

# Chapter 13

Student: \_\_\_\_\_

1. A reflex action:
  - A.is quick
  - B.requires adrenaline
  - C.is normally controlled consciously
  - D.has no protective value
  
2. Neurotransmitters are stored in synaptic vesicles in the:
  - A.neuron cell body
  - B.dendrite terminals
  - C.axon terminals
  - D.myelin sheath
  
3. The portion of the neuron that conducts impulses toward the cell body after receiving them from other neurons is the:
  - A.dendrite
  - B.axon
  - C.peripheral process
  
4. After stimulation, a neuron repolarizes by:
  - A.the outward movement of potassium ions (K<sup>+</sup>)
  - B.the generation of a second impulse
  - C.growing a myelin sheath
  - D.making ATP
  - E.generating an impulse in the opposite direction
  
5. The dorsal root of a spinal nerve contains:
  - A.motor neurons
  - B.interneurons
  - C.sensory neurons

6. Which of these is NOT true of the autonomic nervous system?
- A. It controls heartbeat, peristalsis, and gland secretion.
  - B. It is composed of sympathetic and parasympathetic systems.
  - C. It is composed only of fibers that have an inhibitory function on various organs of the body.
  - D. Impulses require two motor neurons to reach their destination.
7. The \_\_\_\_\_ system contributes to the functioning of the nervous system, and overall homeostasis, by delivering nutrients to nervous tissue.
- A. lymphatic
  - B. cardiovascular
  - C. urinary
  - D. muscular
8. The neuromodulator known as the natural painkiller which blocks the release of substance P is called:
- A. serotonin
  - B. caffeine
  - C. acetylcholine
  - D. endorphin
9. A neuron will generate an impulse, or "fire", when the membrane potential reaches:
- A. the refractory period
  - B. hyperpolarization
  - C. threshold
10. Sodium is pumped out of a neuron:
- A. by simple diffusion
  - B. by osmosis
  - C. by an expenditure of energy
  - D. when the cell is stimulated
  - E. only during the refractory period

11. Choose the correct pairing:
- A. white matter; cell bodies of neurons
  - B. gray matter; tracts of axons of neurons
  - C. white matter; tracts of dendrites of neurons
  - D. gray matter; cell bodies of neurons
12. The portion of the neuron that conducts impulses away from the cell body is the:
- A. dendrite
  - B. axon
  - C. peripheral process
13. The autonomic nervous system:
- A. regulates activities of cardiac and smooth muscles
  - B. has sympathetic and parasympathetic divisions
  - C. is a part of the peripheral nervous system
  - D. regulates activities of cardiac and smooth muscles and is a part of the peripheral nervous system
  - E. regulates activities of cardiac and smooth muscles, has sympathetic and parasympathetic divisions, and is a part of the peripheral nervous system
14. Which of the following is characterized by neurofibrillary tangles and the development of plaques?
- A. Alzheimer's
  - B. Parkinson's
15. The function of the myelin sheath is to:
- A. decrease the rate of impulse transmission
  - B. increase the rate of impulse transmission
16. There are \_\_\_\_ pairs of cranial nerves.
- A. 4
  - B. 5
  - C. 12
  - D. 31

17. An association area of the brain is:
- A. a motor area
  - B. a sensory area
  - C. both a motor and sensory area
  - D. a region of integration
18. There are \_\_\_\_ pairs of spinal nerves.
- A. 4
  - B. 5
  - C. 12
  - D. 31
19. Which of the following is the correct scientific name for marijuana?
- A. *Cannabis sativa*
  - B. *Cannabis delirium*
  - C. *Cannabis psychosi*
  - D. *Erythoxylon coca*
20. A reflex action:
- A. is an automatic, involuntary response
  - B. does not require the central nervous system
  - C. is normally controlled consciously
  - D. has no protective value
21. If a person has a spinal cord injury in their cervical region, they could have:
- A. paraplegia
  - B. quadriplegia
22. The central nervous system is composed of:
- A. nerves around the body
  - B. brain and spinal cord

23. Drinking alcohol causes what change in the body?
- A. pH of blood declines as it becomes acidic
  - B. Krebs cycle does not operate properly
  - C. fat accumulates in the liver; also, liver cells die
  - D. immune system functioning declines
  - E. All of the choices are correct.
24. Reflex centers for visual, auditory, and tactile responses are located in which part of the brain?
- A. midbrain
  - B. corpus callosum
  - C. cerebrum
  - D. medulla oblongata
  - E. cerebellum
25. In the axon, the nerve impulses normally travel:
- A. toward the cell body
  - B. away from the cell body
  - C. in both directions
  - D. away from the synapse
26. The summing up of excitatory and inhibitory signals is referred to as:
- A. long term potentiation
  - B. integration
  - C. all or none response
  - D. a resting potential
  - E. an action potential
27. Choose the INCORRECT statement.
- A. The cerebrum is the same as the cerebral hemispheres.
  - B. The cerebellum is the same thing as the cerebrum.
  - C. Broca's area is responsible for motor speech.
  - D. The premotor area organizes motor functions.
  - E. Association areas associate information.

28. Cirrhosis of the liver may be associated with:
- A.cocaine
  - B.alcohol
  - C.nicotine
29. Choose the CORRECT statement.
- A.Swellings of cell bodies in the CNS are ganglia.
  - B.Swellings of cell bodies in the PNS are nuclei.
  - C.Axons in the CNS are from nerves.
  - D.Axons in the CNS form tracts.
  - E.None of the choices are correct.
30. The frontal lobe is associated with:
- A.vision
  - B.understanding of speech
  - C.hearing
  - D.complex problem solving
31. The brain and spinal cord are referred to as the:
- A.CNS
  - B.PNS
32. Skill memory involves recall of:
- A.persons, events
  - B.numbers, words
  - C.motor activities
33. Which neurotransmitter is only active in the CNS?
- A.acetylcholine
  - B.norepinephrine
  - C.dopamine

34. Methamphetamine resembles amphetamine in structure. Methamphetamine has a \_\_\_\_\_ group, while amphetamine does not.
- A. THC
  - B. alkaloid
  - C. dopamine
  - D. serotonin
  - E. methyl
35. The primary motor area of the cortex is located:
- A. dorsal to the central sulcus
  - B. ventral to the central sulcus
36. The brain is protected by:
- A. cerebrospinal fluid
  - B. membranes called meninges
  - C. the skull
  - D. All of the choices are correct.
37. GABA is a(n):
- A. excitatory neurotransmitter
  - B. inhibitory neurotransmitter
  - C. neurotransmitter breakdown enzyme
  - D. neuromodulator
38. Integration is:
- A. performed by the CNS
  - B. motor output
  - C. sums up all the input received
  - D. both performed by the CNS which sums up all of the input received
39. At a synapse:
- A. synaptic vesicles fuse with the postsynaptic membrane after traveling along the synaptic cleft
  - B. synaptic vesicles fuse with the presynaptic membrane after traveling along the synaptic cleft
  - C. neurotransmitters diffuse across the synaptic cleft
  - D. neurotransmitters are actively transported across the synaptic cleft

40. If a person has a spinal cord injury in their thoracic region, they could have:
- A. paraplegia
  - B. quadriplegia
41. Why are most organs innervated by antagonistic parts of the autonomic system?
- A. A reserve neural supply is required.
  - B. This is an evolutionary relic.
  - C. One increases and one inhibits actions of the organ.
  - D. One is sensory and one is motor.
42. Which of these is the best analysis of the function of the autonomic nervous system?
- A. Conscious control of muscle movements is coordinated with sensory stimuli.
  - B. It controls muscle movements that are primarily voluntary in nature.
  - C. It controls involuntary muscle movements and internal organ activities.
  - D. It controls voluntary muscle movements directed by unconscious stimuli.
43. Which of the following is best associated with motor control?
- A. medulla and hypothalamus
  - B. midbrain and pons
  - C. frontal lobe and cerebellum
  - D. thalamus and parietal lobe
44. Caffeine interferes with the effects of inhibitory transmitters in the brain and so is categorized as a:
- A. neurotransmitter breakdown enzyme
  - B. neurotransmitter stimulant
  - C. neuromodulator
  - D. neuroregulator
45. Which of the following is derived from tobacco products?
- A. cocaine
  - B. alcohol
  - C. nicotine



46. To prevent continuous stimulation of postsynaptic neurons, neurotransmitters usually are:
- A.reformed
  - B.inactivated by enzymes
  - C.bonded to calcium ions
  - D.absorbed into the postsynaptic membrane
47. Choose the CORRECT statement.
- A.Long-term potentiation involves the hippocampus.
  - B.The limbic system integrates emotions and higher thought.
  - C.Memory is the ability to recall information.
  - D.Learning is retaining past memories.
  - E.All of the choices are correct.
48. Shallow grooves divide the brain into two hemispheres. These grooves are known as:
- A.nodes of Ranvier
  - B.synapses
  - C.meninges
  - D.corpus callosi
  - E.sulci
49. Which of the following does the hypothalamus control?
- A.muscle coordination
  - B.dreaming
  - C.imagination
  - D.homeostasis
50. Transmission of a nerve impulse along one neuron to another neuron is dependent on:
- A.the presence of ions
  - B.a neurotransmitter substance
  - C.a synapse
  - D.All of the choices are correct.

51. Methamphetamine is also called:
- A. speed
  - B. crystal methamphetamine
  - C. ice
  - D. All of the choices are correct.
52. Which type of neuron functions as a connection between neurons?
- A. sensory neuron
  - B. interneuron
  - C. motor neuron
53. Which cell type functions to transmit information?
- A. neuron
  - B. neuroglia
  - C. neuroma
54. Which of the following is a gap in the myelin sheath?
- A. node of Ranvier
  - B. nerve impulse
  - C. resting potential
55. Which neurotransmitter is a heart stimulant?
- A. acetylcholine
  - B. norepinephrine
  - C. dopamine
56. Consciousness is best associated with the:
- A. whole brain
  - B. frontal lobe only
  - C. cerebrum
  - D. whole central nervous system

57. Which of these is mismatched?
- A.CNS-brain and spinal cord
  - B.PNS-peripheral nervous system
  - C.CNS-autonomic system
  - D.PNS-sympathetic system
58. The primary functions of the spinal cord are:
- A.intelligence and memory
  - B.speech, taste, smell, vision, hearing, and touch
  - C.simple reflexes and a link between brain and body
  - D.to control muscle activity and maintain balance
59. Which of the following is the correct pairing?
- A.diencephalon; thalamus, hypothalamus
  - B.brain stem; midbrain, pons, medulla oblongata
  - C.reticular formation; network of neurons extending the length of the brain stem
  - D.All of the choices are correct.
60. Which of the following statements is true?
- A.The left side of the cerebrum controls the right side of the body.
  - B.The right side of the cerebrum controls the left side of the body.
  - C.The two cerebral hemispheres share information via the corpus callosum.
  - D.All of the choices are correct.

# Chapter 13 Key

1. A reflex action:

- A** is quick
- b. requires adrenaline
- c. is normally controlled consciously
- d. has no protective value

*Mader - 013 Chapter... #83*

2. Neurotransmitters are stored in synaptic vesicles in the:

- a. neuron cell body
- b. dendrite terminals
- C** axon terminals
- d. myelin sheath

*Mader - 013 Chapter... #30*

3. The portion of the neuron that conducts impulses toward the cell body after receiving them from other neurons is the:

- A** dendrite
- b. axon
- c. peripheral process

*Mader - 013 Chapter... #16*

4. After stimulation, a neuron repolarizes by:

- A** the outward movement of potassium ions ( $K^+$ )
- b. the generation of a second impulse
- c. growing a myelin sheath
- d. making ATP
- e. generating an impulse in the opposite direction

*Mader - 013 Chapter... #26*

5. The dorsal root of a spinal nerve contains:

- a. motor neurons
- b. interneurons
- C** sensory neurons

*Mader - 013 Chapter... #76*

6. Which of these is NOT true of the autonomic nervous system?

- a. It controls heartbeat, peristalsis, and gland secretion.
- b. It is composed of sympathetic and parasympathetic systems.
- C** It is composed only of fibers that have an inhibitory function on various organs of the body.
- d. Impulses require two motor neurons to reach their destination.

*Mader - 013 Chapter... #96*

7. The \_\_\_\_\_ system contributes to the functioning of the nervous system, and overall homeostasis, by delivering nutrients to nervous tissue.

- a. lymphatic
- B** cardiovascular
- c. urinary
- d. muscular

*Mader - 013 Chapter... #94*

8. The neuromodulator known as the natural painkiller which blocks the release of substance P is called:

- a. serotonin
- b. caffeine
- c. acetylcholine
- D** endorphin

*Mader - 013 Chapter... #118*

9. A neuron will generate an impulse, or "fire", when the membrane potential reaches:

- a. the refractory period
- b. hyperpolarization
- C** threshold

*Mader - 013 Chapter... #20*

10. Sodium is pumped out of a neuron:
- a. by simple diffusion
  - b. by osmosis
  - C** by an expenditure of energy
  - d. when the cell is stimulated
  - e. only during the refractory period

*Mader - 013 Chapter... #25*

11. Choose the correct pairing:
- a. white matter; cell bodies of neurons
  - b. gray matter; tracts of axons of neurons
  - c. white matter; tracts of dendrites of neurons
  - D** gray matter; cell bodies of neurons

*Mader - 013 Chapter... #35*

12. The portion of the neuron that conducts impulses away from the cell body is the:
- a. dendrite
  - B** axon
  - c. peripheral process

*Mader - 013 Chapter... #15*

13. The autonomic nervous system:
- a. regulates activities of cardiac and smooth muscles
  - b. has sympathetic and parasympathetic divisions
  - c. is a part of the peripheral nervous system
  - d. regulates activities of cardiac and smooth muscles and is a part of the peripheral nervous system
  - E** regulates activities of cardiac and smooth muscles, has sympathetic and parasympathetic divisions, and is a part of the peripheral nervous system

*Mader - 013 Chapter... #47*

14. Which of the following is characterized by neurofibrillary tangles and the development of plaques?
- A** Alzheimer's
  - b. Parkinson's

*Mader - 013 Chapter... #92*

15. The function of the myelin sheath is to:
- a. decrease the rate of impulse transmission
  - B** increase the rate of impulse transmission

*Mader - 013 Chapter... #13*

16. There are \_\_\_\_ pairs of cranial nerves.
- a. 4
  - b. 5
  - C** 12
  - d. 31

*Mader - 013 Chapter... #109*

17. An association area of the brain is:
- a. a motor area
  - b. a sensory area
  - c. both a motor and sensory area
  - D** a region of integration

*Mader - 013 Chapter... #63*

18. There are \_\_\_\_ pairs of spinal nerves.
- a. 4
  - b. 5
  - c. 12
  - D** 31

*Mader - 013 Chapter... #108*

19. Which of the following is the correct scientific name for marijuana?
- A** *Cannabis sativa*
  - b. *Cannabis delirium*
  - c. *Cannabis psychosi*
  - d. *Erythoxylon coca*

*Mader - 013 Chapter... #113*

20. A reflex action:

- A** is an automatic, involuntary response
- b. does not require the central nervous system
- c. is normally controlled consciously
- d. has no protective value

*Mader - 013 Chapter... #84*

21. If a person has a spinal cord injury in their cervical region, they could have:

- a. paraplegia
- B** quadriplegia

*Mader - 013 Chapter... #101*

22. The central nervous system is composed of:

- a. nerves around the body
- B** brain and spinal cord

*Mader - 013 Chapter... #102*

23. Drinking alcohol causes what change in the body?

- a. pH of blood declines as it becomes acidic
- b. Krebs cycle does not operate properly
- c. fat accumulates in the liver; also, liver cells die
- d. immune system functioning declines
- E** All of the choices are correct.

*Mader - 013 Chapter... #91*

24. Reflex centers for visual, auditory, and tactile responses are located in which part of the brain?

- A** midbrain
- b. corpus callosum
- c. cerebrum
- d. medulla oblongata
- e. cerebellum

*Mader - 013 Chapter... #51*



25. In the axon, the nerve impulses normally travel:
- a. toward the cell body
  - B** away from the cell body
  - c. in both directions
  - d. away from the synapse

*Mader - 013 Chapter... #27*

26. The summing up of excitatory and inhibitory signals is referred to as:
- a. long term potentiation
  - B** integration
  - c. all or none response
  - d. a resting potential
  - e. an action potential

*Mader - 013 Chapter... #104*

27. Choose the INCORRECT statement.
- a. The cerebrum is the same as the cerebral hemispheres.
  - B** The cerebellum is the same thing as the cerebrum.
  - c. Broca's area is responsible for motor speech.
  - d. The premotor area organizes motor functions.
  - e. Association areas associate information.

*Mader - 013 Chapter... #38*

28. Cirrhosis of the liver may be associated with:
- a. cocaine
  - B** alcohol
  - c. nicotine

*Mader - 013 Chapter... #86*

29. Choose the CORRECT statement.
- a. Swellings of cell bodies in the CNS are ganglia.
  - b. Swellings of cell bodies in the PNS are nuclei.
  - c. Axons in the CNS are from nerves.
  - D** Axons in the CNS form tracts.
  - e. None of the choices are correct.

*Mader - 013 Chapter... #74*

30. The frontal lobe is associated with:
- a. vision
  - b. understanding of speech
  - c. hearing
  - D** complex problem solving

*Mader - 013 Chapter... #66*

31. The brain and spinal cord are referred to as the:
- A** CNS
  - b. PNS

*Mader - 013 Chapter... #1*

32. Skill memory involves recall of:
- a. persons, events
  - b. numbers, words
  - C** motor activities

*Mader - 013 Chapter... #68*

33. Which neurotransmitter is only active in the CNS?
- a. acetylcholine
  - b. norepinephrine
  - C** dopamine

*Mader - 013 Chapter... #99*

34. Methamphetamine resembles amphetamine in structure. Methamphetamine has a \_\_\_\_ group, while amphetamine does not.
- a. THC
  - b. alkaloid
  - c. dopamine
  - d. serotonin
  - E methyl**

*Mader - 013 Chapter... #114*

35. The primary motor area of the cortex is located:
- a. dorsal to the central sulcus
  - B ventral to the central sulcus**

*Mader - 013 Chapter... #37*

36. The brain is protected by:
- a. cerebrospinal fluid
  - b. membranes called meninges
  - c. the skull
  - D All of the choices are correct.**

*Mader - 013 Chapter... #33*

37. GABA is a(n):
- a. excitatory neurotransmitter
  - B inhibitory neurotransmitter**
  - c. neurotransmitter breakdown enzyme
  - d. neuromodulator

*Mader - 013 Chapter... #116*

38. Integration is:
- a. performed by the CNS
  - b. motor output
  - c. sums up all the input received
  - D both performed by the CNS which sums up all of the input received**

*Mader - 013 Chapter... #2*

39. At a synapse:
- a. synaptic vesicles fuse with the postsynaptic membrane after traveling along the synaptic cleft
  - b. synaptic vesicles fuse with the presynaptic membrane after traveling along the synaptic cleft
  - C** neurotransmitters diffuse across the synaptic cleft
  - d. neurotransmitters are actively transported across the synaptic cleft

*Mader - 013 Chapter... #95*

40. If a person has a spinal cord injury in their thoracic region, they could have:
- A** paraplegia
  - b. quadriplegia

*Mader - 013 Chapter... #75*

41. Why are most organs innervated by antagonistic parts of the autonomic system?
- a. A reserve neural supply is required.
  - b. This is an evolutionary relic.
  - C** One increases and one inhibits actions of the organ.
  - d. One is sensory and one is motor.

*Mader - 013 Chapter... #46*

42. Which of these is the best analysis of the function of the autonomic nervous system?
- a. Conscious control of muscle movements is coordinated with sensory stimuli.
  - b. It controls muscle movements that are primarily voluntary in nature.
  - C** It controls involuntary muscle movements and internal organ activities.
  - d. It controls voluntary muscle movements directed by unconscious stimuli.

*Mader - 013 Chapter... #97*

43. Which of the following is best associated with motor control?
- a. medulla and hypothalamus
  - b. midbrain and pons
  - C** frontal lobe and cerebellum
  - d. thalamus and parietal lobe

*Mader - 013 Chapter... #60*

44. Caffeine interferes with the effects of inhibitory transmitters in the brain and so is categorized as a:
- a. neurotransmitter breakdown enzyme
  - b. neurotransmitter stimulant
  - C** neuromodulator
  - d. neuroregulator

*Mader - 013 Chapter... #117*

45. Which of the following is derived from tobacco products?
- a. cocaine
  - b. alcohol
  - C** nicotine

*Mader - 013 Chapter... #85*

46. To prevent continuous stimulation of postsynaptic neurons, neurotransmitters usually are:
- a. reformed
  - B** inactivated by enzymes
  - c. bonded to calcium ions
  - d. absorbed into the postsynaptic membrane

*Mader - 013 Chapter... #31*

47. Choose the CORRECT statement.
- a. Long-term potentiation involves the hippocampus.
  - b. The limbic system integrates emotions and higher thought.
  - c. Memory is the ability to recall information.
  - d. Learning is retaining past memories.
  - E** All of the choices are correct.

*Mader - 013 Chapter... #73*

48. Shallow grooves divide the brain into two hemispheres. These grooves are known as:
- a. nodes of Ranvier
  - b. synapses
  - c. meninges
  - d. corpus callosi
  - E** sulci

*Mader - 013 Chapter... #106*

49. Which of the following does the hypothalamus control?
- a. muscle coordination
  - b. dreaming
  - c. imagination
  - D** homeostasis

*Mader - 013 Chapter... #57*

50. Transmission of a nerve impulse along one neuron to another neuron is dependent on:
- a. the presence of ions
  - b. a neurotransmitter substance
  - c. a synapse
  - D** All of the choices are correct.

*Mader - 013 Chapter... #28*

51. Methamphetamine is also called:
- a. speed
  - b. crystal methamphetamine
  - c. ice
  - D** All of the choices are correct.

*Mader - 013 Chapter... #112*

52. Which type of neuron functions as a connection between neurons?
- a. sensory neuron
  - B** interneuron
  - c. motor neuron

*Mader - 013 Chapter... #6*

53. Which cell type functions to transmit information?
- A** neuron
  - b. neuroglia
  - c. neuroma

*Mader - 013 Chapter... #3*

54. Which of the following is a gap in the myelin sheath?

- A** node of Ranvier
- b. nerve impulse
- c. resting potential

*Mader - 013 Chapter... #8*

55. Which neurotransmitter is a heart stimulant?

- a. acetylcholine
- B** norepinephrine
- c. dopamine

*Mader - 013 Chapter... #100*

56. Consciousness is best associated with the:

- a. whole brain
- b. frontal lobe only
- C** cerebrum
- d. whole central nervous system

*Mader - 013 Chapter... #62*

57. Which of these is mismatched?

- a. CNS-brain and spinal cord
- b. PNS-peripheral nervous system
- C** CNS-autonomic system
- d. PNS-sympathetic system

*Mader - 013 Chapter... #43*

58. The primary functions of the spinal cord are:

- a. intelligence and memory
- b. speech, taste, smell, vision, hearing, and touch
- C** simple reflexes and a link between brain and body
- d. to control muscle activity and maintain balance

*Mader - 013 Chapter... #44*

59. Which of the following is the correct pairing?
- a. diencephalon; thalamus, hypothalamus
  - b. brain stem; midbrain, pons, medulla oblongata
  - c. reticular formation; network of neurons extending the length of the brain stem
  - D** All of the choices are correct.

*Mader - 013 Chapter... #42*

60. Which of the following statements is true?
- a. The left side of the cerebrum controls the right side of the body.
  - b. The right side of the cerebrum controls the left side of the body.
  - c. The two cerebral hemispheres share information via the corpus callosum.
  - D** All of the choices are correct.

*Mader - 013 Chapter... #65*



# Chapter 13 Summary

<i>Category</i>	<i># of Questions</i>
Mader - 013 Chapter...	60