

1. The cerebellum contains \_\_\_\_\_ of all the neurons in the adult human brain.
  - A) 20%
  - B) 50%
  - C) 10%
  - D) 80%
  
2. Neural agenesis refers to:
  - A) an injury to a brain structure.
  - B) the degeneration of a structure.
  - C) the failure of a structure to develop.
  - D) the creation of a brain structure.
  
3. If a tree falls in the forest, does it make a sound if no one is present?
  - A) Yes, because sound is a physical phenomenon.
  - B) Yes, because if you record the noise and play it again later you will hear it.
  - C) No, because sound is a fabrication of your brain.
  - D) This is an unanswerable philosophical question.
  
4. Phenotypic plasticity refers to:
  - A) how an organism's genotype can be influenced by environmental factors.
  - B) how an organism's genetics can be influenced by its nervous system.
  - C) the study of nervous system plasticity.
  - D) None of the answers is correct.
  
5. The CNS includes the \_\_\_\_\_, whereas the PNS includes the \_\_\_\_\_.
  - A) brain and autonomic nervous system; spinal cord and somatic nervous system
  - B) spinal cord and autonomic nervous system; brain and somatic nervous system
  - C) spinal cord and brain; autonomic nervous system and somatic nervous system
  - D) somatic nervous system and brain; spinal cord and autonomic nervous system
  
6. The somatic nervous system includes the \_\_\_\_\_, whereas the autonomic nervous system includes the \_\_\_\_\_.
  - A) sympathetic and parasympathetic divisions; cranial nerves and spinal nerves
  - B) brain and spinal cord; cranial nerves and spinal nerves
  - C) sympathetic and parasympathetic divisions; brain and spinal cord
  - D) cranial nerves and spinal nerves; sympathetic and parasympathetic divisions

7. The subdivision of the nervous system that controls the gut is called the:
- A) somatic nervous system.
  - B) enteric nervous system.
  - C) digestive nervous system.
  - D) autonomic nervous system.
8. The term afferent refers to \_\_\_\_\_ signals.
- A) incoming
  - B) outgoing
  - C) different
  - D) similar
9. Efferent is to afferent as:
- A) brain is to spinal cord.
  - B) sensory is to motor.
  - C) motor is to sensory.
  - D) incoming is to outgoing.
10. Afferent is to efferent as:
- A) out is to in.
  - B) top is to bottom.
  - C) in is to out.
  - D) bottom is to top.
11. Moving from superficial layers to deep layers, in what order are the meninges found?
- A) dura mater, arachnoid layer, pia mater
  - B) pia mater, arachnoid layer, dura mater
  - C) dura mater, pia mater, arachnoid layer
  - D) pia mater, dura mater, arachnoid layer
12. Brain nomenclature can be very confusing. This is because:
- A) many structures have several names.
  - B) research on brain includes scientists of many nationalities and languages
  - C) some structures were named by numbers.
  - D) All of the answers are correct.

13. Structures atop the brain or a structure within the brain are\_\_\_\_\_:
- A) lateral.
  - B) ventral.
  - C) medial.
  - D) dorsal.
14. The ventral portion of a structure is sometimes called:
- A) superior.
  - B) inferior.
  - C) dorsal.
  - D) medial.
15. Rostral is to caudal as:
- A) superior is to inferior.
  - B) dorsal is to ventral.
  - C) medial is to lateral.
  - D) anterior is to posterior.
16. Coronal section is to horizontal section as:
- A) frontal view is to dorsal view.
  - B) medial view is to frontal view.
  - C) frontal view is to medial view.
  - D) dorsal view is to medial view.
17. What best characterizes the composition of cerebrospinal fluid?
- A) sodium chloride and other salts
  - B) essential amino acids
  - C) glucocorticoids
  - D) simple sugars and small lipids
18. Cerebrospinal fluid (CSF) flows between:
- A) the arachnoid layer and pia mater.
  - B) the dura mater and pia mater.
  - C) the dura mater and arachnoid layer.
  - D) the superficial layer and deep layer.

19. The functions of the temporal lobes lie mainly in:
- A) decision making.
  - B) hearing, language, and music.
  - C) sensory processing and directing movements toward objects.
  - D) vision.
20. Following a brain injury Greg has difficulty in understanding language and music. He is most likely to have suffered damage to his:
- A) frontal lobe.
  - B) temporal lobe.
  - C) occipital lobe.
  - D) parietal lobe.
21. The frontal lobes are responsible for controlling:
- A) decision making.
  - B) hearing, language, and music.
  - C) vision.
  - D) sensory processing and directing movements toward objects.
22. Following a brain injury Suzanne experiences difficulty with problem solving and decision making. She is most likely to have suffered an injury to her:
- A) parietal lobe.
  - B) occipital lobe.
  - C) frontal lobe.
  - D) temporal lobe.
23. The parietal lobes primarily control:
- A) vision.
  - B) hearing, language, and music.
  - C) decision making.
  - D) sensory processing and directing movements toward objects.
24. Following a recent stroke Jim experiences difficulty with directing movements toward objects. The stroke is most likely to have occurred in his:
- A) frontal lobe.
  - B) temporal lobe.
  - C) occipital lobe.
  - D) parietal lobe.

25. The occipital lobes are responsible for:
- A) sensory processing and directing movements toward objects.
  - B) decision making.
  - C) visual processing.
  - D) hearing, language, and music.
26. During a recent car accident Allison suffered a brain injury that left her blind even though her eyes are working fine. She is most likely to have suffered damage to her:
- A) occipital lobe.
  - B) frontal lobe.
  - C) temporal lobe.
  - D) parietal lobe.
27. Sulci are:
- A) found only in the cerebellum.
  - B) found only in the cerebrum.
  - C) the cracks between the bumps on the brain.
  - D) the bumps on the surface of the brain.
28. Gyri are:
- A) bumps on the surface of the cortex.
  - B) cracks on the surface of the cortex.
  - C) deformities on the surface of the cortex.
  - D) only found in the spinal cord.
29. Which of the following is NOT a symptom associated with meningitis?
- A) severe headache
  - B) stiff neck
  - C) aggressiveness
  - D) convulsions
30. Sulcus is to gyrus as:
- A) crack is to bump.
  - B) bump is to crack.
  - C) ridge is to mountain.
  - D) crack is to crevasse.

31. The symptoms of the "sleeping sickness" that arose during World War I are caused by lesions to the:
- A) putamen.
  - B) globus pallidus.
  - C) substantia nigra.
  - D) amygdala.
32. Which of the following arteries does NOT act as a major supplier to the cerebrum?
- A) anterior
  - B) superior
  - C) middle
  - D) posterior
33. The artery that provides blood to the lateral, temporal, and frontal lobes is the \_\_\_\_\_ cerebral artery.
- A) anterior
  - B) middle
  - C) posterior
  - D) inferior
34. The artery that provides blood to the occipital lobes is the \_\_\_\_\_ cerebral artery.
- A) anterior
  - B) middle
  - C) posterior
  - D) inferior
35. A disruption of the blood supply to a brain region causes:
- A) meningitis.
  - B) encephalitis.
  - C) a stroke.
  - D) cerebral agenesis.
36. \_\_\_\_\_ is mainly composed of cell bodies and capillaries.
- A) Reticular matter
  - B) Gray matter
  - C) The corpus callosum
  - D) White matter

37. \_\_\_\_\_ is(are) mainly composed of nerve fibers with fatty coverings.
- A) Cerebral aqueducts
  - B) Ventricles
  - C) White matter
  - D) Gray matter
38. CSF is made in:
- A) the pia mater.
  - B) the dura mater.
  - C) the ventricles.
  - D) the arachnoid layer.
39. The large cavities inside the brain are known as:
- A) ventricles and are filled with CSF.
  - B) ventricles and are filled with blood.
  - C) the arachnoid layer and are filled with CSF.
  - D) the arachnoid layer and are filled with blood.
40. What is the most unlikely function of CSF?
- A) aiding cell transmission in the brain
  - B) acting as a shock absorber to the brain
  - C) allowing certain compounds access
  - D) helping the brain excrete metabolic wastes from the brain
41. Ischemic stroke is caused by:
- A) a clot.
  - B) a broken blood vessel.
  - C) meningitis.
  - D) encephalitis.
42. A hemorrhagic stroke is caused by:
- A) a blood clot.
  - B) a ruptured blood vessel.
  - C) an embolism.
  - D) All of the answers are correct.

43. Tissue plasminogen activator (t-PA) is effective for treating:
- A) ischemic stroke.
  - B) hemorrhagic stroke.
  - C) meningitis.
  - D) All of the answers are correct.
44. When observing a sagittal brain section at the midline, what is the prominent feature composed of white matter?
- A) corpus callosum
  - B) ventricles
  - C) cingulate cortex
  - D) hippocampus
45. Cutting the brain from front to back will give:
- A) a coronal view.
  - B) a frontal view.
  - C) a horizontal view.
  - D) a sagittal view.
46. According to Descartes, the seat of the mind was located in the:
- A) frontal lobes.
  - B) thalamus.
  - C) pineal gland.
  - D) temporal lobes.
47. The role of glial cells is primarily:
- A) to carry out information processing in the brain.
  - B) to send signals from one brain region to another.
  - C) to modulate the activity of neurons.
  - D) to process sensory input.
48. CNS is to PNS as:
- A) neuron is to glia.
  - B) gray matter is to white matter.
  - C) nerve is to tract.
  - D) tract is to nerve.

49. The prosencephalon is sometimes referred to as:
- A) the hindbrain.
  - B) the middle brain.
  - C) the auxiliary brain.
  - D) the front brain.
50. In the human brain the basal ganglia, limbic system, and olfactory bulbs are considered part of the:
- A) telencephalon.
  - B) metencephalon.
  - C) diencephalon.
  - D) mesencephalon.
51. In the human brain the mesencephalon contains:
- A) the neocortex.
  - B) cerebellum.
  - C) tectum and tegmentum.
  - D) medulla.
52. The thalamus and hypothalamus are considered part of the:
- A) myelencephalon.
  - B) telencephalon.
  - C) metencephalon.
  - D) diencephalon.
53. Which of the following structures is NOT part of the metencephalon?
- A) the cerebellum
  - B) the pons
  - C) the medulla
  - D) None of the answers is correct.
54. Which of the following is NOT part of the hindbrain?
- A) the pons
  - B) the tegmentum
  - C) the reticular formation
  - D) the medulla oblongata

55. Awakening from sleep is a function of:
- A) the pons.
  - B) the medulla.
  - C) the cerebellum.
  - D) the reticular formation.
56. The reticular formation is primarily made up of:
- A) gray matter only.
  - B) white matter only.
  - C) gray matter and white matter.
  - D) None of the answers is correct.
57. The primary function of the cerebellum is:
- A) control of sleeping and waking.
  - B) control of movement.
  - C) control of heart rate and respiration.
  - D) sensory processing.
58. Orienting responses (e.g., turning your head to locate the source of a sound) are controlled by:
- A) the pons.
  - B) the superior and inferior colliculi.
  - C) the cerebellum.
  - D) the diencephalon.
59. The red nucleus, substantia nigra, and periaqueductal gray matter are parts of the:
- A) tectum.
  - B) pons.
  - C) tegmentum.
  - D) reticular formation.
60. Regulation of breathing and the cardiovascular system is primarily controlled by:
- A) the pons.
  - B) the reticular activating system.
  - C) the medulla.
  - D) the cerebellum.

61. What are the functions of the superior and inferior colliculi respectively?
- A) auditory and visual
  - B) visual and auditory
  - C) tactile and visual
  - D) visual and tactile
62. Which of the following is part of the tegmentum?
- A) the tectum
  - B) the substantia nigra
  - C) the inferior colliculus
  - D) the superior colliculus
63. The hypothalamus is NOT primarily involved in:
- A) motor movements.
  - B) sleeping.
  - C) emotional behavior.
  - D) sensory input.
64. Sexual behavior is a primary function of:
- A) the thalamus.
  - B) the hypothalamus.
  - C) the gyrus fornicatus.
  - D) the red nucleus.
65. The \_\_\_\_\_ acts as a sensory relay station for signals arriving from sensory receptors that are being sent to the cortex.
- A) pituitary
  - B) pons
  - C) hypothalamus
  - D) thalamus
66. Thalamus is to hypothalamus as:
- A) sensory input is to body maintenance.
  - B) body maintenance is to sensory input.
  - C) sexual behavior is to sleeping.
  - D) feeding is to endocrine function.

67. The lateral geniculate nucleus deals with:
- A) touch.
  - B) hearing.
  - C) olfaction.
  - D) vision.
68. The primary function of the thalamus is:
- A) transmission of sensory inputs to the cortex.
  - B) regulation of hormone function.
  - C) regulation of sleeping and waking.
  - D) control of orienting responses.
69. Which of the following is NOT part of the forebrain?
- A) the cortex
  - B) the tectum
  - C) the basal ganglia
  - D) the limbic system
70. The basal ganglia primarily controls:
- A) decision making.
  - B) voluntary movement.
  - C) learning and memory.
  - D) processing of sound.
71. Cognition is usually attributed to:
- A) the limbic cortex.
  - B) the cingulate cortex.
  - C) the neocortex.
  - D) the parahippocampal cortex.
72. Deficits in processing basic visual information (e.g., luminance) are caused by damage to the:
- A) frontal lobe.
  - B) parietal lobe.
  - C) occipital lobe.
  - D) temporal lobe.

73. A person who has trouble locating the source of stimulation on the skin most likely has damage to the:
- A) temporal lobe.
  - B) parietal lobe.
  - C) occipital lobe.
  - D) frontal lobe.
74. Trouble recognizing sounds is most commonly associated with damage to the:
- A) parietal lobe.
  - B) frontal lobe.
  - C) occipital lobe.
  - D) temporal lobe.
75. Following a brain injury Steven has trouble organizing himself and has difficulty formulating plans to accomplish goals. Steven is most likely to have damaged his:
- A) frontal lobe.
  - B) temporal lobe.
  - C) parietal lobe.
  - D) occipital lobe.
76. Six layers of gray matter on top of a layer of white matter would describe:
- A) the limbic cortex.
  - B) the basal ganglia.
  - C) the neocortex.
  - D) the cingulate cortex.
77. Cortical regions:
- A) have the same density of cell layers.
  - B) have different specific chemical characteristics.
  - C) when stained look the same across the various areas.
  - D) have very specific functions and rarely interrelate.
78. Motor output signals are sent through layer(s) \_\_\_\_\_ of the cortex.
- A) V and VI
  - B) I to III
  - C) IV
  - D) II

79. Integrative functions are processed by layer(s) \_\_\_\_\_ of the cortex.
- A) V and VI
  - B) I to III
  - C) IV
  - D) All of the answers are correct.
80. Sensory inputs are transmitted through layer(s) \_\_\_\_\_ of the cortex.
- A) I to III
  - B) V and VI
  - C) IV
  - D) All of the answers are correct.
81. Memory and emotion are processed by the:
- A) limbic system.
  - B) basal ganglia.
  - C) thalamus.
  - D) parietal lobe.
82. The caudate nucleus and the putamen are part of the:
- A) basal ganglia.
  - B) limbic system.
  - C) olfactory system.
  - D) hindbrain.
83. Parkinson disease and Tourette syndrome are neurological diseases associated with the:
- A) cerebellum.
  - B) frontal lobes.
  - C) basal ganglia.
  - D) thalamus.
84. The hippocampus and the amygdala are part of the:
- A) basal ganglia.
  - B) limbic system.
  - C) olfactory system.
  - D) hindbrain.

85. The hippocampus and the cingulate cortex participate in performing \_\_\_\_\_ functions.
- A) digestive
  - B) problem solving
  - C) sexual
  - D) memory
86. Which of the following structures is NOT part of the limbic system?
- A) hippocampus
  - B) amygdala
  - C) cingulate cortex
  - D) putamen
87. Removal of the amygdala in cats leads to:
- A) changes in temperature regulation.
  - B) sleep disruption.
  - C) emotional changes.
  - D) motor disruption.
88. There are \_\_\_\_\_ pairs of cranial nerves.
- A) 12
  - B) 24
  - C) 16
  - D) 8
89. Sensory and motor signals from the head and neck travel through:
- A) lumbar sections of the spinal cord.
  - B) sacral portions of the spinal cord.
  - C) the cranial nerves.
  - D) thoracic sections of the spinal cord.
90. Sensory and motor signals to the arms are sent through \_\_\_\_\_ sections of the spinal cord.
- A) sacral
  - B) thoracic
  - C) lumbar
  - D) cervical

91. Sensory and motor signals from the head and neck are sent to \_\_\_\_\_ sections of the spinal cord.
- A) thoracic
  - B) sacral
  - C) lumbar
  - D) None of the answers is correct.
92. Dermatomes are associated with the:
- A) peripheral nervous system
  - B) spinal nervous system.
  - C) autonomic nervous system.
  - D) cranial nervous system.
93. The law of Bell and Magendie states that the:
- A) dorsal spinal cord is motor and the ventral is sensory.
  - B) medial spinal cord is motor and the lateral is sensory.
  - C) dorsal spinal cord is sensory and the ventral is motor.
  - D) medial spinal cord is sensory and the lateral is motor.
94. Motor output from the spinal cord travels via the:
- A) dorsal spinal cord.
  - B) ventral spinal cord.
  - C) medial spinal cord.
  - D) lateral spinal cord.
95. Sensory input to the spinal cord travels via the:
- A) dorsal spinal cord.
  - B) ventral spinal cord.
  - C) medial spinal cord.
  - D) lateral spinal cord.
96. Increases in heart rate and inhibition of digestion are controlled by the:
- A) sympathetic nervous system.
  - B) parasympathetic nervous system.
  - C) spinal nervous system.
  - D) cranial nervous system.

97. The \_\_\_\_\_ nervous system works to help us "rest and digest," whereas the \_\_\_\_\_ nervous system helps initiate fight-or-flight responses.
- A) sympathetic; parasympathetic
  - B) sympathetic; spinal
  - C) parasympathetic; sympathetic
  - D) somatic; parasympathetic
98. The vagus, facial, and oculomotor nerves are the primary components of the:
- A) cranial nervous system.
  - B) sympathetic nervous system.
  - C) the parasympathetic nervous system.
  - D) spinal nervous system.
99. The \_\_\_\_\_ contains a sheet of neurons lining the esophagus, stomach, small intestine, and colon.
- A) enteric nervous system (ENS)
  - B) autonomic nervous system (ANS)
  - C) somatic nervous system (SNS)
  - D) central nervous system (CNS)
100. Language control is usually situated in the:
- A) same place on both hemispheres.
  - B) different locations on each hemisphere.
  - C) right hemisphere.
  - D) left hemisphere.
101. The left hemisphere primarily controls functions on the \_\_\_\_\_ side of the body.
- A) contralateral
  - B) left
  - C) ipsilateral
  - D) None of the answers is correct.
102. Spatial navigation is controlled by \_\_\_\_\_ of the brain.
- A) the left hemisphere
  - B) both hemispheres
  - C) the right hemisphere
  - D) None of the answers is correct.

103. The brain appears to have:
- A) mainly serial or hierarchical systems.
  - B) mainly parallel systems.
  - C) a combination of serial and parallel systems.
  - D) parallel systems at lower levels and serial processing farther up.
104. The notion of segregation of sensory and motor functions in the nervous system was postulated by:
- A) François Magendie and David Bell.
  - B) David Hubel.
  - C) John Hughlings Jackson.
  - D) Nige Torette.
105. Memory seems to be located:
- A) in the cingulate gyrus.
  - B) in the hippocampus.
  - C) throughout the brain.
  - D) primarily in the temporal lobes.
106. Changes in balance between excitation and inhibition account for symptoms in:
- A) Tourette syndrome.
  - B) Parkinson disease.
  - C) stroke.
  - D) both Tourette syndrome and Parkinson disease.

## Answer Key

1. D
2. C
3. C
4. A
5. C
6. D
7. B
8. A
9. C
10. C
11. A
12. D
13. D
14. B
15. D
16. A
17. A
18. A
19. B
20. B
21. A
22. C
23. D
24. D
25. C
26. A
27. C
28. A
29. C
30. A
31. C
32. B
33. B
34. C
35. C
36. B
37. C
38. C
39. A
40. A
41. A
42. B
43. A
44. A

45. D
46. C
47. C
48. D
49. D
50. A
51. C
52. D
53. C
54. B
55. D
56. C
57. B
58. B
59. C
60. C
61. B
62. B
63. D
64. B
65. B
66. A
67. D
68. A
69. B
70. B
71. C
72. C
73. B
74. D
75. A
76. C
77. B
78. A
79. B
80. C
81. A
82. A
83. C
84. B
85. D
86. D
87. C
88. A
89. C
90. D

- 91. D
- 92. B
- 93. C
- 94. B
- 95. A
- 96. A
- 97. C
- 98. C
- 99. A
- 100. D
- 101. A
- 102. C
- 103. C
- 104. A
- 105. C
- 106. D