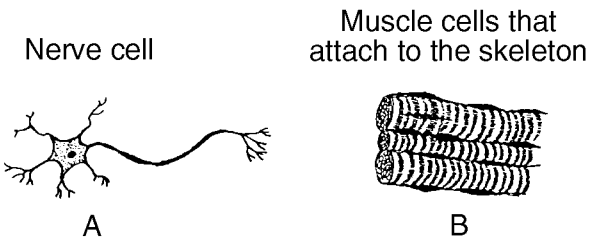
Nervous

1. When leg muscles respond to a stimulus by moving the foot, the response depends most directly on the functioning of
   (1) bronchioles (3) capillaries
   (2) nephrons (4) neurons

2. In order to stimulate an effector in a toe, which pathway does a nerve impulse follow after it is initiated at a receptor?
   (1) interneuron →sensory neuron →motor neuron
   (2) interneuron →motor neuron →sensory neuron
   (3) sensory neuron →motor neuron →interneuron
   (4) sensory neuron →interneuron →motor neuron

3. Which statement accurately compares cells in the human circulatory system to cells in the human nervous system?
   (1) Cells in the circulatory system carry out the same life function for the organism as cells in the nervous system.
   (2) Cells in the circulatory system are identical in structure to cells in the nervous system.
   (3) Cells in the nervous system are different in structure from cells in the circulatory system, and they carry out different specialized functions.
   (4) Cells in the nervous system act independently, but cells in the circulatory system function together.

4. Two types of human cells are shown in the diagram below.

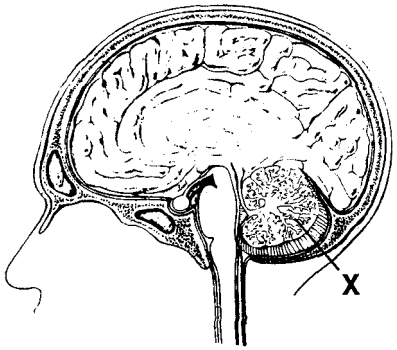


   Cell *A* causes the cells at *B* to contract. This activity would be most useful for
   (1) lifting a book from a bookshelf
   (2) coordinating the functions of organelles
   (3) digesting food in the small intestine
   (4) carrying out the process of protein synthesis

5. The part of the human central nervous system that controls breathing is the
   (1) cerebrum (3) medulla
   (2) cerebellum (4) spinal cord

6. The nerves that directly control the muscles used in writing are
   (1) part of the autonomic nervous system
   (2) regulated by the hypothalamus
   (3) part of the somatic nervous system
   (4) regulated by the medulla

7. The diagram below represents the human brain



   The structure labeled *X* is most directly involved in the
   (1) control of breathing and heartbeat
   (2) maintenance of coordination and balance
   (3) interpretation of sensory impulses
   (4) initiation of voluntary actions

8. In humans, the center for regulating the amount of oxygen in the blood is situated in the
   (1) cerebrum (3) medulla
   (2) cerebellum (4) spinal cord

9. A man suffers a head injury in a car accident. For several days afterward, he has difficulty remembering phone numbers. This loss of memory results from damage to the man's
   (1) cerebrum (3) medulla
   (2) cerebellum (4) spinal cord

10. An increase in the amount of carbon dioxide in the blood stimulates the respiratory center of the brain. As a result, impulses are sent from the
    (1) medulla to the diaphragm, increasing the rate of breathing
    (2) cerebrum to the chest muscles, decreasing the rate of breathing
    (3) medulla to the trachea, causing it to constrict
    (4) cerebrum to the alveoli, causing them to actively transport oxygen

11. In the human central nervous system, the medulla directly controls
    (1) voluntary activity (3) involuntary activity
    (2) memory (4) balance

12. Which organism possesses a dorsal nerve cord?
    (1) Hydra (3) Paramecium
    (2) human (4) earthworm

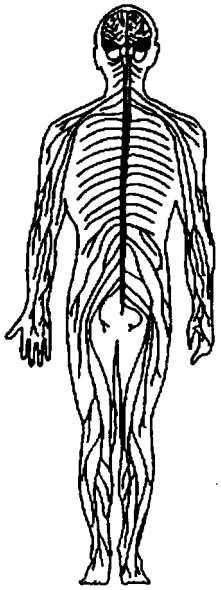
13. The somatic nervous system contains nerves that run from the central nervous system to the
    (1) muscles of the skeleton
    (2) heart
    (3) smooth muscles of the gastrointestinal tract
    (4) endocrine glands

14. The portion of the nervous system that is most closely associated with the contraction of cardiac muscle is the
    (1) autonomic nervous system (3) cerebrum
    (2) somatic nervous system (4) hypothalamus

15. Which is an activity controlled primarily by the autonomic nervous system?
    (1) thinking during an exam (3) regulating heartbeat
    (2) writing your name (4) chewing food

16. The contraction of the biceps and triceps muscles in the human arm is regulated by the
    (1) autonomic nervous system (3) somatic nervous system
    (2) pituitary gland (4) hypothalamus

17. The diagram below represents a system in a human body.



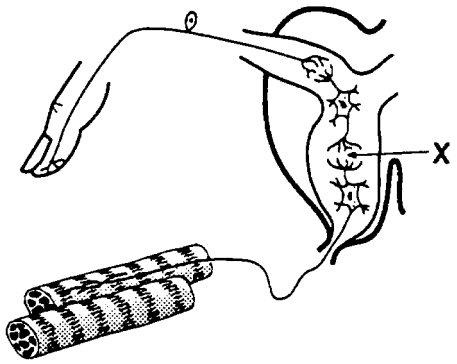
This body system is most directly involved in
    (1) production of blood cells
    (2) stimulation of rapid growth responses
    (3) elimination of body wastes
    (4) initiation of muscle contraction

18. The part of the human central nervous system that conducts impulses from the brain to the peripheral nervous system is protected by the
    (1) vertebrae (3) receptors
    (2) effectors (4) glomeruli

19. Which is a correct route of an impulse in a reflex arc?
    (1) receptor → sensory neuron →interneuron → motor neuron → effecter
    (2) effecter → receptor→ motor neuron →sensory neuron → interneuron
    (3) sensory neuron → effecter → motor neuron → receptor → interneuron
    (4) motor neuron → sensory neuron →interneuron → effecter

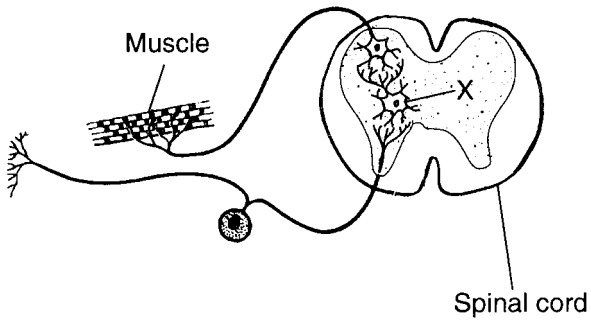
20. Which is the first structure stimulated in a reflex arc?
    (1) interneuron (3) effector
    (2) motor neuron (4) receptor

21. In the reflex are represented by the diagram below, which type of substance is normally secreted in the area indicated by letter *X*?



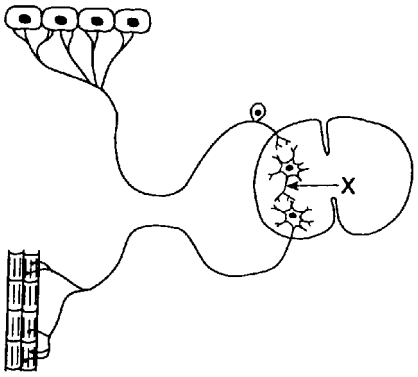
    (1) an antibody (3) a neurotransmitter
    (2) a pigment (4) an antigen

22. A reflex arc is illustrated in the diagram below.



Structure *X* represents
    (1) an effector (3) an interneuron
    (2) a motor neuron (4) a receptor

23. The diagram below represents a reflex arc.



The function of the neuron labeled *X* is to

(1) transmit impulses from a sensory neuron to a motor neuron
(2) direct impulses from the receptor to the spinal cord
(3) initiate responses by stimulating the receptor
(4) transmit impulses from the effector to the brain

24. If a motor neuron involved in a reflex arc is damaged, which event in that arc is *least* likely to occur?

(1) contraction of a muscle
(2) stimulation of an interneuron
(3) reception of a stronger stimulus by the sense organ
(4) secretion of a neurotransmitter by the sensory neuron

25. The peripheral nervous system consists of the

(1) neurons located in the brain and spinal cord
(2) nerves that extend from the brain and spinal cord
(3) interneurons of the central nervous system
(4) portions of the brain known as the medulla and cerebellum