglia

d. Nuclei

Ans: C

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Hard

62. What parts of a neuron are completely contained within a ganglion?

a. Dendrites and axon

b. Axon and soma

c. Dendrites and soma

d. None of these are correct.

Ans: C

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Hard

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63. Diminished release of acetylcholine from preganglionic sympathetic neurons would:

a. increase the activity of postganglionic sympathetic neurons.

b. reduce the activity of postganglionic sympathetic neurons.

c. decrease the activity of postganglionic parasympathetic neurons.

d. represent a general decline of autonomic nervous system activity.

Ans: B

Answer Location: The Autonomic Nervous System: Controlling Vital Functions

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Application

Difficulty Level: Hard

64. Which of the following would be most likely to increase heart rate?

a. Activation of preganglionic sympathetic neurons

b. Diminished activation of postganglionic sympathetic neurons

c. Activation of preganglionic parasympathetic neurons

d. Activation of postganglionic parasympathetic neurons

Ans: A

Answer Location: The Autonomic Nervous System: Controlling Vital Functions

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Application

Difficulty Level: Hard

65. Which cranial nerve receives sensory information from the heart, liver, and intestines?

a. Trigeminal nerve

b. Glossopharyngeal nerve

c. Hypoglossal nerve

d. Vagus nerve

Ans: D

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

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Difficulty Level: Hard

66. The midbrain contains the:

a. corpus callosum.

b. thalamus.

c. medulla.

d. inferior colliculus.

Ans: D

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Medium

67. Melatonin is released from the:

a. medulla.

b. hypothalamus.

c. pineal gland.

d. pituitary gland.

Ans: C

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Hard

68. A drug that reduces the activity of the amygdala would likely:

a. improve working memory.

b. cause aggressive behavior.

c. decrease anxiety.

d. cause a tremor.

Ans: C

Answer Location: The Central Nervous System

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Learning Objective: The Nervous System: Control of Behavior and Physiological Functions
Cognitive Domain: Application
Difficulty Level: Medium

69. Extrapyramidal side effects produced by antipsychotic drugs are similar to the symptoms of:
a. Alzheimer's disease.
b. Broca's Aphasia.
c. Myasthenia Gravis.
d. Parkinson's disease.
Ans: D
Answer Location: The Central Nervous System
Learning Objective: The Nervous System: Control of Behavior and Physiological Functions
Cognitive Domain: Knowledge
Difficulty Level: Hard

70. When a gene is activated, a specific DNA segment is unraveled and transcribed onto:
a. ribosomes.
b. transcription factors.
c. neurotrophins.
d. RNA.
Ans: D
Answer Location: Genes and the Development and Physiological Processes of Cells
Learning Objective: Cerebral Blood Flow and Cerebrospinal Fluid
Cognitive Domain: Knowledge
Difficulty Level: Easy

71. Cerebrospinal is located in the following structures except:
a. cerebral aqueduct.
b. ventricles.
c. meninges.
d. cerebral blood vessels.

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Ans: D

Answer Location: Cerebral Blood Flow and Cerebrospinal Fluid

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: 3

Difficulty Level: Easy

72. A genetic mutation caused by an error in replicating or repairing a gene is called:

a. cerebellar ataxia.

b. a Mendelian disease.

c. gene duplication.

d. a transcription factor.

Ans: C

Answer Location: Genes and the Development and Physiological Processes of Cells

Learning Objective: Cerebral Blood Flow and Cerebrospinal Fluid

Cognitive Domain: Knowledge

Difficulty Level: Hard

73. The axon hillock is located:

a. on dendrites.

b. on the soma.

c. in the synapse.

d. at the axon terminal.

Ans: B

Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Easy

74. Tight junctions along blood vessels in the brain are formed by:

a. microglial cells.

b. oligodendrocytes.

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c. neurons.

d. astrocytes.

Ans: D

Answer Location: Glial Cells: Facilitating Nervous System Functions

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Easy

75. Motorneurons release acetylcholine at:

a. postganglionic terminals.

b. basal ganglia synapses.

c. preganglionic terminals.

d. neuromuscular junctions.

Ans: D

Answer Location: The Somatic Nervous System: Delivering Motor Signals to Muscles and Sensory Signals to the Spinal Cord

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Medium

76. The hills on the surface of the brain are referred to as:

a. meninges.

b. sulci.

c. ventricles.

d. gyri.

Ans: D

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Easy

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77. The structure that meets the spinal cord in the hindbrain is the:

a. medulla.

b. cerebellum.

c. pons.

d. hypothalamus.

Ans: A

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Medium

78. Which of the following is not found in the limbic system?

a. Amygdala

b. Pons

c. Hippocampus

d. Cingulate cortex

Ans: B

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Easy

79. A substance that inhibits the activity of the cerebellum would be expected to:

a. impair memory.

b. cause inattention.

c. cause imbalance.

d. reduce cortical arousal.

Ans: C

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Application

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Difficulty Level: Easy

80. The reticular activating system includes all of the following structures except:

a. tegmentum.

b. thalamus.

c. reticular formation.

d. hippocampus.

Ans: D

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Medium

True/False

1. Relative to the central nervous system, motor neurons are referred to as afferent neurons.

Ans: False

Answer Location: Cells in the Nervous System

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Medium

2. Oligodendrocytes form and maintain the blood-brain barrier.

Ans: False

Answer Location: Glial Cells: Facilitating Nervous System Functions

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Easy

3. A disorder that damaged oligodendrocytes would be expected to impede neurotransmission.

Ans: True

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Answer Location: Glial Cells: Facilitating Nervous System Functions

Learning Objective: Cells in the Nervous System

Cognitive Domain: Comprehension

Difficulty Level: Medium

4. Responding to brain injury is an important function of astrocytes.

Ans: True

Answer Location: Glial Cells: Facilitating Nervous System Functions

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Medium

5. Sympathetic nervous system neurons contact muscle tissue at neuromuscular junctions.

Ans: False

Answer Location: The Peripheral Nervous System: Controlling and Responding to Physiological Processes in the Body

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Easy

6. The parasympathetic nervous system prepares the body for rigorous activity.

Ans: False

Answer Location: The Peripheral Nervous System: Controlling and Responding to Physiological Processes in the Body

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Easy

7. Damage to the hypothalamus may alter someone's motivation to eat.

Ans: True

Answer Location: The Central Nervous System

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Learning Objective: The Nervous System: Control of Behavior and Physiological Functions
Cognitive Domain: Comprehension
Difficulty Level: Easy

8. The nucleus accumbens facilitates fear and aggression.
Ans: False
Answer Location: The Central Nervous System
Learning Objective: The Nervous System: Control of Behavior and Physiological Functions
Cognitive Domain: Knowledge
Difficulty Level: Easy

9. The basal ganglia act to stabilize voluntary movements.
Ans: True
Answer Location: The Central Nervous System
Learning Objective: The Nervous System: Control of Behavior and Physiological Functions
Cognitive Domain: Knowledge
Difficulty Level: Easy

10. The pons is activated when someone startles.
Ans: True
Answer Location: The Central Nervous System
Learning Objective: The Nervous System: Control of Behavior and Physiological Functions
Cognitive Domain: Comprehension
Difficulty Level: Easy

11. The prefrontal cortex is important for working memory function.
Ans: True
Answer Location: The Central Nervous System
Learning Objective: The Nervous System: Control of Behavior and Physiological Functions
Cognitive Domain: Knowledge
Difficulty Level: Easy

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12. Damage to the hippocampus would likely cause impairments to long-term memory formation.
Ans: True
Answer Location: The Central Nervous System
Learning Objective: The Nervous System: Control of Behavior and Physiological Functions
Cognitive Domain: Comprehension
Difficulty Level: Easy

13. Diminished cerebral blood flow increases oxygen to neurons.
Ans: False
Answer Location: Cerebral Blood Flow and Cerebrospinal Fluid
Learning Objective: Cerebral Blood Flow and Cerebrospinal Fluid
Cognitive Domain: Comprehension
Difficulty Level: Easy

14. Transcription factors increase or decrease gene transcription.
Ans: True
Answer Location: Genes and the Development and Physiological Processes of Cells
Learning Objective: Cerebral Blood Flow and Cerebrospinal Fluid
Cognitive Domain: Knowledge
Difficulty Level: Easy

15. An inhibitory intracellular matrix releases neurotrophins to impair axon re-growth.
Ans: False
Answer Location: From Actions to Effects: Glial Scars and Recovery from Brain Injury
Learning Objective: Genes and the Development and Physiological Processes of Cells
Cognitive Domain: Comprehension
Difficulty Level: Medium

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Completion (Fill-in-the-Blank)

1. The _____ of a neuron receive information from other neurons.

Ans: dendrites

Answer Location: Neural Communication

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Easy

2. The term _____ refers to the components that comprise this connection.

Ans: synapse

Answer Location: Neural Communication

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Easy

3. _____ facilitates the movement of electrical impulses down an axon by serving as an insulating material.

Ans: Myelin

Answer Location: Glial Cells: Facilitating Nervous System Functions

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Medium

4. Astrocytes respond to injury in the brain through a process called _____.

Ans: gliosis

Answer Location: Glial Cells: Facilitating Nervous System Functions

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Easy

5. The _____ nervous system controls involuntary movements.

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Ans: autonomic

Answer Location: The Autonomic Nervous System: Controlling Vital Functions

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Easy

6. Severe damage to the _____ might cause a loss of control of heart pumping or breathing.

Ans: medulla

Brain stem

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Comprehension

Difficulty Level: Medium

7. The _____ maintains many physiological processes by motivating an organism's behavior.

Ans: hypothalamus

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Medium

8. Many drugs would be expected to produce rewarding effects by acting in the _____.

Ans: nucleus accumbens

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Comprehension

Difficulty Level: Easy

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9. The _____ lobe includes the *somatosensory cortex*, the structure responsible for processing touch information from the body

Ans: temporal

Answer Location: The Central Nervous System

Learning Objective: The Nervous System: Control of Behavior and Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Easy

10. _____ is the study of mechanisms of gene expression not involving alterations to DNA sequences.

Ans: epigenetics

Answer Location: Genes and the Development and Physiological Processes of Cells

Learning Objective: Cerebral Blood Flow and Cerebrospinal Fluid

Cognitive Domain: Knowledge

Difficulty Level:

Essay

1. List and describe the function of the main features of a neuron, as described in the textbook.

Ans: The primary features consist of dendrites, the soma, and the axon. Dendrites receive information from other cells, the soma includes the nucleus and supports the physiological process of the neuron, and the axons send information to other neurons. Students may also note the dendritic spines, axon hillock, and axon terminals.

Answer Location: Neural Communication

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Medium

2. Imagine that you are investigating two structures in the brain, labeled structure A and structure B. You find that some neurons originate in structure B and terminate in structure A, and vice

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versa. You also find that some neurons originate and terminate in the same structure. Relative to structure B, which neurons are afferent, efferent, and interneurons?

Ans: Those that project from structure B are efferent neurons, and those that project to structure B are afferent neurons. Neurons that remain within the same structure are interneurons.

Answer Location: Neural Communication

Learning Objective: Cells in the Nervous System

Cognitive Domain: Application

Difficulty Level: Medium

3. List the functions stated in the textbook for astrocytes.

Ans: Astrocytes form the blood-brain barrier, act at synapses during neurotransmission, and respond to injury.

Answer Location: Glial Cells: Facilitating Nervous System Functioning

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Easy

4. Compare and constrast the two types of microglial cells described in the textbook.

Ans: The two types of microglial cells are M1 and M2. While both remove normal cellular waste, M1 cells release chemicals that can promote inflammation and M2 cells release chemicals that can reduce inflammation.

Answer Location: Glial Cells: Facilitating Nervous System Functioning

Learning Objective: Cells in the Nervous System

Cognitive Domain: Knowledge

Difficulty Level: Medium

5. List and describe the organization hierarchy of the peripheral nervous system.

Ans: The peripheral nervous system has two systems: the somatic nervous system and the autonomic nervous system. The autonomic nervous has two subsystems: the sympathetic nervous system and the parasympathetic nervous system.

Aswer Location: The Peripheral Nervous System: Controlling and Responding to Physiological

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Learning Objective: The Nervous System: Control of Behavior and Physiological Functions
Cognitive Domain: Knowledge
Processes in the Body
Difficulty Level: Medium

6. List the three main divisions of the brain, as presented in the textbook, and note a major structure found in each division.
Ans: The divisions are the forebrain, midbrain, and the hindbrain. The forebrain includes the cerebral cortex, basal ganglia, thalamus, hypothalamus, among many other structures. The midbrain is most noted for the superior and inferior colliculus. The hindbrain includes the cerebellum, pons, medulla, among other structures.
Answer Location: The Central Nervous System
Learning Objective: The Nervous System: Control of Behavior and Physiological Functions
Cognitive Domain: Knowledge
Difficulty Level: Medium

7. List and describe a primary function of each lobe of the brain.
Ans: Frontal lobe, parietal lobe, occipital lobe, and the temporal lobe. Frontal lobe includes higher order cognitive processes (attention, working memory, planning for movements) and the primary motor cortex; the parietal lobe handles touch information, the occipital lobe is important for visual, and the temporal lobe handles auditory information and is important for speech and language comprehension.
Answer Location: The Central Nervous System
Learning Objective: The Nervous System: Control of Behavior and Physiological Functions
Cognitive Domain: Knowledge
Difficulty Level:

8. List and describe two functions for cerebrospinal fluid.
Ans: Cerebrospinal fluid (CSF) fills the meninges and acts to cushion the brain. CSF serves as a medium for nutrients and other chemicals to reach neurons.
Answer Location: Cerebral blood flow and cerebrospinal fluid

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Learning Objective: Cerebral Blood Flow and Cerebrospinal Fluid

Cognitive Domain: Knowledge

Difficulty Level: Easy

9. Describe how glial scars can interfere with recovery from brain injury.

Ans: Glial scars prevent damage axons from reconnecting with healthy neurons while the axons re-grow. Glial scars form an inhibitory intracellular matrix that releases chemicals to repel away regrowing axons.

Answer Location: From Actions to Effects: Glials Scars and Recovery from Brain Injury

Learning Objective: Genes and the Development and Physiological Processes of Cells

Cognitive Domain: Knowledge

Difficulty Level: Medium

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