**CHAPTER 2**

**Neuroscience and Behavior**

1. The endocrine system consists of:

a. glial cells.

b. neural networks.

c. interneurons.

d. glands.

2. Hormones are the chemical messengers of the:

a. cerebral cortex.

b. autonomic nervous system.

c. endocrine system.

d. limbic system.

e. reticular formation.

3. The ovaries in females and the testes in males are part of the:

a. limbic system.

b. endocrine system.

c. sympathetic nervous system.

d. reticular formation.

e. central nervous system.

4. Endocrine glands secrete hormones directly into:

a. synaptic gaps.

b. the bloodstream.

c. the limbic system.

d. sensory neurons.

e. interneurons.

5. An amplified recording of the waves of electrical activity that sweep across the surface of the brain is called a(n):

a. CT scan.

b. EEG.

c. PET scan.

d. MRI.

6. In order to identify which of Lucy’s brain areas was most active when she talked, neuroscientists gave her a temporarily radioactive form of glucose and a(n):

a. CT scan.

b. PET scan.

c. EEG.

d. MRI.

7. In terms of brain evolution, the sequence of brain regions from oldest to

newest is:

a. limbic system; brainstem; cerebral cortex.

b. brainstem; cerebral cortex; limbic system.

c. limbic system; cerebral cortex; brainstem.

d. brainstem; limbic system; cerebral cortex.

8. The part of the brainstem that controls heartbeat and breathing is called the:

a. cerebellum.

b. medulla.

c. reticular formation.

d. thalamus.

9. The reticular formation is located in the:

a. brainstem.

b. limbic system.

c. somatosensory cortex.

d. motor cortex.

10. Which brain structure receives information from all the senses except smell?

a. hippocampus

b. amygdala

c. angular gyrus

d. thalamus

11. The brain structure that provides a major link between the nervous system and the hormone system is the:

a. cerebellum.

b. amygdala.

c. reticular formation.

d. hypothalamus.

e. medulla.

12. Addictive drug cravings are likely to be associated with reward centers in the:

a. thalamus.

b. cerebellum.

c. reticular formation.

d. limbic system.

e. angular gyrus.

13. Which lobes of the brain receive the input that enables you to feel someone scratching your back?

a. parietal

b. temporal

c. occipital

d. frontal

14. Auditory stimulation is first processed in the \_\_\_\_\_\_\_\_ lobes.

a. occipital

b. temporal

c. frontal

d. parietal

15. The occipital lobes are to \_\_\_\_\_\_\_\_ as the temporal lobes are to \_\_\_\_\_\_\_\_.

a. hearing; sensing movement

b. seeing; sensing touch

c. sensing pleasure; sensing pain

d. seeing; hearing

e. speaking; hearing

16. The sense of hearing is to the \_\_\_\_\_\_\_\_ lobes as the sense of touch is to the \_\_\_\_\_\_\_\_ lobes.

a. frontal; occipital

b. temporal; parietal

c. parietal; temporal

d. occipital; frontal

17. The motor cortex is located in the \_\_\_\_\_\_\_\_ lobes.

a. occipital

b. temporal

c. frontal

d. parietal

18. The sensory cortex is most critical for our sense of:

a. taste.

b. sight.

c. hearing.

d. touch.

e. smell.

19. The association areas are located in the:

a. spinal cord.

b. brainstem.

c. thalamus.

d. limbic system.

e. cerebral cortex.

20. The most extensive regions of the brain, which enable judging and planning, are called the:

a. reticular formation.

b. projection areas.

c. sensory areas.

d. temporal lobes.

e. association areas.

21. The part of the left frontal lobe that directs the muscle movements involved in speech is known as:

a. Wernicke’s area.

b. Broca’s area.

c. the amygdala.

d. the angular gyrus.

e. the reticular formation.

22. Wernicke’s area is located in the left \_\_\_\_\_\_\_\_ lobe.

a. parietal

b. occipital

c. temporal

d. frontal

23. After Paul’s serious snow‑skiing accident, doctors detected damage to his temporal lobe in Wernicke’s area. Because of the damage, Paul is most likely to experience difficulty in:

a. remembering past events.

b. pronouncing words correctly.

c. understanding what others are saying.

d. recognizing familiar faces.

24. The capacity of one brain area to take over the functions of another damaged brain area is known as brain:

a. tomography.

b. phrenology.

c. hemispherectomy.

d. aphasia.

e. plasticity.

25. Neural regulation of a child’s language functioning is transferred to the right hemisphere if speech areas in the left hemisphere are damaged. This best illustrates:

a. aphasia.

b. hemispherectomy.

c. plasticity.

d. tomography.

e. phrenology.

26. Damage to the left cerebral hemisphere is most likely to reduce a person’s

ability to:

a. solve arithmetic problems.

b. copy drawings.

c. recognize faces.

d. recognize familiar melodies.

27. The corpus callosum is a band of neural fibers that:

a. enables the left hemisphere to control the right side of the body.

b. transmits information between the cerebral hemispheres.

c. controls the glands and muscles of the internal organs.

d. directs the muscle movements involved in speech.

28. Neurosurgeons have severed the corpus callosum in human patients in order to reduce:

a. aphasia.

b. epileptic seizures.

c. depression.

d. neural plasticity.

e. reward deficiency syndrome.

29. In a recent car accident, Tamiko sustained damage to his right cerebral hemisphere. This injury is most likely to reduce Tamiko’s ability to:

a. facially express emotions.

b. solve arithmetic problems.

c. understand simple verbal requests.

d. process information in an orderly sequence.

30. Research on left-handedness suggests that:

a. genes or prenatal factors play a role in handedness.

b. a greater proportion of women than men are left-handed.

c. left-handers generally demonstrate less artistic competence than right-handers.

d. most left-handers process language primarily in their right hemisphere.

31. The brain research technique that involves monitoring the brain’s usage of glucose is called (in abbreviated form) the:

a. PET scan.

b. CT scan.

c. EEG.

d. MRI.

32. The technique that uses magnetic fields and radio waves to produce computer images of structures within the brain is called:

a. the EEG.

b. a CT scan.

c. a PET scan.

d. MRI.

33. Jessica experienced difficulty keeping her balance after receiving a blow to the back of her head. It is likely that she injured her:

a. medulla.

b. thalamus.

c. hypothalamus.

d. cerebellum.

e. cerebrum.

34. Though there is no single “control center” for emotions, their regulation is primarily attributed to the brain region known as the:

a. limbic system.

b. reticular formation.

c. brainstem.

d. cerebral cortex.

35. The visual cortex is located in the:

a. occipital lobe.

b. temporal lobe.

c. frontal lobe.

d. parietal lobe.

36. Cortical areas that are not primarily concerned with sensory, motor, or language functions are:

a. called projection areas.

b. called association areas.

c. located mostly in the parietal lobe.

d. located mostly in the temporal lobe.

37. Following a gunshot wound to his head, Jack became more uninhibited, irritable, and profane. It is likely that his personality change was the result of injury to his:

a. parietal lobe.

b. temporal lobe.

c. occipital lobe.

d. frontal lobe.

e. endocrine system.

38. Damage to \_\_\_\_\_\_\_\_ will usually cause a person to lose the ability to comprehend language.

a. the angular gyrus

b. Broca’s area

c. Wernicke’s area

d. frontal lobe association areas

39. The nerve fibers that enable communication between the right and left cerebral hemispheres and that have been severed in split-brain patients form a structure called the:

a. reticular formation.

b. association areas.

c. corpus callosum.

d. parietal lobes.

e. limbic system.

40. Which of the following is typically controlled by the right hemisphere?

a. language

b. learned voluntary movements

c. arithmetic reasoning

d. perceptual tasks

41. Chemical messengers produced by endocrine glands are called:

a. agonists.

b. neurotransmitters.

c. hormones.

d. enzymes.

42. The gland that regulates body growth is the:

a. adrenal.

b. thyroid.

c. hypothalamus.

d. pituitary.

e. hyperthyroid.

43. Epinephrine and norepinephrine are \_\_\_\_\_\_\_\_ that are released by the \_\_\_\_\_\_\_\_ gland.

a. neurotransmitters; pituitary

b. hormones; pituitary

c. neurotransmitters; adrenal

d. hormones; adrenal

e. hormones; thyroid