Name: _____ Class: _____ Date: _____ ID: A

hapter 19 Study Guide

Multiple Choice
Identify the letter of 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. What part of a neuron carries nerve impulses away from the cell body?
a. axon
b. synapse
c. dendrite
d. nucleus

____ 4. A motor neuron sends an impulse to
a. a muscle or gland.
b. a sensory neuron.
c. an interneuron.
d. another motor neuron.

____ 5. 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.

____ 6. What part of the brain controls memory?
a. cerebrum
b. brainstem
c. cerebellum
d. spinal cord

____ 7. 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.

____ 8. The somatic nervous system controls
a. artistic ability.
b. logical thinking.
c. involuntary actions, such as the digestion of food.
d. voluntary actions, such as turning a television on.

____ 9. 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.

____ 10. In some reflex actions, skeletal muscles contract without the involvement of
a. motor neurons.
b. interneurons.
c. the spinal cord.
d. the brain.

____ 11. What is the name of the opening through which light enters the eye?
a. iris
b. stirrup
c. pupil
d. retina

____ 12. Nearsightedness and farsightedness are caused by
a. a defect in the shape of the eyeball.
b. a defect in the structure of the retina.
c. the inability of the iris to change size.
d. damage to receptor cells in the retina.

____ 13. What produces sound?
a. light waves
b. vibrating material
c. chemicals in the air
d. rods and cones

____ 14. What structure passes sound vibrations to the cochlea?
a. eardrum
b. auditory nerve
c. stirrup
d. ear canal

____ 15. The senses of smell and taste both detect
a. chemicals.
b. waves.
c. the semicircular canals.
d. the optic nerve.

____ 16. 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.

____ 17. Drugs that slow down the activity of the central nervous system are called
a. anabolic steroids.
b. hallucinogens.
c. stimulants.
d. depressants.

___ 18. 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.

____ 19. If the semicircular canals are damaged, which sense will be affected?
a. hearing
b. touch
c. balance
d. smell

____ 20. 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.

____ 21. The brain and spinal cord make up the
a. central nervous system.
b. peripheral nervous system.
c. somatic nervous system.
d. autonomic nervous system.

____ 22. The three regions that make up the brain include the cerebrum, cerebellum, and
a. senses
b. brain stem
c. spinal cord
d. retina

____ 23. A bruise like injury of the brain is called
a. a stimulant.
b. a concussion.
c. an inhalant.
d. paralysis.

____ 24. Because of the way in which the lens of the eye bends light rays, the image produced by the lens is
a. black and white.
b. usually blurred.
c. right side up.
d. upside down.

____ 25. Cone cells enable you to see
a. colors.
b. black and white.
c. at night.
d. nearby objects.

____ 26. Spinal cord injuries can result in
a. concussion.
b. paralysis.
c. a reflex.
d. farsightedness.

____ 27. Structures in the inner ear help control the sense of
a. vision.
b. taste.
c. smell.
d. balance.

Completion
Complete each sentence or statement.

28. 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.
29. The type of neurons known as _____ neurons pick up stimuli from the external or internal environment and convert those stimuli to nerve impulses.
30. The part of the brain that controls balance is the _____.
31. In order for a nerve impulse to pass from an axon tip to the next structure, it must cross a space called a(n) _____.
32. Each specific _____ organ picks up a different kind of information about the environment.
33. The _____ of the eye bends light rays and focuses them.
34. 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.
35. The _____ is the organ associated with the sense of touch.
36. The junction where one neuron can transfer an impulse to another structure is called a(n) _____.
37. Eyes convert light into _____ that travel through the optic nerves to the brain.
38. In the part of the inner ear called the _____, receptors convert sound vibrations into nerve impulses.
39. A muscle contracts in response to an impulse carried by the type of neuron known as a(n) _____ neuron.
40. The peripheral nervous system consists of _____ that link the central nervous system with all parts of the body.
41. One function of the nervous system is to maintain _____, or stability within the body.
42. The flavor of food is influenced by the senses of smell and _____.
43. 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) _____.

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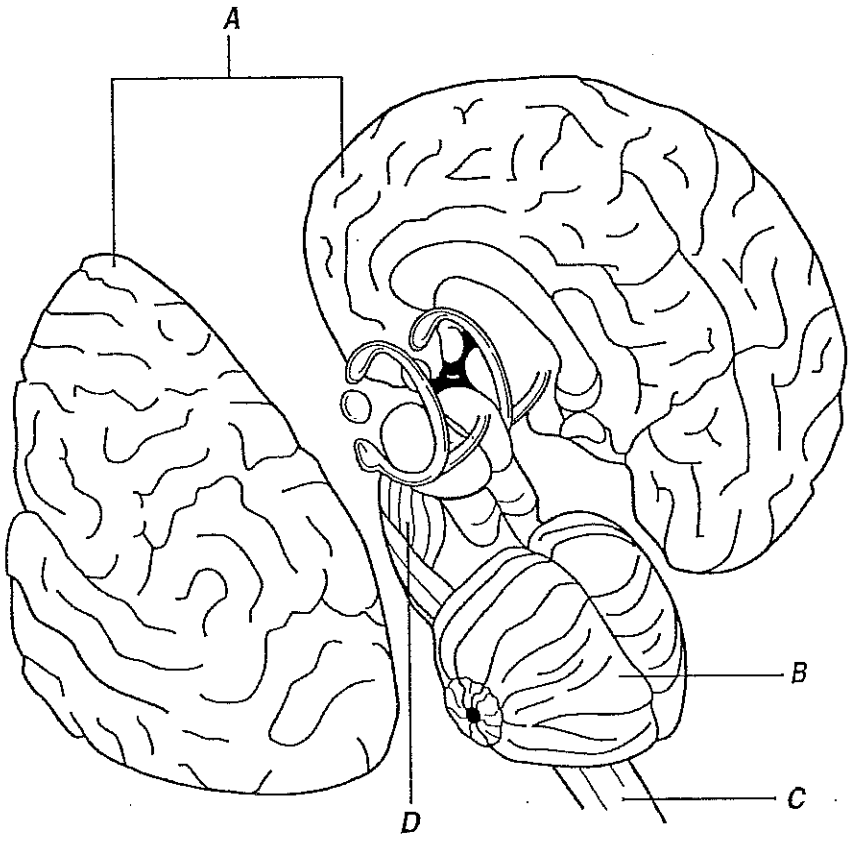
Short Answer

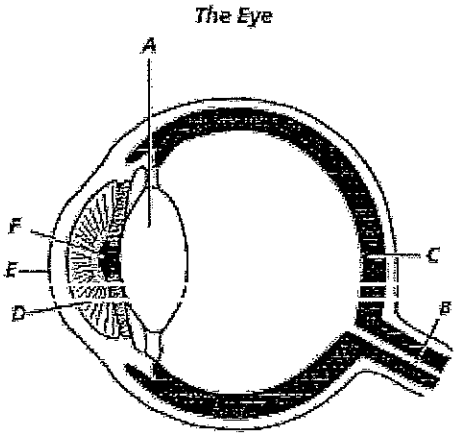
Use the diagram to answer each question.

The Brain



44. What part of the brain is indicated by A? Identify three functions of structure A.
45. What part of the brain is indicated by B? What is its function?
46. Explain how parts A and B work together to enable a skater to glide smoothly across the ice.
47. What part of the brain is indicated by D? What is its function?
48. 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?
49. What part of the central nervous system is indicated by C? What is its function?

Use the diagram to answer each question.



50. Identify structure A and describe its function.
51. Identify structures D and F. How are these structures related to each other?
52. Identify structure B. Explain what would happen if this structure were damaged.
53. Identify structure E and describe its function.
54. Identify structure C and describe its function.
55. When images focus in front of structure C, what condition results? How does this condition affect people's vision?

Essay

56. 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.
57. Name the two divisions of the peripheral nervous system and explain the difference between the functions of the two divisions.
58. State the three main parts of a neuron and describe how an impulse travels through a neuron.
59. Describe two actions that help prevent injury to the brain and spinal cord.
60. Explain what farsightedness is and what causes it.
61. To what stimuli do the nose and taste buds respond?