AP Psychology
Chapter 3 Test

Please make all marks on the Scan-Tron provided.

Multiple Choice

1. In the opening vignette, what did the 5 million people who had fallen ill at the beginning of the 20th century suffered from?
   a lack of L-dopa

2. What was the purpose of discussing the encephalitis lethargica epidemic?
   to demonstrate how the nervous system underlies all psychological activity

3. What is the fundamental unit of the nervous system?
   the neuron

4. What are the types of neurons?
   Sensory neurons, motor neurons, and interneurons

5. What type of neurons send information to the brain?
   Afferent neurons, aka sensory neurons

6. What do motor neurons do?
   They send information to the muscles and glands of the body

7. What are interneurons responsible for?
   connecting other neurons to each other

8. What is the part of the neuron that receives information from other cells?
   The dendrites

9. What is in the cell body of a neuron?
   It is the part of the neuron that includes a nucleus containing the genetic material of the cell

10. What is an axon?
    the long extension from the cell body whose central function is to transmit information to other neurons

11. What is the myelin sheath, and what does it do to the transmission of neural messages?
    It is the part of the neuron that is a fatty layer that is wrapped around the axon, and it increases the speed of transmission

12. What is an example of a disorder that involves problems with the myelin sheath?
    Multiple sclerosis
13. Where are terminal buttons located, and what function do they serve?
   At the end of the neuron, and their function is to send signals from one neuron to the adjacent neurons

14. Why are terminal buttons important?
   Because they receive nerve impulses from the axon and transmit signals to adjacent cells

15. What is a synapse?
   the gap or space between neurons

16. How do neurons send signals?
   By releasing a chemical that alters the electrical charge of the next neuron

17. Does a neuron have a charge while at rest?
   Yes, it is polarized

18. To what does the resting potential of a neuron refer?
   the condition in which the neuron is not firing

19. What is the electrical difference between the inside and outside of a resting neuron?
   -70 millivolts

20. What are some characteristics of a graded potential?
   strength diminishes as the graded potential travels, and graded potentials are cumulative or additive

21. What is ‘action potential’ associated with?
   the ‘firing’ of the neuron

22. What are synaptic vesicles?
   the part of the axon that involves small sacs that contain neurotransmitters

23. What are neurotransmitters?
   The chemicals that transmit information from one cell to another

24. What does the firing of the presynaptic neuron do?
   It causes the neurotransmitters to be released into the synaptic cleft

25. What do excitatory neurotransmitters do?
   They depolarize the postsynaptic membrane

26. What do inhibitory neurotransmitters do?
   They hyperpolarize the post-synaptic neuron
27. What are the two types of neurotransmitters?
   inhibitory and excitatory

28. Which neurotransmitter has the capability of exciting nearly every neuron in the nervous system and appears to be involved in learning?
   glutamate

29. What happens to people with excessive levels of glutamate?
   They are likely to experience tingling and numbness

30. What would happen to you if you no longer produced glutamate?
   you would flunk out of college since you couldn't learn new information for the exams

31. What type of neurotransmitter is GABA?
   It is an inhibitory neurotransmitter

32. What does GABA regulate?
   Anxiety; it is used by about one-third of all the neurons in the brain

33. What are people with excessive levels of GABA likely to experience?
   anxiety

34. What are some things affected by levels of dopamine?
   Thoughts, feelings, motivation, behavior, and schizophrenia are all thought to be affected by dopamine levels

35. What are people with excessive levels of dopamine likely to experience?
   schizophrenia

36. What are the neural pathways that rely on dopamine involved in?
   emotional arousal, the experience of pleasure, and the association of particular behaviors with rewards

37. What is the function of the blood-brain barrier?
   To protect the brain from foreign substances

38. What things are affected by serotonin?
   Mood, sleep, and eating

39. What happens to people who do not have sufficient serotonin in the brain?
   They are likely to experience depression and anxiety

40. What are some examples of selective serotonin reuptake inhibitors (SSRI's), and what purpose do they serve?
   Zoloft, Paxil, and Prozac; they block the reuptake of serotonin by the presynaptic
41. Which neurotransmitter is associated with memory and learning? 
   acetylcholine

42. If someone does not have sufficient acetylcholine in the brain, what are they likely to experience? 
   difficulty with learning and memory

43. What are endorphins? 
   chemicals that elevate mood and reduce pain

44. Why are narcotics so popular? 
   because they are chemically very similar to endorphins

45. If I accidentally cut off my finger using a saw, what would my reaction be if I did not have any endorphins? 
   I would scream out and be in a huge amount of pain.

46. Which part of the nervous system is involved with sensory information and motor commands? 
   The somatic nervous system

47. With what is the somatic nervous system involved? 
   transmitting sensory information and controlling intentional actions

48. Which nervous system are the somatic nervous system and autonomic nervous system both part of? 
   The peripheral nervous system

49. What is the autonomic nervous system involved with? 
   basic life processes such as the beating of the heart or breathing

50. What would a person be like if their autonomic nervous system stopped working? 
   the person would be dead since it controls things such as heart and lungs

51. What does the sympathetic nervous system do? 
   In an emergency situation, the sympathetic nervous system prepares the body for fight or flight

52. How do the sympathetic and parasympathetic nervous systems operate? 
   They operate in reciprocal fashion to achieve proper functional behaviors under their control

53. What part of the autonomic nervous system is involved if I am sitting around watching television?
The parasympathetic nervous system

54. What is the oldest technology for studying the brain?
   EEG

55. What is involved in a PET scan?
   It is a technique which involves injecting radioactive glucose into the bloodstream in order to see which parts of the brain are active

56. What are some neuroimaging techniques?
   PET Scan, CT scan, and MRI

57. Which technique allows a researcher to observe the brain in action?
   A PET Scan

58. What can an fMRI determine?
   The activity of the brain involved in different types of cognitive tasks

59. What are nerves?
   Bundles of axons outside the spinal cord

60. What are tracts?
   The bundles of axons inside the spinal cord

61. What are cranial nerves?
   The 31 pairs of specialized nerves in the brain

62. What is included in the hindbrain?
   The medulla oblongata, the pons, and the cerebellum

63. What is the medulla oblongata’s function?
   It is the link between the spinal cord and the brain, and it is involved in heartbeat, circulation, and respiration

64. What happens to the activity level of the reticular formation as I am falling asleep?
   The activity level is decreasing

65. Why does alcohol interfere with movement and fine motor coordination?
   Because it affects a person’s cerebellum

66. What is one of the most important functions of the hypothalamus?
   Maintaining homeostasis

67. What does the thalamus do?
   It processes all of the information that I see, hear, taste, and feel, and then relays it to the higher brain centers
68. The amygdala seems to be important in what?
   fear responses

69. Which subcortical structure is likely to be involved in recall of emotionally significant events?
   The amygdala

70. What structure are you using when you study for an exam (i.e., when you try to intentionally store and recall information)?
   The hippocampus

71. What things are associated with the basal ganglia?
   Parkinson's disease, encephalitis lethargica, and understanding the meaning of what is seen or heard

72. How thick is the cerebral cortex?
   It is 3 mm

73. What are some functions of the cerebral cortex?
   It allows flexible construction of sequences of voluntary movements; it permits subtle discriminations among complex sensory patterns; it makes symbolic thinking possible

74. If I make very detailed plans for the upcoming weekend, what part of my brain am I utilizing?
   The association area

75. What are the two halves of the cerebral cortex called?
   cerebral hemispheres

76. What connects the two halves of the cerebral cortex?
   The corpus callosum

77. As I watch the sun rise or as I look at a painting, which lobe is the most active?
   The occipital lobe

78. Which part of the cerebral cortex receives sensory information from different sections of the body?
   The somatosensory cortex

79. What is the frontal lobe involved in?
   coordination of movement, abstract thinking, and social skills

80. What does the ability to speak grammatically correct require?
   a fully functioning Broca’s area
81. Which lobe is involved in listening to songs on the radio or to the sound of the ocean?
   The **temporal lobe**

82. What does Wernicke’s area control?
   The ability to understand what other people are saying

83. How is language an example of lateralization?
   Because it is located more in the left hemisphere than the right, but it is in both

84. For most right-handed people, what are some things that are dominant in the right hemisphere?
   Forming visual maps of the environment, face recognition, and music recognition

85. What is the basic unit of hereditary transmission?
   The **gene**

86. What does it mean if the genotype is homozygous?
   The two alleles are identical

87. What does it mean if the genotype is heterozygous?
   The two alleles are different

88. What are monozygotic twins?
   Twins that come from the same sperm and egg

89. What are dizygotic twins?
   Twins that come from the union of two sperm with two separate eggs

90. What can you conclude from a heritability coefficient of 0.97?
   The trait is almost entirely genetically determined

91. What types of things appears to have a genetic influence?
   Vocational interests, level of job satisfaction, and likelihood of divorce

92. What is evolution?
   A change in gene frequencies within a given population over many generations

93. Who proposed the theory of evolution by natural selection as written in the book, *The Origin of Species*?
   Charles Darwin

94. What is evolutionary theory?
   The idea that human behavior must be understood in the context of evolutionary and adaptive significance
95. What did Noam Chomsky propose?
The idea that children are born ‘knowing’ the features that are universal to language

96. What are language acquisition devices?
The neural structures for acquiring language that children are born with

97. What are the parts of the brain stem?
The forebrain, the midbrain, and the hindbrain

98. What is the part of the brain used in complex thoughts?
The cerebrum

99. What is the surface of the cerebrum called?
The cortex

100. Why hasn’t cloning humans been successful?
The failure of DNA to replicate