

## Life; Ch. 15 Test; Nervous System

### Multiple Choice

*Identify the choice that best completes the statement or answers the question.*

- \_\_\_\_\_ 1. When the nervous system makes you feel hungry or thirsty, what body process is it helping to carry out?
  - a. delivering oxygen to cells
  - b. maintaining homeostasis
  - c. moving the body
  - d. supporting the body
- \_\_\_\_\_ 2. A change or signal in the environment that can make an organism react is called a(n)
  - a. stimulus.
  - b. reaction.
  - c. impulse.
  - d. response.
- \_\_\_\_\_ 3. Suppose that you close a window because you notice that rain is falling. Your action in closing the window is a(n)
  - a. involuntary reaction.
  - b. depressant.
  - c. stimulus.
  - d. response.
- \_\_\_\_\_ 4. What part of a neuron carries nerve impulses away from the cell body?
  - a. axon
  - b. synapse
  - c. dendrite
  - d. nucleus
- \_\_\_\_\_ 5. A motor neuron sends an impulse to
  - a. a muscle or gland.
  - b. a sensory neuron.
  - c. an interneuron.
  - d. another motor neuron.
- \_\_\_\_\_ 6. A synapse is the space between
  - a. one cell and another cell.
  - b. an axon and the cell body.
  - c. a dendrite and the cell body.
  - d. an axon and the structure that receives the nerve impulse.
- \_\_\_\_\_ 7. The thick column of nerve tissue that links the brain to most of the nerves in the peripheral nervous system is the
  - a. brain.
  - b. spinal cord.
  - c. cerebellum.
  - d. cornea.
- \_\_\_\_\_ 8. Which activity does your cerebrum control?

- a. remembering equations that you learn in class while taking a math test
- b. breathing as you sleep
- c. keeping your balance as you walk across a rocky seashore
- d. an increase in heart rate after running a race

\_\_\_\_\_ 9. The brain and spinal cord make up the

- a. central nervous system.
- b. peripheral nervous system.
- c. somatic nervous system.
- d. autonomic nervous system.

\_\_\_\_\_ 10. A spinal nerve is made of

- a. sensory neurons only.
- b. interneurons only.
- c. both sensory neurons and motor neurons.
- d. both interneurons and motor neurons.

\_\_\_\_\_ 11. Turning on the television is an action controlled by

- a. a reflex pathway.
- b. the brain stem.
- c. the autonomic nervous system.
- d. the somatic nervous system.

\_\_\_\_\_ 12. An automatic response of the body that occurs very rapidly and without conscious control is called a(n)

- a. stimulant.
- b. interneuron.
- c. reflex.
- d. reaction.

\_\_\_\_\_ 13. The three regions that make up the brain include the cerebrum, cerebellum, and

- a. senses.
- b. brain stem.
- c. spinal cord.
- d. retina.

\_\_\_\_\_ 14. In some reflex actions, skeletal muscles contract without the involvement of

- a. motor neurons.
- b. interneurons.
- c. the spinal cord.
- d. the brain.

\_\_\_\_\_ 15. A bruise-like injury of the brain is called

- a. a stimulant.
- b. a concussion.
- c. an inhalant.
- d. paralysis.

\_\_\_\_\_ 16. Spinal cord injuries can result in

- a. concussion.
- b. paralysis.
- c. a reflex.
- d. farsightedness.

- \_\_\_\_\_ 17. The pupil of a person's eye is likely to become smaller when the
- object viewed is moving.
  - other eye is closed.
  - person moves from a dim room into bright sunlight.
  - person moves from bright sunlight into a dim room.
- \_\_\_\_\_ 18. Nearsightedness and farsightedness are caused by
- a defect in the shape of the eyeball.
  - a defect in the structure of the retina.
  - the inability of the iris to change size.
  - damage to receptor cells in the retina.
- \_\_\_\_\_ 19. Because of the way in which the lens of the eye bends light rays, the image produced by the lens is
- black and white.
  - usually blurred.
  - right side up.
  - upside down.
- \_\_\_\_\_ 20. Cone cells enable you to see
- colors.
  - black and white.
  - at night.
  - nearby objects.
- \_\_\_\_\_ 21. What produces sound?
- light waves
  - vibrating material
  - chemicals in the air
  - rods and cones
- \_\_\_\_\_ 22. What structure passes sound vibrations to the cochlea?
- eardrum
  - auditory nerve
  - stirrup
  - ear canal
- \_\_\_\_\_ 23. Based on the fact that dogs can move their external ears, you could conclude that dogs
- have a poor sense of hearing because the external ear might sometimes block the inner ear.
  - have an inner ear with a very different structure from the inner ear of a human.
  - might have a keener sense of hearing, since they are able to move their external ears to capture faint sounds.
  - are less sensitive to sound vibrations because sound waves might not travel through the skin of the exterior ears.
- \_\_\_\_\_ 24. A gymnast on a balance beam is able to maintain balance because of her
- cerebrum and semicircular canals.
  - brain stem and cochlea.
  - cerebellum and eardrum.
  - cerebellum and semicircular canals.
- \_\_\_\_\_ 25. The senses of smell and taste both detect
- chemicals.

- b. waves.
  - c. the semicircular canals.
  - d. the optic nerve.
- \_\_\_\_\_ 26. Pain is an important sensation, because it
- a. is unpleasant.
  - b. helps the immune system function.
  - c. can alert the body to danger.
  - d. is a depressant.
- \_\_\_\_\_ 27. When drug addicts stop using a drug, they may experience withdrawal because
- a. the drug has damaged their kidneys.
  - b. they have been infected by HIV.
  - c. their bodies have become physically dependent on the drug.
  - d. the drug has made them nervous.
- \_\_\_\_\_ 28. What kind of drug is alcohol?
- a. anabolic steroid
  - b. depressant
  - c. stimulant
  - d. inhalant
- \_\_\_\_\_ 29. Drugs that slow down the activity of the central nervous system are called
- a. anabolic steroids.
  - b. hallucinogens.
  - c. stimulants.
  - d. depressants.
- \_\_\_\_\_ 30. BAC is a measurement of
- a. how fast a person reacts after drinking alcohol.
  - b. how long a person has been drinking alcohol.
  - c. the concentration of alcohol in the blood.
  - d. the number of alcohol deaths in a state.

### Modified True/False

*Indicate whether the statement is true or false. If false, change the identified word or phrase to make the statement true.*

- \_\_\_\_\_ 31. The body's reaction to a change in the environment is a response. \_\_\_\_\_
- \_\_\_\_\_ 32. A(n) axon carries impulses toward the nerve cell body. \_\_\_\_\_
- \_\_\_\_\_ 33. The peripheral nervous system is composed of the brain and the spinal cord.  
\_\_\_\_\_
- \_\_\_\_\_ 34. Voluntary actions are controlled by the autonomic nervous system. \_\_\_\_\_
- \_\_\_\_\_ 35. A reflex is an automatic response that occurs very rapidly. \_\_\_\_\_
- \_\_\_\_\_ 36. The retina contains the eye's light-sensitive cells. \_\_\_\_\_
- \_\_\_\_\_ 37. Fluid in the semicircular canals stimulates impulses to the brain to maintain balance.  
\_\_\_\_\_

- \_\_\_\_ 38. Taste lenses on your tongue respond to chemicals in food. \_\_\_\_\_
- \_\_\_\_ 39. Receptors for pressure are found deep in the dermis. \_\_\_\_\_
- \_\_\_\_ 40. Caffeine is called a depressant because it speeds up body processes.  
\_\_\_\_\_

### **Completion**

*Complete each statement.*

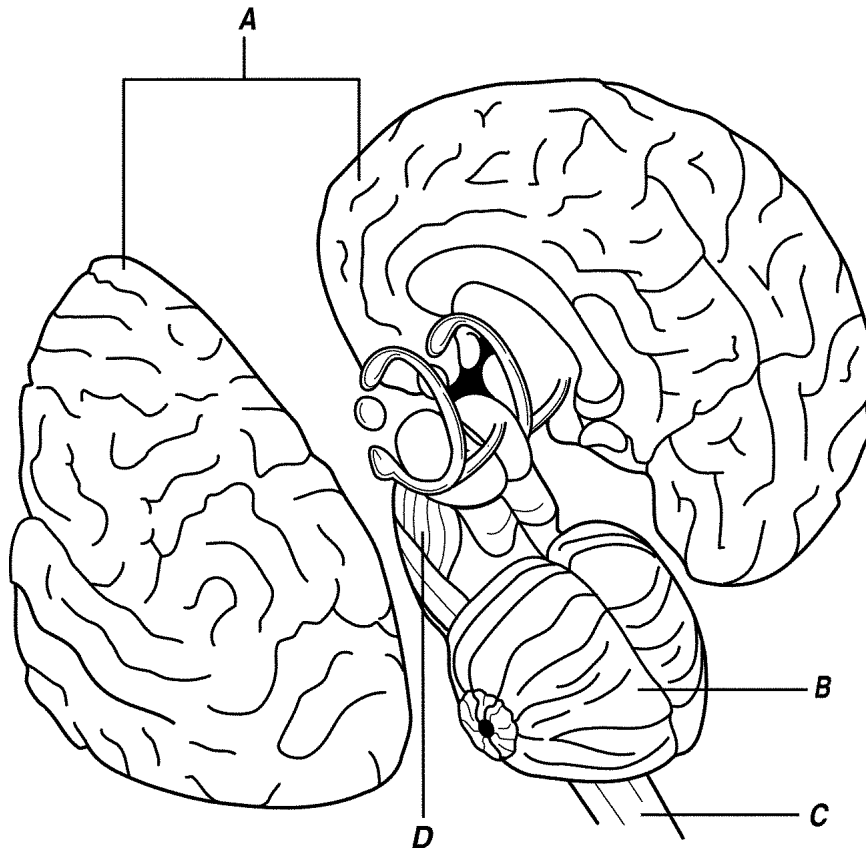
41. The traffic light turns green, and the driver steps on the gas pedal to make the car move forward. The green traffic light acted as a(n) \_\_\_\_\_ that caused a response in the driver.
42. One function of the nervous system is to maintain \_\_\_\_\_, or stability within the body.
43. The type of neurons known as \_\_\_\_\_ neurons pick up stimuli from the external or internal environment and convert those stimuli to nerve impulses.
44. A muscle contracts in response to an impulse carried by the type of neuron known as a(n) \_\_\_\_\_ neuron.
45. In order for a nerve impulse to pass from an axon tip to the next structure, it must cross a space called a(n) \_\_\_\_\_.
46. The junction where one neuron can transfer an impulse to another structure is called a(n) \_\_\_\_\_.
47. The part of the brain that controls balance is the \_\_\_\_\_.
48. The peripheral nervous system consists of \_\_\_\_\_ that link the central nervous system with all parts of the body.
49. If you accidentally touch a hot pan, you immediately jerk your hand away without thinking, before you even feel pain. This type of response is known as a(n) \_\_\_\_\_.
50. Each specific \_\_\_\_\_ organ picks up a different kind of information about the environment.
51. The \_\_\_\_\_ of the eye bends light rays and focuses them.
52. Eyes convert light into \_\_\_\_\_ that travel through the optic nerves to the brain.
53. Sound waves travel down the ear canal and strike the \_\_\_\_\_, causing it to vibrate and to pass the vibrations on to small bones in the middle ear.
54. In the part of the inner ear called the \_\_\_\_\_, receptors convert sound vibrations into nerve impulses.
55. The flavor of food is influenced by the senses of smell and \_\_\_\_\_.
56. The \_\_\_\_\_ is the organ associated with the sense of touch.

57. Many commonly abused drugs are dangerous because they act on the \_\_\_\_\_, which controls mood and thought.
58. A person who needs larger and larger amounts of a drug to get the same effect has reached the state of \_\_\_\_\_ to the drug.
59. A person who is physically addicted to and emotionally dependent on alcohol has the disease called \_\_\_\_\_.
60. Long-term alcohol abuse can damage cells in the brain and the \_\_\_\_\_.

### Short Answer

*Use the diagram to answer each question.*

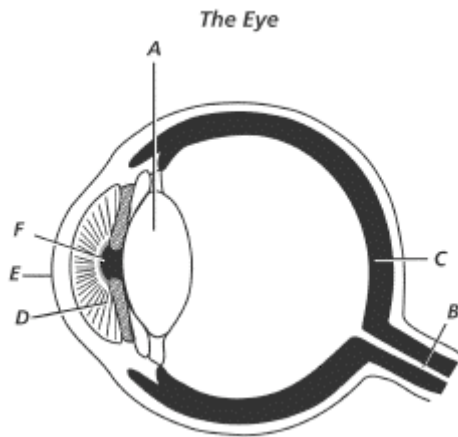
**The Brain**



61. What part of the brain is indicated by A? Identify three functions of structure A.
62. What part of the brain is indicated by B? What is its function?
63. Explain how parts A and B work together to enable a skater to glide smoothly across the ice.
64. What part of the brain is indicated by D? What is its function?

65. What is the role of the brain in enabling you to hear? What part of the brain — A, B, C, or D — is involved in hearing?
66. What part of the central nervous system is indicated by C? What is its function?

*Use the diagram to answer each question.*



67. Identify structure A and describe its function.
68. Identify structures D and F. How are these structures related to each other?
69. Identify structure B. Explain what would happen if this structure were damaged.
70. Identify structure E and describe its function.
71. Identify structure C and describe its function.
72. When images focus in front of structure C, what condition results? How does this condition affect people's vision?

## Essay

73. State the three main parts of a neuron and describe how an impulse travels through a neuron.
74. Name the two divisions of the peripheral nervous system and explain the difference between the functions of the two divisions.
75. Describe two actions that help prevent injury to the brain and spinal cord.
76. Explain what farsightedness is and what causes it.
77. Describe the process by which a person hears a sound. Begin with sound waves entering the ear and end with nerve impulses reaching the brain.
78. A person suffers a concussion that affects the cerebellum for several days. Explain how the person's nervous system would be affected and what symptoms the person might experience.

79. Compare and contrast the effects of anabolic steroids and alcohol on the body. Give three reasons why each drug is dangerous.
80. Many food products contain synthetic chemicals with strong aromas. Explain why manufacturers would add these chemicals to their products.



## Life; Ch. 15 Test; Nervous System

### Answer Section

#### MULTIPLE CHOICE

1. ANS: B PTS: 1 DIF: L2  
OBJ: CaLS.15.1.1 Identify the immediate and long-term effects of drug abuse.  
STA: S 7.5.b BLM: comprehension
2. ANS: A PTS: 1 DIF: L1  
OBJ: CaLS.15.1.1 Identify the immediate and long-term effects of drug abuse.  
STA: S 7.5.b BLM: knowledge
3. ANS: D PTS: 1 DIF: L2  
OBJ: CaLS.15.1.1 Identify the immediate and long-term effects of drug abuse.  
STA: S 7.5.b BLM: application
4. ANS: A PTS: 1 DIF: L1  
OBJ: CaLS.15.1.2 Describe the structure of a neuron and the kinds of neurons found in the body.  
STA: S 7.5.b BLM: knowledge
5. ANS: A PTS: 1 DIF: L1  
OBJ: CaLS.15.1.2 Describe the structure of a neuron and the kinds of neurons found in the body.  
STA: S 7.5.a BLM: knowledge
6. ANS: D PTS: 1 DIF: L1  
OBJ: CaLS.15.1.3 Explain how nerve impulses travel from one neuron to another.  
STA: S 7.5.a BLM: knowledge
7. ANS: B PTS: 1 DIF: L1  
OBJ: CaLS.15.2.1 Describe the structures and functions of the central nervous system.  
STA: S 7.5.b BLM: knowledge
8. ANS: A PTS: 1 DIF: L2  
OBJ: CaLS.15.2.1 Describe the structures and functions of the central nervous system.  
STA: S 7.5.b BLM: comprehension
9. ANS: A PTS: 1 DIF: L1  
OBJ: CaLS.15.2.1 Describe the structures and functions of the central nervous system.  
STA: S 7.5.b BLM: knowledge
10. ANS: C PTS: 1 DIF: L2  
OBJ: CaLS.15.2.2 Describe the structures and functions of the peripheral nervous system.  
STA: S 7.5.b BLM: comprehension
11. ANS: D PTS: 1 DIF: L2  
OBJ: CaLS.15.2.2 Describe the structures and functions of the peripheral nervous system.  
STA: S 7.5.b BLM: application
12. ANS: C PTS: 1 DIF: L1  
OBJ: CaLS.15.2.2 Describe the structures and functions of the peripheral nervous system.  
STA: S 7.5.b BLM: knowledge
13. ANS: B PTS: 1 DIF: L1  
OBJ: CaLS.15.2.2 Describe the structures and functions of the peripheral nervous system.  
STA: S 7.5.b BLM: knowledge

14. ANS: D PTS: 1 DIF: L2  
OBJ: CaLS.15.2.3 Explain what a reflex is. STA: S 7.5.b  
BLM: comprehension
15. ANS: B PTS: 1 DIF: L1  
OBJ: CaLS.15.2.4 Identify two ways in which the nervous system can be injured.  
STA: S 7.5.b BLM: knowledge
16. ANS: B PTS: 1 DIF: L1  
OBJ: CaLS.15.2.4 Identify two ways in which the nervous system can be injured.  
STA: S 7.5.b BLM: knowledge
17. ANS: C PTS: 1 DIF: L2  
OBJ: CaLS.15.3.1 Explain how the eyes sense light. STA: S 7.5.g  
BLM: application
18. ANS: A PTS: 1 DIF: L2  
OBJ: CaLS.15.3.1 Explain how the eyes sense light. STA: S 7.5.g  
BLM: comprehension
19. ANS: D PTS: 1 DIF: L2  
OBJ: CaLS.15.3.1 Explain how the eyes sense light. STA: S 7.5.g  
BLM: comprehension
20. ANS: A PTS: 1 DIF: L1  
OBJ: CaLS.15.3.1 Explain how the eyes sense light. STA: S 7.5.g  
BLM: knowledge
21. ANS: B PTS: 1 DIF: L1  
OBJ: CaLS.15.3.2 Describe how ears sense sound and help maintain balance.  
STA: S 7.5.g BLM: knowledge
22. ANS: C PTS: 1 DIF: L2  
OBJ: CaLS.15.3.2 Describe how ears sense sound and help maintain balance.  
STA: S 7.5.g BLM: comprehension
23. ANS: C PTS: 1 DIF: L3  
OBJ: CaLS.15.3.2 Describe how ears sense sound and help maintain balance.  
STA: S 7.5.g BLM: evaluation
24. ANS: D PTS: 1 DIF: L3  
OBJ: CaLS.15.3.2 Describe how ears sense sound and help maintain balance.  
STA: S 7.5.g BLM: synthesis
25. ANS: A PTS: 1 DIF: L2  
OBJ: CaLS.15.4.1 Explain how your senses of smell and taste work together.  
STA: S 7.5.g BLM: comprehension
26. ANS: C PTS: 1 DIF: L2  
OBJ: CaLS.15.4.2 Explain how your skin is related to your sense of touch.  
STA: S 7.5.b BLM: comprehension
27. ANS: C PTS: 1 DIF: L2  
OBJ: CaLS.15.5.1 Identify which body system is immediately endangered by drug abuse.  
STA: S 7.5.b BLM: comprehension
28. ANS: B PTS: 1 DIF: L1  
OBJ: CaLS.15.5.1 Identify which body system is immediately endangered by drug abuse.  
STA: S 7.5.b BLM: knowledge

29. ANS: D PTS: 1 DIF: L1  
OBJ: CaLS.15.5.2 Describe some commonly abused drugs and how each affects the body.  
STA: S 7.5.b BLM: knowledge
30. ANS: C PTS: 1 DIF: L1  
OBJ: CaLS.15.5.3 Explain how alcohol abuse harms the body. BLM: knowledge

### MODIFIED TRUE/FALSE

31. ANS: T PTS: 1 DIF: L1  
OBJ: CaLS.15.1.1 Identify the immediate and long-term effects of drug abuse.  
STA: S 7.5.b BLM: knowledge
32. ANS: F, dendrite  
PTS: 1 DIF: L1  
OBJ: CaLS.15.1.2 Describe the structure of a neuron and the kinds of neurons found in the body.  
STA: S 7.5.a BLM: knowledge
33. ANS: F, central  
PTS: 1 DIF: L1  
OBJ: CaLS.15.2.1 Describe the structures and functions of the central nervous system.  
STA: S 7.5.b BLM: knowledge
34. ANS: F, somatic  
PTS: 1 DIF: L1  
OBJ: CaLS.15.2.2 Describe the structures and functions of the peripheral nervous system.  
STA: S 7.5.b BLM: knowledge
35. ANS: T PTS: 1 DIF: L1  
OBJ: CaLS.15.2.3 Explain what a reflex is. STA: S 7.5.b  
BLM: knowledge
36. ANS: T PTS: 1 DIF: L1  
OBJ: CaLS.15.3.1 Explain how the eyes sense light. STA: S 7.5.g  
BLM: knowledge
37. ANS: T PTS: 1 DIF: L1  
OBJ: CaLS.15.3.2 Describe how ears sense sound and help maintain balance.  
STA: S 7.5.g BLM: knowledge
38. ANS: F, buds  
PTS: 1 DIF: L1  
OBJ: CaLS.15.4.1 Explain how your senses of smell and taste work together.  
STA: S 7.5.a BLM: knowledge
39. ANS: T PTS: 1 DIF: L2  
OBJ: CaLS.15.4.2 Explain how your skin is related to your sense of touch.  
STA: S 7.5.b BLM: comprehension
40. ANS: F, stimulant

PTS: 1 DIF: L2  
OBJ: CaLS.15.5.2 Describe some commonly abused drugs and how each affects the body.  
STA: S 7.5.b BLM: comprehension

## COMPLETION

41. ANS: stimulus

PTS: 1 DIF: L2  
OBJ: CaLS.15.1.1 Identify the immediate and long-term effects of drug abuse.  
STA: S 7.5.b BLM: application

42. ANS: homeostasis

PTS: 1 DIF: L2  
OBJ: CaLS.15.1.1 Identify the immediate and long-term effects of drug abuse.  
STA: S 7.5.b BLM: comprehension

43. ANS: sensory

PTS: 1 DIF: L1  
OBJ: CaLS.15.1.2 Describe the structure of a neuron and the kinds of neurons found in the body.  
STA: S 7.5.b BLM: knowledge

44. ANS: motor

PTS: 1 DIF: L2  
OBJ: CaLS.15.1.2 Describe the structure of a neuron and the kinds of neurons found in the body.  
STA: S 7.5.b BLM: comprehension

45. ANS: synapse

PTS: 1 DIF: L1  
OBJ: CaLS.15.1.3 Explain how nerve impulses travel from one neuron to another.  
STA: S 7.5.b BLM: knowledge

46. ANS: synapse

PTS: 1 DIF: L1  
OBJ: CaLS.15.1.3 Explain how nerve impulses travel from one neuron to another.  
STA: S 7.5.b BLM: knowledge

47. ANS: cerebellum

PTS: 1 DIF: L1  
OBJ: CaLS.15.2.1 Describe the structures and functions of the central nervous system.  
STA: S 7.5.b BLM: knowledge

48. ANS: nerves

PTS: 1 DIF: L2  
OBJ: CaLS.15.2.2 Describe the structures and functions of the peripheral nervous system.

- STA: S 7.5.b      BLM: comprehension  
49. ANS: reflex
- PTS: 1      DIF: L2      OBJ: CaLS.15.2.3 Explain what a reflex is.  
STA: S 7.5.b      BLM: application  
50. ANS: sense
- PTS: 1      DIF: L2      OBJ: CaLS.15.3.1 Explain how the eyes sense light.  
STA: S 7.5.a      BLM: comprehension  
51. ANS: lens
- PTS: 1      DIF: L1      OBJ: CaLS.15.3.1 Explain how the eyes sense light.  
STA: S 7.5.g      BLM: knowledge  
52. ANS: nerve impulses
- PTS: 1      DIF: L2      OBJ: CaLS.15.3.1 Explain how the eyes sense light.  
STA: S 7.5.g      BLM: comprehension  
53. ANS: eardrum
- PTS: 1      DIF: L2  
OBJ: CaLS.15.3.2 Describe how ears sense sound and help maintain balance.  
STA: S 7.5.g      BLM: comprehension  
54. ANS: cochlea
- PTS: 1      DIF: L2  
OBJ: CaLS.15.3.2 Describe how ears sense sound and help maintain balance.  
STA: S 7.5.g      BLM: comprehension  
55. ANS: taste
- PTS: 1      DIF: L1  
OBJ: CaLS.15.4.1 Explain how your senses of smell and taste work together.  
STA: S 7.5.a      BLM: knowledge  
56. ANS: skin
- PTS: 1      DIF: L1  
OBJ: CaLS.15.4.2 Explain how your skin is related to your sense of touch.  
STA: S 7.5.a      BLM: knowledge  
57. ANS: brain
- PTS: 1      DIF: L2  
OBJ: CaLS.15.5.1 Identify which body system is immediately endangered by drug abuse.  
STA: S 7.5.b      BLM: comprehension  
58. ANS: tolerance
- PTS: 1      DIF: L1

OBJ: CaLS.15.5.1 Identify which body system is immediately endangered by drug abuse.  
STA: S 7.5.b BLM: knowledge

59. ANS: alcoholism

PTS: 1 DIF: L1

OBJ: CaLS.15.5.3 Explain how alcohol abuse harms the body. STA: S 7.5.b  
BLM: knowledge

60. ANS: liver

PTS: 1 DIF: L1

OBJ: CaLS.15.5.3 Explain how alcohol abuse harms the body. STA: S 7.5.b  
BLM: knowledge

## SHORT ANSWER

61. ANS:

A is the cerebrum. Its functions include interpreting input from the senses, directing the movement of skeletal muscles, and carrying out complex thought processes such as learning and making judgments.

PTS: 1 DIF: L2

OBJ: CaLS.15.2.1 Describe the structures and functions of the central nervous system.  
STA: S 7.5.b BLM: application

62. ANS:

B is the cerebellum. It coordinates muscle action and helps maintain balance.

PTS: 1 DIF: L2

OBJ: CaLS.15.2.1 Describe the structures and functions of the central nervous system.  
STA: S 7.5.b BLM: application

63. ANS:

The nerve impulses that direct the skater's feet to move begin in A, the cerebrum. B, the cerebellum, coordinates the movements directed by the cerebrum, making them smooth.

PTS: 1 DIF: L3

OBJ: CaLS.15.2.1 Describe the structures and functions of the central nervous system.  
STA: S 7.5.b BLM: synthesis

64. ANS:

D is the brain stem, which regulates basic body functions that are involuntary, such as heartbeat.

PTS: 1 DIF: L2

OBJ: CaLS.15.2.1 Describe the structures and functions of the central nervous system.  
STA: S 7.5.b BLM: application

65. ANS:

In order for a person to hear a sound, the brain must interpret nerve impulses that come from the ears. The cerebrum — part A — interprets input from the ears and other sense organs.

PTS: 1 DIF: L2  
OBJ: CaLS.15.2.1 Describe the structures and functions of the central nervous system.  
STA: S 7.5.b BLM: application

66. ANS:

C is the spinal cord. It serves as a link between the brain and most of the nerves of the peripheral nervous system.

PTS: 1 DIF: L2  
OBJ: CaLS.15.2.1 Describe the structures and functions of the central nervous system.  
STA: S 7.5.b BLM: application

67. ANS:

Structure A is the lens. It focuses light on the retina.

PTS: 1 DIF: L2 OBJ: CaLS.15.3.1 Explain how the eyes sense light.  
STA: S 7.5.g BLM: application

68. ANS:

D is the iris; F is the pupil. Muscles in the iris control the size of the pupil.

PTS: 1 DIF: L2 OBJ: CaLS.15.3.1 Explain how the eyes sense light.  
STA: S 7.5.g BLM: application

69. ANS:

If B, the optic nerve, were damaged, nerve impulses from the retina could not travel to the brain. As a result, the person would have impaired vision.

PTS: 1 DIF: L3 OBJ: CaLS.15.3.1 Explain how the eyes sense light.  
STA: S 7.5.g BLM: application

70. ANS:

E is the cornea; it allows light to enter the eye.

PTS: 1 DIF: L3 OBJ: CaLS.15.3.1 Explain how the eyes sense light.  
STA: S 7.5.g BLM: synthesis

71. ANS:

C is the retina; it contains the eye's light-sensitive cells called rods and cones, which generate nerve impulses that travel to the brain.

PTS: 1 DIF: L2 OBJ: CaLS.15.3.1 Explain how the eyes sense light.  
STA: S 7.5.g BLM: application

72. ANS:

Images focus in front of C, the retina, in the condition known as nearsightedness. People with nearsightedness can see nearby objects clearly, but they have trouble seeing objects that are distant.

PTS: 1 DIF: L3 OBJ: CaLS.15.3.1 Explain how the eyes sense light.  
STA: S 7.5.g BLM: synthesis

## ESSAY

73. ANS:

A neuron has a large cell body that contains the nucleus. The cell body has threadlike extensions: dendrites and one axon. Nerve impulses begin in a dendrite, move toward the cell body, and then move down the axon.

PTS: 1

DIF: L2

OBJ: CaLS.15.1.3 Explain how nerve impulses travel from one neuron to another.

STA: S 7.5.b

BLM: comprehension

74. ANS:

The two divisions of the peripheral nervous system are the somatic nervous system and the autonomic nervous system. The somatic nervous system controls voluntary actions. The autonomic nervous system controls involuntary actions of organs, such as the contraction of stomach muscles.

PTS: 1

DIF: L2

OBJ: CaLS.15.2.2 Describe the structures and functions of the peripheral nervous system.

STA: S 7.5.b

BLM: comprehension

75. ANS:

Answers may vary. Examples include wearing a helmet when bicycling, skating, or performing other activities in which the head may be bumped and wearing a seatbelt when traveling in a car.

PTS: 1

DIF: L2

OBJ: CaLS.15.2.4 Identify two ways in which the nervous system can be injured.

STA: S 7.5.b

BLM: application

76. ANS:

A person who is farsighted can see distant objects clearly but cannot see nearby objects well. The eyeballs of farsighted people are shorter than normal. Because of this, the image of a nearby object does not focus properly on the retina—it would be clearly focused at some point behind the retina. As a result, the object appears blurry.

PTS: 1

DIF: L2

OBJ: CaLS.15.3.1 Explain how the eyes sense light.

STA: S 7.5.g

BLM: comprehension

77. ANS:

Sound waves travel through the ear canal to the eardrum. The waves strike the eardrum and cause it to vibrate. These vibrations travel through the bones of the middle ear, the hammer, anvil, and stirrup. The stirrup transmits the vibrations to another membrane, which transfers the vibrations to the fluid in the cochlea of the inner ear. The vibrations stimulate receptors that convert vibrations into nerve impulses. The nerve impulses travel through sensory neurons along the auditory nerve to the cerebrum, where they are interpreted as sound.

PTS: 1

DIF: L2

OBJ: CaLS.15.3.2 Describe how ears sense sound and help maintain balance.

STA: S 7.5.g

BLM: comprehension



78. ANS:

The cerebellum is the part of the brain that coordinates the actions of muscles and helps maintain balance. If a concussion causes injury to the cerebellum, these functions would be disrupted. The somatic nervous system is responsible for voluntary actions such as muscle movements, so it is likely that the somatic nervous system would be affected. A person who received a concussion affecting the cerebellum might experience trouble walking, moving his or her arms and legs, lifting objects, or standing.

PTS: 1 DIF: L3

OBJ: CaLS.15.2.4 Identify two ways in which the nervous system can be injured.

STA: S 7.5.a BLM: synthesis

79. ANS:

Anabolic steroids are synthetic chemicals that are similar to natural hormones. Anabolic steroids can increase muscle size and strength, but they can also lead to dangerous side effects. Harmful effects include heart damage, liver damage, increased blood pressure, and mood changes that can lead to violence. In contrast, alcohol is a depressant. It causes decreased alertness, poor reflexes, and depression. Driving after drinking can be dangerous because large amounts of alcohol can cause decreased alertness, thus limiting a driver's ability to see the road and other vehicles. Over the long term, alcohol abuse can lead to liver and brain damage and heart disease. Although alcohol and anabolic steroids act on different parts of the body, both may be damaging to the heart and liver.

PTS: 1 DIF: L3

OBJ: CaLS.15.5.2 Describe some commonly abused drugs and how each affects the body.

STA: S 7.5.b BLM: synthesis

80. ANS:

Both the sense of smell and the sense of taste detect chemicals in the food or air. These chemicals trigger receptors in the nose and mouth. The nose can distinguish up to 50 odors, while the tongue can taste only five basic flavors. Much of what we taste is actually a product of the combination of the senses of taste and smell. Because of the relationship between taste and smell, chemicals with strong aromas would help give a particular flavor to a food product. Consumers might prefer such products and purchase them often.

PTS: 1 DIF: L3

OBJ: CaLS.15.4.1 Explain how your senses of smell and taste work together.

STA: S 7.5.b BLM: evaluation