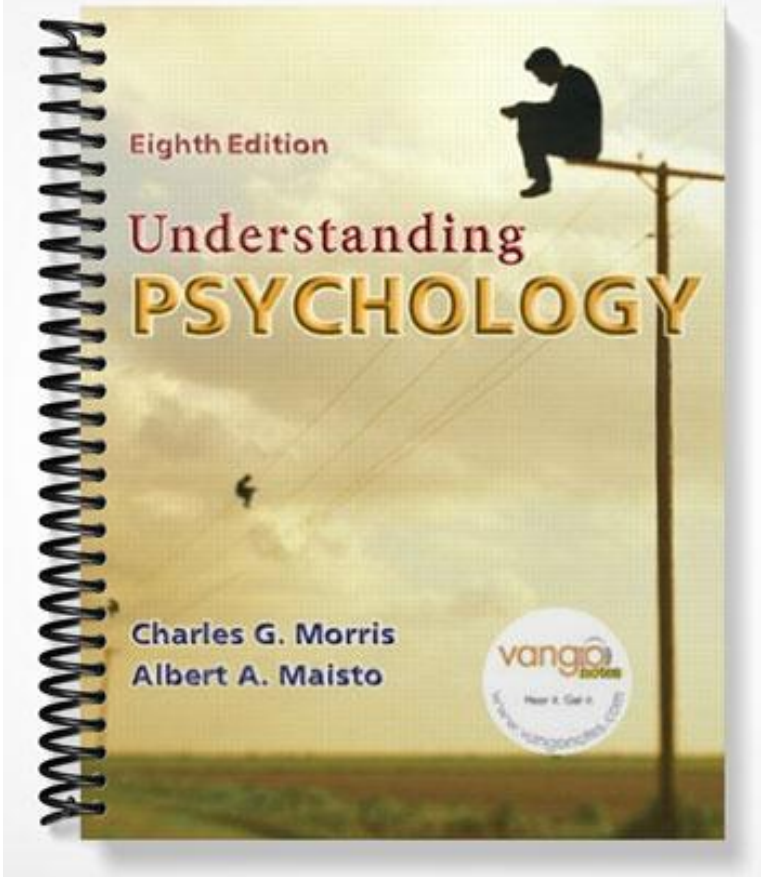
TEST BANK


Eighth Edition
Understanding
PSYCHOLOGY
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Chapter 2: The Biological Basis of Behavior

Multiple-Choice Questions

Introduction

1. The human brain has, on average, _____ cells. 43
   a. 100 million c. 10 billion F, d
   b. 1 billion d. 100 billion New

2. The brain is the _____ control center for everything we say and do. 43
   a. master c. peripheral F, a
   b. secondary d. tertiary Old

3. When young children have half their brain removed, _____. 43
   a. it ultimately leads to their death F, c
   b. it leads to permanent, severe disabilities Rev
   c. they retain most of their normal abilities
   d. the missing half is eventually regenerated

4. In regards to the brain, the term "plasticity" refers to _____. 43
   a. brittleness, or rigidity c. level of complexity C, d
   b. easily broken or "cracked" d. ability to adapt to new conditions Old

5. The field of psychobiology explores the ways in which _____. 43
   a. biological processes affect our behavior C, a
   b. our mental state affects our physical health Old
   c. behavioral patterns affect biological development
   d. evolution has shaped our instincts, drives, urges, and needs

6. Psychobiology overlaps with a much larger disciplinary field called _____, which specifically focuses on the study of the brain and the nervous system. 43 C, d
   a. endocrinology c. neuroimmunology Old
   b. behavioral genetics d. neuroscience

Neurons: The Messengers

7. The smallest unit in the nervous system is called the _____. 44
*** a. dendrite c. axon F, b
   b. neuron d. nerve Old

   4 yr.: 88% r = .10; 2 yr.: 86% r = .28

8. There are approximately _____ neurons in the brain of an average human being. 44
   a. 100 thousand c. 100 billion F, c
   b. 100 million d. 100 trillion Old

9. The smallest part of the nervous system is called a _____. 44
*** a. lobe c. nerve F, d
   b. gland d. neuron Old

10. The cell which underlies the activity of the entire nervous system is the _____. 44
a. glial cell c. neuron F, c
b. epidermal cell d. T-cell Old

4 yr.: 96% r = .11

11. *** The part of a neuron which contains the nucleus, the largest amount of mass in the cell, and is where metabolism takes place, is the _____. 44 C, d
a. axon c. cell membrane Old
b. dendrite d. cell body

12. *** The short fibers which extend from the neuron, allowing it to receive messages from other neurons are _____. 44 C, b
a. axons c. nerve bundles Old
b. dendrites d. synapses

13. *** The function of the neuron's dendrite is to _____. 44 C, c
a. conduct electrical impulses toward other neurons Old
b. regulate the neuron's life processes
c. receive messages from neighboring neurons
d. insulate against leakage of electrical impulses

14. *** The part of the neuron that carries outgoing messages either to another neuron or to a muscle or gland is the _____. 44 C, b
a. myelin sheath c. dendrite Old
b. axon d. cell body

15. *** The function of the neuron's axon is to _____. 44 C, a
a. conduct electrical impulses toward other neurons Old
b. regulate the neuron's life processes
c. receive messages from neighboring neurons
d. insulate against leakage of electrical impulses

16. Axons in the spinal cord can reach a length of up to _____ feet. 44
a. two c. four F, b
b. three d. five Old

17. Each neuron has _____ axon(s). 44
a. one c. four F, a
b. two d. eight Old

18. Neurons typically have _____. 44
a. one axon and one dendrite c. many axons and one dendrite F, b
b. one axon and many dendrites d. many axons and many dendrites Old

19. A group of axons bundled together is called a _____. 44
a. synaptic vesicle c. nerve C, c
b. primary cluster d. myelinated pathway Old

20. A group of axons bundled together is called a _____. 44
a. synaptic vesicle c. tract C, c
b. primary cluster d. myelinated pathway Old

21. A nerve is really a(n) _____. 44
*** a. group of dendrites bundled together C, d
b. afferent neuron Old
c. cell nucleus
d. group of axons bundled together

4 yr.: 89% r = .27

22. A nerve is a group of _____ bundled together. 44
a. axons c. interneurons C, a
b. dendrites d. glial cells Old

23. A nerve is composed of _____. 44
*** a. a neuron and its synapses c. elongated glial cells C, d
b. a bundle of synapses d. a bundle of axons Old

24. Within a neuron, information always flows from _____. 44
*** a. dendrite to cell body to axon F, a
b. cell body to axon to dendrite Old
c. cell body to dendrite to axon
d. axon to cell body to dendrite

4 yr.: 69% r = .28 4 yr.: 76% r = .29

25. The white, fatty covering that surrounds some axons is _____. 44
a. the cell membrane c. the synaptic cleft C, d
b. glial tissue d. the myelin sheath Old

26. The primary purpose of the myelin sheath is to _____. 44
*** a. provide a place for neural respiration and cell metabolism to occur F, c
b. provide a soft covering to hold axons in place Old
c. insulate the neuron so it can transmit information more efficiently
d. receive messages from outside the neuron and carry them to the cell nucleus

27. The term "white matter" refers to _____. 44
a. glial cells c. myelinated axons C, c
b. unmyelinated axons d. interneurons Old

28. The term "gray matter" refers to _____. 44
a. glial cells c. myelinated axons C, b
b. unmyelinated axons d. interneurons Old

29. Terminal buttons are located _____. 44
a. in the cell body c. in the nodes of the myelin sheath F, d
b. at the end of the dendrite d. at the end of the axon New

30. Terminal buttons release chemicals called _____. 44.
a. neurotransmitters c. hormones F, a
b. antigens d. antibodies d

31. The myelin sheath _____ of neural messages. 45
a. blocks the flow c. redirects the flow F, d
b. lessens the speed d. increases the speed Old

32. Neurons that collect messages from sense organs and carry those messages to the spinal cord or the brain are called _____. 45
C, b
a. primary neurons c. interneurons Old
b. sensory neurons d. motor neurons

33. Neurons that collect messages from sense organs and carry those messages to the spinal cord or the brain are called _____ neurons. 45
C, b
a. primary c. association Old
b. afferent d. efferent

34. Neurons that carry messages from the spinal cord or the brain to the muscles and glands are called _____. 45
C, d
a. primary neurons c. interneurons Old
b. sensory neurons d. motor neurons

35. Neurons that carry messages from the spinal cord or the brain to the muscles and glands are called _____ neurons. 45
C, d
a. primary c. association Old
b. afferent d. efferent

36. Neurons that carry messages from one neuron to another are called _____. 45
a. primary neurons c. interneurons C, c
b. sensory neurons d. motor neurons Old

37. Neurons that carry messages from one neuron to another are called _____ neurons. 45
a. primary c. association C, c
b. afferent d. efferent Old

38. Cells that form the myelin sheath are called _____. 45
a. interactive neurons c. glial cells C, c
b. adipose tissues d. epidermal cells Old

39. You are a cell in the human nervous system. Your primary function is to provide support for neurons, hold them together, and help remove waste products and other substances which could otherwise harm them. You are a(n) _____ cell. 45
A, b
Old
a. epidermal c. adipose
b. glial d. lymph

40. Recent evidence suggests that glial cells may play an important role in _____. 45
a. learning and memory c. growth and metabolic regulation F, a
b. endocrine functioning d. maturation and aging Old

The Neural Impulse

41. The language used by neurons to communicate _____. 46
a. is not yet known, despite years of research F, b
b. involves simple "yes-no," "on-off" electrochemical impulses New
c. involves neurons transitioning from one of four different electrochemical states to another
d. is extremely flexible and complex, similar to human spoken language

42. Electrically charged particles found both inside and outside the neuron are _____. 46
a. follicles c. free radicals C, d
b. nodes d. ions Old

43. Resting potential is the electrical charge across a neural membrane when _____ ions concentrate on the outside and _____ concentrate on the inside. 46 F, d Old
a. not enough negative; excess positive
b. not enough positive; excess negative
c. excess negative; excess positive
d. excess positive; excess negative

44. *** During its resting state, the electrical charge inside the neuron is _____ the electrical charge outside the neuron. 46 F, b Old
a. positive compared to
b. negative compared to
c. larger than
d. smaller than

45. *** The cell body is enclosed by the _____. 46 F, c Old
a. axon
b. dendrite
c. cell membrane
d. myelin sheath

46. The cell membrane of a neuron is _____. 46 F, c New
a. impermeable
b. translucent
c. semi-permeable
d. completely permeable

47. An electrical charge occurs across the neural membrane when positive ions concentrate on the outside and negative ions concentrate on the inside, is known as _____. 46 C, d Old
a. flux
b. action potential
c. depolarization
d. resting potential

48. Organisms or fluids attempting to enter the cell body of a neuron must first pass through the _____. 46 A, b Old
a. myelin sheath
b. cell membrane
c. axon
d. dendrite

49. *** When the electrical charge inside a neuron is negative, in relation to the outside, the neuron is said to be in a state of _____. 46 C, c Old
a. equilibrium
b. shock
c. polarization
d. depolarization

50. When a neuron is polarized, _____. 46 F, b Old
a. both positive and negative ions are concentrated outside the neural membrane
b. positive ions are concentrated outside the neural membrane while negative ions are concentrated inside the membrane
c. negative ions are concentrated outside the neural membrane while positive ions are concentrated inside the membrane
d. both positive and negative ions are concentrated inside the neural membrane

51. *** When a neuron is polarized, _____. 46 F, b Old
a. it cannot fire
b. the electrical charge inside is negative relative to the outside
c. the electrical charge inside is positive relative to the outside
d. sodium ions pass freely through the cell membrane

52. When enough sodium atoms have entered the neuron to make the inside positively charged relative to the outside, the neuron is said to be _____. 46 C, d Old
a. resting
b. polarized
c. diffusing
d. depolarized

53. Another term for a neural impulse is a(n) _____ potential. 47
a. resting c. action C, c
b. graded d. kinetic Old

54. The process by which a neuron is depolarized in a surge running down the length of an axon is called a(n)_____ potential. 47
C, c
a. resting c. action Old
b. graded d. kinetic

55. When sodium ions flow into a neuron and depolarize it, they create _____. 47
a. a relative refractory period c. an action potential C, c
b. breakdown of the cell nucleus d. internal combustion Old

4 yr.: 84% r = .31

56. When sodium ions flow into a neuron and depolarize it, we say the neuron has _____. 47
a. been neutralized c. refracted C, d
b. reached equilibrium d. fired Old

2 yr.: 81% r = .11

57. Which of the following statements is true? 47
*** a. Signals above the threshold of excitation will prevent a neuron from firing. F, d
b. The strength (intensity) of a neuron's action potential depends on the strength of its excitation. Old
c. A neuron fires in response to every message it receives.
d. Impulses in myelinated neurons may reach speeds of nearly 400 feet per second.

58. If an incoming message is not strong enough to cause a neuron to fire, it may cause a 47
*** shift in the electrical charge of just a tiny area of the neuron. This shift, which quickly C, a
fades away, is called a(n)_____. Old
a. graded potential c. action potential
b. resting potential d. transitional polarization

59. A neuron will fire _____. 47
a. in response to every impulse it receives F, c
b. only when it receives two incoming messages at the same time Old
c. only when the incoming message is stronger than the neuron's firing threshold
d. only when the incoming messages are weaker than the neuron's firing threshold

4 yr.: 81% r = .51; 4 yr.: 81% r = .28

60. The level a neural impulse must exceed to cause a neuron to fire is called the _____. 47
a. polarization limit c. threshold of excitation C, c
b. kinetic ceiling d. kinetic potential Old

61. A frog muscle is stimulated with an electric current but the muscle doesn't twitch. This 47
*** probably happens because_____. A, c
a. the graded potential is too great Old
b. the synapses are underactive
c. the threshold of excitation was not reached
d. ionic balance has been restored

62. The "all or none" law is the principle stating that _____. 47
a. a neuron must be receiving only “fire” messages through its dendrites or it will not fire at all C, c Rev
b. all the neurons in a particular area of the brain fire simultaneously or not at all
c. a neuron fires at full strength or not at all
d. all neurons in an area fire at the same intensity or not at all

63. The "all or none law" refers to the fact that _____. 47
*** a. all the neurons in a single nerve fire simultaneously or not at all C, c
b. all the neurons in a particular area of the brain fire simultaneously or not at all Old
c. a neuron fires at full strength or not at all
d. all the dendrites on a neuron must receive messages telling the neuron to fire or it will not fire at all

4 yr.: 97% r = .27

64. A neuron is likely to fire _____ when stimulated by a strong signal. 47
a. more intensely c. in a coded sequence F, d
b. for a longer period of time d. more often Old

65. Which of the following is true of neural impulses in a single neuron? 47
*** a. The neuron may fire during the absolute refractory period. F, d
b. The strength of the neural impulse increases as the strength of the incoming message increases. Old
c. The strength of the neural impulse decreases as the strength of the incoming message increases.
d. The strength of the neural impulse is the same each time the neuron fires.

2 yr.: 53% r = .21

66. Which of the following statements is true of the activity of neurons? 47
*** a. The nerve impulse fades in strength as it travels through the neuron. F, c
b. Transmission of information at synapses occurs by means of direct physical contact between the nerve cells. Old
c. The size and speed of the neural impulse is the same for a particular axon regardless of the strength of the stimulus that sets it off.
d. None of the above are true.

4 yr.: 73% r = .14

67. Immediately after firing, a neuron cannot fire again no matter how strong the incoming 47
*** messages may be. This period is called the _____ period. C, a
a. absolute refractory c. primary refractory Old
b. relative refractory d. polarization

68. The period after firing in which a neuron is returning to its normal polarized state 47
*** and will fire again only if the incoming message is extremely powerful is the _____ period. C, b
a. absolute refractory c. secondary refractory Old
b. relative refractory d. recovery

69. How can the nervous system represent increases in the intensity of a stimulus? 47
*** a. Only by an increase in the size of the action potential in each neuron that fires. A, d
b. Only by an increase in the number of neurons being fired. Old
c. Only by an increase in the frequency of firing in each neuron.
d. By increasing the number of neurons firing and the frequency of firing in each neuron.

4 yr.: 72% r = .22

70. A teacher grading papers opens the door of the room in which she has been working and becomes aware of loud rock music coming from her son's radio. When she asks him to turn it off, he asks why she is just noticing it now when he's had it on for over 20 minutes. Which of the following psychological explanations is the **LEAST** plausible explanation of what occurred after she opened the door? 47 A, d Old
a. The volume of the music reached the threshold needed to fire her neurons.
b. The neurons involved began to fire more quickly than they had before.
c. The number of neurons firing increased considerably, bringing the music to her conscious awareness.
d. The strength of the neural impulses in each of the firing neurons increased markedly, bringing the music to her conscious awareness.

71. A young man is taking an important test in a large room. He is progressing nicely when, about ten minutes into the exam, the proctor opens the window and he becomes distracted by the noise of the traffic outside. Which of the following psychological explanations is the **LEAST** plausible explanation for what occurred when the window was opened? 47
*** A, c Old
a. The volume of the traffic sounds reached the threshold needed to fire many of his neurons.
b. The neurons involved began to fire more quickly than they had before.
c. The neurons involved went into their absolute refractory period.
d. The number of neurons firing increased considerably, bringing the noise of the traffic into his conscious awareness.

4 yr.: 53% r = .22

72. According to the textbook, which of the following statements is **FALSE**? 44-47
*** a. The nerve impulse involves the exchange of electrically charged ions across the cell membrane. F, d Old
b. Within a neuron, information flows from dendrites to cell body to axon.
c. Some neurons have axons that are several feet long.
d. Neurons in the central nervous system have myelin sheaths, while those in the peripheral nervous system do not.

4 yr.: 75% r = .29 4 yr.: 83% r = .22

73. "Depolarization," "absolute refractory period," and "threshold" are terms that apply most directly to _____. 46-47
*** C, d Old
a. brain wave patterns (EEGs) c. neural synapses
b. computerized axial tomography d. action potentials

74. Which of the following is NOT true of neural impulses? 44-47
*** a. The neuron fires in response to every impulse it receives. F, a Old
b. Neural impulses travel at speeds ranging from 3 feet per second to 400 feet per second.
c. The incoming message must be above a certain threshold to cause a neural impulse.
d. The neuron may fire during the relative refractory period.

The Synapse

75. The tiny space between the axon terminal and the dendrite of another neuron is called the _____. 47 C, c Old
a. synaptic vesicle
b. synaptic knob
c. synaptic cleft
d. synapse

4 yr.: 83% r = .32; 4 yr.: 86% r = .19

76. *** The entire area composed of the axon terminal of one neuron, the synaptic cleft, and the dendrite or cell body of the next neuron is called the _____. 47 C, d Old
a. synaptic vesicle
b. synaptic knob
c. synaptic space
d. synapse

2 yr.: 81% r = .34

77. At the end of each branch of an axon, there is a tiny knob called the _____. 48 C, c Old
a. synaptic cleft
b. synaptic vesicle
c. synaptic knob
d. receptor site

78. At the end of each branch of an axon, there is a tiny knob called the _____. 48 C, c Old
a. synaptic cleft
b. synaptic vesicle
c. terminal button
d. receptor site

79. When a neural impulse crosses the synaptic space, it does so _____. 48 C, c Old
a. like an electric spark
b. via direct contact between the axon and the dendrite
c. through chemicals
d. through some, as yet, unknown process

80. *** The action potential causes neurotransmitters to be released into the _____. 48 F, b Old
a. myelin sheath
b. synaptic space
c. axon
d. cell membrane

81. Tiny sacs in a synaptic knob that release chemicals into the synapse are called _____. 48 C, a Old
a. synaptic vesicles
b. synaptic knobs
c. synaptic nodes
d. synaptic clefts

82. When a neural impulse reaches the end of an axon, it causes tiny oval sacs at the end of the axon to release chemicals called _____. 48 F, b Old
a. hormones
b. neurotransmitters
c. electrolytes
d. antioxidants

83. Chemicals released by the synaptic vesicles that travel across the synaptic space and affect adjacent neurons are called _____. 48 C, a Rev
a. neurotransmitters
b. androgens
c. pathogens
d. ions

84. *** The term "neurotransmitter" refers to _____. 48 C, a Old
a. a chemical released from the axon terminal into the synapse
b. any one of a number of chemical compounds that increases the activity of the endocrine system
c. the chemical substance which is produced when a nerve impulse moves through the cell body of a neuron
d. the DNA contained in the nucleus of every neuron

85. Locations on a neuron into which a specific neurotransmitter fits like a key into a lock are called _____. 48 C, c Old
a. synaptic vesicles
b. neural chiasms
c. receptor sites
d. response terminals

86. *** Which of the following is **NOT** true of all neurotransmitters? 48 F, d Old
a. They are chemicals.
b. They are stored in synaptic vesicles.
c. They are released into the synaptic cleft.
d. They increase the likelihood that the next neuron will fire.

4 yr.: 66% r = .18; 2 yr.: 61% r = .16

87. *** Which of the following is **NOT** true of all neurotransmitters? 48 F, d Old
a. They are chemicals.
b. They either increase or decrease the likelihood the next neuron will fire.
c. They are released into the synaptic space.
d. They are destroyed by chemicals in the synapse.

4 yr.: 88% r = .26

88. _____ plays a critical role as a transmitter where neurons meet skeletal muscles. 48-49 F, a Old
a. Acetylcholine
b. Dopamine
c. Serotonin
d. Endorphin

89. An elderly male is diagnosed as having Alzheimer's disease. His physician tells him the disorder involves a deficiency of _____. 48-49 A, a Old
a. acetylcholine
b. dopamine
c. serotonin
d. norepinephrine

90. *** Which of the following neurotransmitters is known for its role in schizophrenia and Parkinson's disease? 48-49 F, b Old
a. acetylcholine
b. dopamine
c. serotonin
d. norepinephrine

91. *** A schizophrenic is **MOST** likely to have a problem with which of the following neurotransmitters? 49 A, b Old
a. acetylcholine
b. dopamine
c. serotonin
d. norepinephrine

4 yr.: 29% r = .20

92. An elderly person with Parkinson's disease is **MOST** likely to have a problem with which of the following neurotransmitters? 48-49 A, b Old
a. acetylcholine
b. dopamine
c. serotonin
d. norepinephrine

4 yr.: 50% r = .23

93. A middle-aged person who is depressed **MOST** likely has a problem with which of the following neurotransmitters? 49 A, c Old
a. acetylcholine
b. dopamine
c. serotonin
d. norepinephrine

94. Which of the following neurotransmitters is **MOST** like a "master key" that opens many locks and attaches to as many as a dozen receptor sites? 49
C, a
Old
a. serotonin
b. norepinephrine
c. dopamine
d. acetylcholine

95. The neurotransmitter known as the "mood molecule" is _____. 49
C, c
Old
a. acetylcholine
b. dopamine
c. serotonin
d. norepinephrine

96. Endorphins _____. 49
F, c
Old
a. are found where neurons meet skeletal muscles
b. are less powerful than enkaphalins
c. reduce pain messages in the brain
d. are radically different in function from neurotransmitters

4 yr.: 86% r = .22; 2 yr.: 78% r = .39

97. Pain-reducing chemicals that occur naturally in the brain are called _____. 49
C, d
Old
a. globulins
b. androgens
c. histamines
d. endorphins

98. Painkilling drugs that lock into the same receptor sites as endorphins are _____. 49
F, b
Old
a. barbiturates
b. opiates
c. neuroleptics
d. beta-blockers

99. Because they have similar chemical structures, morphine and other opiates are able to lock into receptor sites for _____. 49
F, d
Old
a. acetylcholine
b. dopamine
c. serotonin
d. endorphins

4 yr.: 85% r = .14; 2 yr.: 88% r = .23

100. Schizophrenia is related to a(n) _____. 49
F, a
Old
a. overabundance of dopamine
b. blocking of dopamine receptor sites
c. lack of adequate dopamine
d. inability to reabsorb dopamine back into the synaptic vesicles

101. Depression is linked to an _____. 49
F, a
Old
a. undersupply of serotonin and norepinephrine
b. undersupply of serotonin and an oversupply of norepinephrine
c. oversupply of serotonin and an undersupply of norepinephrine
d. oversupply of serotonin and norepinephrine

Neural Plasticity and Neurogenesis

102. M. R. Rosenzweig examined rats by studying the _____. 50
F, c
Old
a. behavioral effects of lesions in different parts of their brains
b. sexual orientation effects of prenatal exposure to maternal hormones
c. effects on their brains of exposure to impoverished or enriched environments
d. effects on their brains of electrical stimulation to the frontal and parietal lobes

103. Rosenzweig's study found that when compared to rats raised in an impoverished environment, rats raised in an enriched environment had _____ neurons with _____ synaptic connections.
50
F, d
Old

a. smaller; fewer
b. smaller; more
c. larger; fewer
d. larger; more

104. In recent research, Rosenweig found that a stimulating environment results in larger neurons with more synaptic connections _____.
50
F, d
Old

a. only in infant rats
b. only in adolescent rats
c. only in mature rats
d. in rats of any age

105. The ability of the brain to change in response to experience is called _____.
50
C, d
Old

a. neurogenesis
b. neural plasmosis
c. reticular formation
d. neural plasticity

106. Each of the following is true **EXCEPT** _____.
51
F, a
New

a. plasticity in the brain is limited to changes that affect only motor behaviors
b. in deaf people, an area of the brain usually responsible for hearing rewires itself to read lips and sign language
c. experience causes changes in the strength of communication across synapses
d. the brains of female mammals change in response to hormonal changes that occur during pregnancy

107. The process in which stem cells become neurons is known as _____.
52
C, b
Old

a. plasmosis
b. neurogenesis
c. neural plasticity
d. reticular formation

108. Traditionally, injuries to the spinal cord have been considered _____.
52
F, c
Old

a. temporary
b. treatable
c. permanent
d. fatal

109. Undifferentiated precursor cells that, under the right conditions, can give rise to any specialized cell in the body are called _____ cells.
52
C, a
Old

a. stem
b. glial
c. receptor
d. T-cells

110. Before birth, human fetuses have a large supply of cells known as _____ cells, that are capable of becoming neurons.
52
F, a
Old

a. stem
b. Schwann
c. mast
d. glial

111. In tests with animals, stem cells transplanted into a brain or spinal cord _____.
52
F, d
Old

a. died almost immediately
b. functioned for a while, but slowly died off
c. survived but did not function or replace damaged cells
d. migrated to damaged areas and began to generate specialized neurons for replacement

112. In patients suffering from Parkinson's disease, fetal nerve cell transplants have improved motor control _____.
52
F, b
Old

a. no more than 3 to 5 years
b. for periods of 5 to 10 years
c. for periods of 10 to 20 years
d. permanently

113. In research with human patients suffering from Parkinson's disease, fetal nerve cell transplants _____. 52 F, d Old
a. resulted in no improvement in motor control
b. resulted in only sporadic, temporary improvements in motor control
c. improved motor control for periods of only 1 to 4 years
d. improved motor control for periods of 5 to 10 years

114. Research on human brain tissue has found that human brains are_____. 52 F, d Old
a. not capable of neurogenesis after birth
b. capable of neurogenesis only during early childhood
c. capable of neurogenesis only through adolescence
d. capable of neurogenesis even in adulthood

115. The chemical _____ has been shown in rats to stimulate undamaged nerve fibers to grow new connections and restore motor functioning. 52 F, b Old
a. adenosine
b. inosine
c. leptin
d. thyroxin

The Central Nervous System

116. The nervous system is comprised of two major parts: _____. 53 F, a Old
*** a. the central nervous system and the peripheral nervous system
b. the afferent nervous system and the efferent nervous system
c. the sympathetic nervous system and the parasympathetic nervous system
d. the brain and the spinal cord

2 yr.: 73% r = .29

117. The two main components of the human nervous system are the _____ nervous system and the _____ nervous system. 53 F, c Old
*** a. somatic; autonomic
b. sympathetic; parasympathetic
c. central; peripheral
d. spinal; endocrine

4 yr.: 93% r = .17

118. The division of the nervous system that consists of the brain and spinal cord is the _____ system. 53 C, c Old
a. peripheral nervous
b. endocrine
c. central nervous
d. primary nervous

119. The central nervous system contains about _____ percent of the body's neurons. 53 F, d Old
a. 10
b. 30
c. 70
d. 90

120. The brain and spinal cord contain about _____ percent of the body's neurons. 53 F, d Old
a. 15
b. 40
c. 65
d. 90

4 yr.: 83% r = .18

121. The peripheral nervous system contains about _____ percent of the body's neurons. 53 F, a Old
a. 10
b. 30
c. 70
d. 90

122. The division of the nervous system that connects the brain and spinal cord to the rest of the body is the _____ system. 53
C, a
Old
a. peripheral nervous
b. endocrine
c. central nervous
d. secondary nervous

123. Structurally, the nervous system has _____ major parts. 53
F, a
Old
a. two
b. three
c. four
d. five

124. The central nervous system consists of _____. 53
*** C, b
Old
a. the parasympathetic and sympathetic divisions
b. the brain and spinal cord
c. muscles and glands
d. sense organs and sensory neurons

4 yr.: 83% r = .25

125. The central nervous system consists of _____. 53
*** C, b
Old
a. the somatic and autonomic nervous systems
b. the brain and the spinal cord
c. all the nerves in the center of the body that take messages from the environment and send them to the brain and spinal cord
d. the sympathetic and parasympathetic divisions, which control the inner or central part of the body

126. All nerve cells and fibers that are **NOT** in the brain or spinal cord make up the _____ nervous system. 53
*** C, b
Old
a. central
b. peripheral
c. autonomic
d. sympathetic

127. The autonomic nervous system consists of _____. 54
C, a
Old
a. the parasympathetic and sympathetic divisions
b. the brain and spinal cord
c. muscles and glands
d. sense organs and sensory neurons

128. The branch of the nervous system which transmits to the brain information about body movements and the external environment is the _____ nervous system. 54
C, c
Old
a. central
b. autonomic
c. somatic
d. tertiary

129. The branch of the nervous system which transmits information to and from the internal organs and glands is the _____ nervous system. 54
C, b
Old
a. central
b. autonomic
c. somatic
d. tertiary

130. The sympathetic and parasympathetic divisions are part of the _____ nervous system. 54
C, d
New
a. central
b. somatic
c. tertiary
d. autonomic

The Brain

131. The _____ is the seat of awareness and reason. 54
a. brain c. peripheral nervous system C, a
b. spinal cord d. endocrine system Old

132. The brain can be divided into _____ layers that evolved in different stages of evolution. 54
F, b
a. two c. four Old
b. three d. five

133. Which of the following is **NOT** one of the layers of the brain that evolved in different stages of evolution? 54
F, a
a. the executive core c. the limbic system Old
b. the central core d. the cerebral hemispheres

134. At the point where the spinal cord enters the skull, it becomes the _____. 54
a. limbic system c. midbrain F, b
b. hindbrain d. forebrain Old

135. The _____ is believed to be the earliest part of the brain that evolved. 54
a. limbic system c. midbrain F, b
b. hindbrain d. forebrain Old

136. The part of the brain containing the medulla, the pons, and the cerebellum is the _____. 54-55
C, c
a. limbic system c. hindbrain Old
b. cortex d. corpus callosum

137. *** The part of the hindbrain that controls such functions as breathing, heart rate, and blood pressure is the _____. 54
C, c
a. cerebral cortex c. medulla Old
b. pons d. cerebellum

4 yr.: 79% r = .33; 4 yr.: 84% r = .40

138. The point at which the nerves from the left side of the body cross over into the right side of the brain, and vice versa, is the _____. 55
F, c
a. amygdala c. medulla Old
b. pons d. cerebellum

139. *** A college student is having difficulty staying awake during the day and sleeping through the night. Her difficulties are **MOST** likely due to problems in the _____. 55
A, d
a. cerebellum c. basal ganglia Old
b. substantia nigra d. pons

2 yr.: 75% r = .32

140. The structure in the hindbrain that transmits messages to the upper areas of the brain and produces chemicals that help maintain our wake-sleep cycle is the _____. 55
C, d
a. cerebellum c. basal ganglia Old
b. substantia nigra d. pons

141. A young woman recovering from a blow to her head finds she has great difficulty maintaining her balance and coordinating her movements. Injury to which part of her brain is likely to be causing her difficulties? 55 A, a Old

a. cerebellum
b. medulla
c. cerebral cortex
d. thalamus

4 yr.: 51% r = .42

142. The cerebellum _____. 55 F, c Old

a. controls blood pressure
b. is involved in emotional behavior
c. coordinates actions so that movements are efficient
d. relays messages from the sensory receptors

4 yr.: 61% r = .28; 2 yr.: 64% r = .38

143. *** The _____ is located to the rear of the brain stem; it coordinates voluntary movement and controls balance. 55 F, c Old

a. medulla
b. cerebrum
c. cerebellum
d. limbic system

144. The part of the hindbrain sometimes called the "little brain" is the _____. 55 F, b Old

a. medulla
b. cerebrum
c. cerebellum
d. limbic system

145. *** Susan has a degenerative disease which causes her to lose her balance easily and to move in a jerky and uncoordinated way. She cannot drink from a glass without spilling it or touch her toes without falling over. This disease is probably affecting her _____. 55 A, c Old

a. hypothalamus
b. midbrain
c. cerebellum
d. reticular formation

146. The part of the hindbrain involved in emotional control, attention, memory, and coordinating sensory information is the _____. 55-56 F, c Old

a. medulla
b. cerebrum
c. cerebellum
d. midbrain

147. Recent research indicates that disorders such as autism, schizophrenia, and attention deficit disorder all may be associated with dysfunction in the _____. 56 F, a New

a. cerebellum
b. medulla
c. pons
d. midbrain

148. *** The part of the brain where pain is registered and which is important in hearing and sight is the _____. 56 C, c Old

a. medulla
b. hypothalamus
c. midbrain
d. reticular formation

149. The midbrain is largely involved in each of the following functions **EXCEPT** _____. 56 F, b Old

a. perception of pain
b. regulation of hunger and thirst
c. hearing
d. sight

150. *** The structure directly over the brain stem that relays and translates sensory information is the _____. 56 C, d Old

a. hippocampus
b. hypothalamus
c. amygdala
d. thalamus

151. *** The part of the brain which acts as a switchboard or relay station, sending incoming messages to the appropriate areas of the brain, is the _____. 56 C, a Old
a. thalamus
b. hypothalamus
c. pons
d. medulla

152. The part of the brain that acts like a "thermostat," regulating hunger, thirst, sexual drive, and body temperature is the _____. 56 C, d Old
a. hippocampus
b. amygdala
c. thalamus
d. hypothalamus

153. *** The part of the brain responsible for emotional behavior such as experiencing rage, terror, or pleasure is the _____. 56 C, d Old
a. hippocampus
b. amygdala
c. thalamus
d. hypothalamus

4 yr.: 54% r = .37; 4 yr.: 64% r = .10

154. *** Eating, drinking, sexual behavior, sleeping, and temperature control are most strongly influenced by the _____. 56 C, d Old
a. medulla
b. amygdala
c. pons
d. hypothalamus

4 yr.: 83% r = .31 4 yr.: 87% r = .20

155. *** Garfield is having great difficulty controlling his appetite. All he wants to do is eat, and no matter how much he eats, he is still hungry. His weight is approaching 400 pounds and he still constantly wants to eat. His physician says the problem is due to a disorder in a specific center of the brain. That brain center is **MOST** likely to be the _____. 56 A, d Old
a. amygdala
b. hippocampus
c. thalamus
d. hypothalamus

156. After his last class, Carlos went out to his car to get some books to return to the library. He found that during the day someone had badly smashed his rear bumper. He was furious and began pounding on the hood and shouting obscenities. What area of the brain was guiding his behavior? 56 A, b Old
a. the thalamus
b. the hypothalamus
c. the medulla
d. the midbrain

2 yr.: 70% r = .35

157. Darlene just found out that she made the dean's list, and she's in ecstasy -- singing and dancing down the corridor. Which area of the brain is directing her emotional reaction? 56 A, a Old
a. the hypothalamus
b. the thalamus
c. the reticular formation
d. the cingulate gyrus

158. The network of neurons in the hindbrain, midbrain, and part of the forebrain whose primary function is to alert and arouse the higher parts of the brain is the _____. 56 C, b Old
a. limbic system
b. reticular formation
c. temporal lobe
d. endocrine system

159. *** The part of the brain that sends "alert" messages to the cerebral cortex is the _____. 56 C, b Old
a. limbic system
b. reticular formation
c. temporal lobe
d. endocrine system

160. Anesthetics work primarily by shutting down the _____. 56
*** a. limbic system c. dopamine receptor sites F, d
b. endocrine system d. reticular formation Old

161. Permanent damage to the reticular formation can cause _____. 56
a. hyperactive behavior c. a coma F, c
b. problems with equilibrium d. nightmares Old

162. The part of the brain most people think of when they talk about the brain is the _____. 56
*** a. cerebral cortex c. medulla F, a
b. pons d. cerebellum Old

163. The outer surface of the two cerebral hemispheres that regulate most complex behavior is called the _____. 56
C, c
a. cerebellum c. cerebral cortex Old
b. corpus callosum d. substantia nigra

164. The most recent part of the nervous system to evolve is the _____. 56
a. cerebral cortex c. limbic system F, a
b. cerebellum d. midbrain Old

4 yr.: 70% r = .31; 2 yr.: 61% r = .14

165. The cerebral cortex contains about _____ percent of the neurons in the human central nervous system. 56
F, c
a. 30 c. 70 Old
b. 50 d. 90

166. The cerebral cortex accounts for about _____ percent of the weight of the human brain. 56
a. 20 c. 60 F, d
b. 40 d. 80 New

167. The intricate network of folds -- hills and valleys -- that line the outer surface of the cerebral cortex, allowing it to fit inside the skull, are called _____. 56
C, d
a. sensory projection areas c. motor projections Old
b. association areas d. convolutions

4 yr.: 39% r = .30

168. Incoming messages are combined into meaningful impressions in the _____ areas. 56
a. sensory projection c. motor projection F, b
b. association d. convolution Old

4 yr.: 48% r = .29

169. The association areas are to _____ as the cerebellum is to _____. 56
*** a. thinking; motor coordination A, a
b. interconnection between hemispheres; aggressive behavior Old
c. temperature regulation; motor coordination
d. precise perception; aggressive behavior

170. Messages from separate senses are combined and integrated in the _____. 56
*** a. sensory projection areas c. association areas F, c
b. motor projection areas d. midbrain Old

171. The _____ lobe accounts for about one-half the volume of the human brain. 56
a. occipital c. parietal F, d
b. temporal d. frontal Old

172. *** The site of many mental processes that are unique to humans (self-awareness, initiative, planning ability, and goal-directed behavior) is the _____ lobe. 56
F, d
a. occipital c. parietal Old
b. temporal d. frontal

4 yr.: 80% r = .27; 2 yr.: 77% r = .45; 2 yr.: 60% r = .42

173. The lobe of the brain that serves as the "executive control center" for the brain is the _____ lobe. 56
F, d
a. occipital c. parietal Old
b. temporal d. frontal

174. *** Messages from the brain to the various muscles and glands in the body begin their journey in the _____. 56
F, c
a. sensory projection areas c. primary motor cortex Old
b. association areas d. primary somatosensory cortex

175. The section of the frontal lobe responsible for voluntary movement is the _____. 56
a. sensory projection areas c. primary motor cortex C, c
b. association areas d. primary somatosensory cortex New

176. The primary motor cortex is located in the _____ lobe. 56
a. frontal c. temporal F, a
b. parietal d. occipital New

177. The lobe of the brain most involved in motivation, persistence, emotional responses, character, and moral decision making is the _____ lobe. 56-57
F, d
a. occipital c. parietal Old
b. temporal d. frontal

178. Phineas Gage was a foreman on a railroad crew who suffered brain damage in a blasting accident. After the accident, he lost interest in his job and had difficulty maintaining any goal-directed behaviors. He seemed apathetic and capable of only shallow emotions. The damaged part of his brain was probably the _____ lobe. 57
A, d
Old
a. occipital c. parietal
b. temporal d. frontal

4 yr.: 94% r = .24

179. After an industrial accident in which George fell from a scaffold and hit his head, he has had trouble following directions or completing his normal work tasks. He is also apathetic, although he has periods of boastfulness and silliness. The damaged part of his brain is probably the _____ lobes. 57
A, a
Old
a. frontal c. parietal
b. temporal d. occipital

180. The lobe of the cerebral cortex that receives and coordinates messages from the other three lobes of the cortex is the _____ lobe. 57
F, d
a. occipital c. parietal Old
b. temporal d. frontal

181. Loss of motivation and ability to concentrate is the major outcome of damage to the _____ lobe. 57 F, d Old
a. occipital c. parietal
b. temporal d. frontal

182. The part of the brain that receives and interprets visual information is the _____ lobe. 57 C, a Old
a. occipital c. parietal
b. temporal d. frontal

183. *** After a head injury a person reports that she is unable to see, although her eyes are uninjured. A doctor would suspect an injury in the _____ lobe. 57 A, b Old
a. frontal c. parietal
b. occipital d. temporal

184. The part of the cerebral cortex that receives sensory information from throughout the body from sense receptors in the skin, muscles, joints and internal organs is the _____ lobe. 58 F, c Old
a. occipital c. parietal
b. temporal d. frontal

185. Corey was in an automobile accident that resulted in an injury to her brain. She now has difficulty reading road maps and telling other people how to get somewhere. She has most likely suffered an injury to her _____ lobe. 58 A, c Old
a. occipital c. parietal
b. temporal d. frontal

186. Messages from the sense receptors are registered in those areas of the brain called the _____. 58 F, a Old
a. primary somatosensory cortex c. motor projection areas
b. association areas d. hemispheric lateralization areas

187. The primary somatosensory cortex is located in the _____ lobe. 58 F, c Old
a. occipital c. parietal
b. temporal d. frontal

188. *** The part of the brain that helps regulate hearing, balance and equilibrium, certain emotions and motivation, and recognizing faces is the _____ lobe. 58 C, b Old
a. occipital c. parietal
b. temporal d. frontal

189. *** Corey was in an automobile accident that resulted in an injury to her brain. She now has difficulty maintaining her balance and normal body positions. Her ability to understand and comprehend language has also been injured. The part of her brain **MOST** likely injured was her _____ lobe. 58 A, b Old
a. occipital c. parietal
b. temporal d. frontal

190. *** Corey was in an automobile accident that resulted in an injury to her brain. She now has difficulty with her hearing and her ability to recognize faces. The part of her brain **MOST** likely injured was her _____ lobe. 58 A, b Old
a. occipital c. parietal
b. temporal d. frontal

4 yr.: 76% r = .45

191. The lobe of the brain that regulates emotions and motivations such as anxiety, pleasure, and anger is the _____ lobe. 58 C, b Old
a. occipital
b. temporal
c. parietal
d. frontal

192. The loosely connected ring of structures between the central core and the cerebral hemispheres that control emotion and is involved in the formation of new memories is the _____. 58 C, a Old
a. limbic system
b. reticular formation
c. pons
d. endocrine system

193. The limbic system is responsible for _____. 58 F, d Old
a. filtering incoming messages to the brain
b. connecting the brain to the rest of the body
c. fighting disease organisms that attempt to infect the brain
d. controlling learning and emotional behavior

194. The limbic system is fully developed only in _____. 58 F, a Old
a. mammals
b. vertebrates
c. reptiles
d. mammals and reptiles

195. *** George was in an automobile accident several years ago in which he suffered severe head injuries. Since the mishap, he has been unable to form new memories. He can remember everything he did before the accident but he cannot remember what he just said five minutes ago. The part of George's brain the was injured was probably the _____. 58 A, a Old
a. hippocampus
b. brain stem
c. reticular formation
d. spinal cord

196. The limbic system structures that seem especially important to emotions related to self-preservation and when stimulated cause fear or panic reactions or attack behaviors are the _____. 58 F, b Old
a. reticular formation and the amygdala
b. amygdala and the hippocampus
c. septum and the cingulate gyrus
d. hippocampus and the cingulate gyrus

197. *** Imagine that you believe that increased neural activity in the human limbic system produces increases in aggressive behavior. Which of the following findings would **NOT** provide support for your theory? 58 A, d Old
a. A depressant drug is administered to an area of the brain that inhibits the limbic system and aggression increases.
b. An area of the brain that inhibits the limbic system is destroyed and aggression increases.
c. The limbic system is stimulated electrically and aggression increases.
d. Portions of the limbic system are destroyed and aggression increases.

4 yr.: 43% r = .22

198. Our ability to read the facial expressions of emotion in other people is registered primarily in the _____. 58 F, c New
a. thalamus
b. hypothalamus
c. limbic system
d. corpus callosum

Hemispheric Specialization

199. The thick bundle of nerves connecting the two cerebral hemispheres which coordinates their activities is the _____. 58 C, a Old

a. corpus callosum
b. substantia nigra
c. caudate nucleus
d. reticular formation

4 yr.: 78% r = .31; 4 yr.: 93% r = .05; 2 yr.: 81% r = .37

200. "Split brain" patients are patients who have had _____. 59 C, c Old

a. a prefrontal lobotomy
b. their cerebellum split in the middle
c. their corpus callosum cut out
d. their brain stem cut down the middle

4 yr.: 88% r = .19

201. *** A "split-brain" patient is asked to stare at a spot on a screen. When a picture of an object is shown to the **RIGHT** of the spot, the patient can _____. 59-60 A, a Old

a. identify the object verbally and pick it out of a group of hidden objects using her right hand
b. identify the object verbally and pick it out of a group of hidden objects using her left hand
c. pick the object out of a group of hidden objects using her left hand, but cannot identify it verbally
d. pick the object out of a group of hidden objects using her right hand, but cannot identify it verbally

4 yr.: 28% r = .25

202. *** A "split brain" patient is asked to stare at a spot on a screen. When a picture of an object is shown to the **LEFT** of the spot, the patient can _____. 59-60 A, c Old

a. identify the object verbally and pick it out of a group of hidden objects using her right hand
b. identify the object verbally and pick it out of a group of hidden objects using her left hand
c. pick the object out of a group of hidden objects using her left hand, but cannot identify it verbally
d. pick the object out of a group of hidden objects using her right hand, but cannot identify it verbally

4 yr.: 19% r = .15

203. *** Split-brain patients who are shown objects in such a way that the visual information goes only to the right hemisphere of the brain _____. 59-60 A, c Old

a. can name the objects, but cannot point to them with their right hand
b. can name the objects and can point to them with their right hand
c. cannot name the objects, but can point to them with their right hand
d. can neither name the objects nor point to them with their right hand

4 yr.: 82% r = .22 4 yr.: 80% r = .22

204. *** Split-brain patients who are shown objects in such a way that the visual information goes only to the left hemisphere of the brain _____. 59-60 A, a Old
a. can name the objects, but cannot point to them with their left hand
b. can name the objects and can point to them with their left hand
c. cannot name the objects, but can point to them with their left hand
d. can neither name the objects nor point to them with their left hand

205. Which hemisphere of the cerebral cortex is usually dominant in language tasks? 60 F, c Old
a. the front hemisphere
b. the rear hemisphere
c. the left hemisphere
d. the right hemisphere

4 yr.: 81% r = .24; 2 yr.: 58% r = .30

206. *** The fact that language is usually related most closely to the left hemisphere explains why _____. 60 F, c Old
a. the left hemisphere is usually larger than the right
b. stroke victims with paralysis on the left side of the body may have severe speech problems
c. damage to the left hemisphere may cause language disorders
d. the right hemisphere is usually larger than the left

4 yr.: 50% r = .13

207. Language is processed primarily in the left hemisphere _____. 60 F, d Old
a. only in right-handers
b. only in left-handers
c. in most right-handers but only a few left-handers
d. in the majority of right-handers and left-handers

208. Which hemisphere of the cerebral cortex is usually dominant in spatial tasks? 60 F, d Old
a. the front hemisphere
b. the rear hemisphere
c. the left hemisphere
d. the right hemisphere

4 yr.: 71% r = .35

209. A baby is born with an impairment of his left cerebral hemisphere, but it is not discovered until years later, when certain clues are pieced together. Which of the following is **MOST** likely to be one of those clues? 60 A, c Old
a. He has difficulty perceiving concepts and spatial relationships.
b. He has difficulty with geometry.
c. He has difficulty learning to read.
d. He has difficulty recognizing people's faces.

2 yr.: 45% r = .34

210. *** A baby is born with an impairment in her right cerebral hemisphere, but it is not discovered until years later, when certain clues are pieced together. Which of the following is **LEAST** likely to be one of those clues? 60 A, b Old
a. She has difficulty perceiving spatial relationships.
b. She has severe language problems.
c. She has trouble understanding the meaning of a story that is read to her.
d. She has trouble picking up objects with her left hand.

211. The hemisphere that specializes in analyzing sequences and details is the_____ hemisphere. 60 F, c Old
a. front
b. rear
c. left
d. right

212. The hemisphere that specializes in holistic processing is the_____ hemisphere. 60 F, d Old
a. front
b. rear
c. left
d. right

213. People tend to be more cheerful, sociable, and self-confident when the _____ hemisphere of their brain is more active than the _____ hemisphere of their brain. 60 F, b Old
a. right; left
b. left; right
c. front; rear
d. rear; front

214. People tend to be more easily stressed, frightened, and depressed when the _____ hemisphere of their brain is more active than the _____ hemisphere of their brain. 60 F, a Old
a. right; left
b. left; right
c. front; rear
d. rear; front

215. A patient suffering from a seizure disorder has his right hemisphere anesthetized. Which of the following is he **MOST** likely to do? 60 A, c Old
a. fall into a deep sleep
b. fly into an uncontrollable rage
c. laugh and express positive emotions
d. cry

216. A patient suffering from a seizure disorder has his left hemisphere anesthetized. Which of the following is he **MOST** likely to do? 60 A, d Old
a. fall into a deep sleep
b. fly into an uncontrollable rage
c. laugh and express positive emotions
d. cry

217. The hemisphere most involved in preserving one's sense of identity or "self" is the_____ hemisphere. 60 F, d New
a. front
b. rear
c. left
d. right

218. Each of the following statements about differences in hemispheric functioning is true **EXCEPT** _____. 60-61 F, a Rev
a. differences in the hemispheres appear to be greater in women than in men
b. not everyone shows the same pattern of difference in functioning between the left and right hemispheres
c. normally, the two hemispheres communicate with each other and work together in an integrated, coordinated way
d. both hemispheres have the potential to perform a wide range of tasks

219. Broca and Wernicke are most well known for studying how the brain processes _____. 61 F, b Old
a. pain
b. language
c. spatial information
d. abstract information

220. The notion that human language is primarily controlled by the left hemisphere was first set forth by _____. 61 F, a Old
a. Broca
b. Wernicke
c. Gall
d. Korsakoff

221. The area of the frontal lobe which is crucial in our ability to talk is _____ area. 61
a. Broca's c. Gall's F, a
b. Wernicke's d. Korsakoff's Old

222. The area at the back of the temporal lobe that is crucial in our ability to listen, process, and understand what others are saying is _____ area. 61
F, b
a. Broca's c. Gall's Old
b. Wernicke's d. Korsakoff's

223. Simply put, Broca's area is important for _____, and Wernicke's area is important for _____. 61
F, c
a. listening; listening c. talking; listening Old
b. listening; talking d. talking; talking

224. Language difficulties that often result from strokes or other brain injuries are called _____. 61
C, c
a. hematomas c. aphasias Old
b. anosmias d. occlusions

225. Amy has suffered damage to Broca's area in her brain. She is most likely to exhibit _____ aphasia. 61
A, a
a. expressive c. occlusive Old
b. inclusive d. receptive

226. Amy has suffered damage to Wernicke's area in her brain. She is most likely to exhibit _____ aphasia. 61
A, d
a. expressive c. occlusive Old
b. inclusive d. receptive

227. Approximately _____ percent of humans are right-handed. 61
a. 60 c. 80 F, d
b. 70 d. 90 New

228. Left-handedness appears to be the result of _____. 61
a. exclusively genetic influences F, d
b. exclusively environmental influences New
c. exclusively prenatal influences
d. a combination of genetic, environmental, and prenatal influences

229. Males are _____ likely than females to be left-handed. 61
a. much less c. slightly more F, c
b. slightly less d. much more New

230. Non-human primates show a(n)_____. 61
a. strong tendency to be right-handed F, a
b. equal likelihood of being right- or left-handed New
c. strong tendency to be ambidextrous
d. strong tendency to be left-handed

Tools for Studying the Brain

231. _____ techniques are used to study the functions of single neurons. 62
a. Macroelectrode c. Structural imaging C, b
b. Microelectrode d. Functional imaging Old

232. Microelectrode techniques are used to _____. 62
a. study single neurons C, a
b. study overall activity in particular regions of the brain New
c. map structures in the living brain
d. observe neural activity as it reacts to sensory stimuli

233. A technique in which a tiny quartz or glass pipette (smaller in diameter than a human hair) that is filled with conducting fluid and placed on the surface of a neuron so that scientists can study changes in the electrical conditions of that particular neuron is called _____. 62
C, c
Old
a. a macroelectrode technique
b. structural imaging
c. a microelectrode recording technique
d. functional imaging

234. _____ techniques are used to obtain an overall picture of activity in particular regions of the brain. 62
C, a
Old
a. Macroelectrode
b. Microelectrode
c. Structural imaging
d. Functional imaging

235. Macroelectrode techniques are used to _____. 62
a. study single neurons C, b
b. study overall activity in particular regions of the brain New
c. map structures in the living brain
d. observe neural activity as it reacts to sensory stimuli

236. The first window into the electrical activity of a living brain was _____. 62
a. CT scanning
b. MEG
c. MRI
d. the EEG
F, d
Old

237. Which of the following is a type of macroelectrode technique? 62
a. CT scanning
b. EEG
c. MRI
d. MEG
C, b
Old

238. If you wanted to measure various brain waves, which of the following techniques should you use? 62
A, a
Old
a. a macroelectrode technique
b. a microelectrode technique
c. functional imaging
d. structural imaging

239. A technique in which more than two dozen electrodes are placed at important locations on the scalp and they then record the brain's electrical activity in a way that is converted by a computer into colored images on a TV screen and used to detect abnormal cortical activity such as that occurring during an epileptic seizure is _____. 62-63
C, d
Old
a. magnetic resonance imaging (MRI)
b. magnetoencephalography (MEG)
c. positron emission tomography (PET) scanning
d. electroencephalography (EEG) imaging

240. When brain researchers want to map the structures in a living human brain, they turn to _____. 62
C, c
Old
a. macroelectrode techniques
b. microelectrode techniques
c. structural imaging
d. functional imaging

241. The _____ technique allows researchers to "listen" but not "look" at what is going on inside the brain. 63
C, a
Old
a. macroelectrode
b. microelectrode
c. structural imaging
d. functional imaging

242. Structural imaging techniques are used to _____. 63
a. study single neurons C, c
b. study overall activity in particular regions of the brain New
c. map structures in the living brain
d. observe neural activity as it reacts to sensory stimuli

243. When brain researchers want to map the structures in a living human brain, they use _____. 63
C, b
a. an EEG c. EEG imaging Old
b. a CAT scan or an MRI d. MEG or MSI

244. A technique in which an X-ray photography unit rotates around a patient, moving from the top of the head to the bottom, creating a series of images that are combined by a computer to produce pictures of the inner regions of the brain is called _____. 63
C, c
Old
a. magnetic resonance imaging (MRI)
b. EEG imaging
c. computerized axial tomography scanning (CT scanning)
d. magnetic source imaging (MSI)

245. Which of the following would provide the best map of physical structures in the brains of living human beings? 63
F, a
Old
a. magnetic resonance imaging (MRI)
b. magnetoencephalography (MEG)
c. positron emission tomography (PET) scanning
d. electroencephalography (EEG) imaging

246. The brain scanning technique that offers the most hope for understanding disorders such as amnesia and dyslexia is _____. 63
A, b
Old
a. magnetic resonance imaging (MRI)
b. magnetoencephalography (MEG)
c. positron emission tomography (PET) scanning
d. electroencephalography (EEG) imaging

247. Each of the following is a functional imaging technique **EXCEPT** _____. 63
C, c
Old
a. magnetic source imaging (MSI)
b. positron emission tomography (PET) scanning
c. magnetic resonance imaging (MRI)
d. magnetoencephalogaphy (MEG)

248. The brain scanning technique that offers the most hope for understanding disorders such as amnesia and dyslexia is _____. 63
A, b
Old
a. magnetic resonance imaging (MRI)
b. magnetic source imaging (MSI)
c. positron emission tomography (PET) scanning
d. electroencephalography (EEG) imaging

249. A brain imaging technique that uses radioactive energy to map brain activity is _____. 63
C, b
Old
a. magnetic source imaging (MSI)
b. positron emission tomography (PET) scanning
c. magnetic resonance imaging (MRI)
d. magnetoencephalogaphy (MEG)

250. A brain imaging technique that measures the movement of blood molecules in the brain is _____. 64
a. magnetic resonance imaging (MRI) C, c
b. positron emission tomography (PET) scanning Old
c. functional magnetic resonance imaging (fMRI)
d. magnetoencephalogaphy (MEG)

251. An imaging technique that has been useful in helping researchers discover the biological origins of attention-deficit hyperactivity disorder is _____. 64
a. magnetic source imaging (MSI) C, c
b. positron emission tomography (PET) scanning Old
c. functional magnetic resonance imaging (fMRI)
d. magnetoencephalogaphy (MEG)

252. Functional imaging techniques are used to _____. 63-64
a. study single neurons C, c
b. study overall activity in particular regions of the brain New
c. map structures in the living brain
d. observe neural activity as it reacts to sensory stimuli

The Spinal Cord

253. The cable of nerves that connects the brain to the rest of the body is called the _____. 64
a. caudate nucleus c. reticular formation C, d
b. substantia nigra d. spinal cord Old

4 yr.: 94% r = .23; 2 yr.: 92% r = .33

254. The spinal cord is made up of soft, jellylike bundles of long _____. 64
a. axons c. ligaments C, a
b. dendrites d. tendons Old

255. The spinal cord contains _____major neural pathway(s). 64
a. one c. three F, b
b. two d. four Old

256. The spinal cord contains each of the following **EXCEPT** _____. 64
a. endocrine glands to regulate hormonal functions F, a
b. motor neurons that control internal organs and muscles Old
c. sensory neurons that carry information from the internal organs to the brain
d. neural circuits that produce reflex movements

257. When you pull your hand away rapidly after burning it on a hot pan, the sequence of neural activation is _____. 65
a. sensory neurons, motor neurons, interneurons F, c
b. motor neurons, interneurons, sensory neurons Old
c. sensory neurons, interneurons, motor neurons
d. interneurons, sensory neurons, motor neurons

258. *** Allan gingerly puts his fingertips on the hot handle of the skillet in which he's cooking supper, but he instantly pulls his hand away. His reaction is due to the functioning of the _____. 65
a. limbic system c. spinal cord A, c
b. medulla d. hypothalamus Old

The Peripheral Nervous System

259. The _____ nervous system links the brain and spinal cord to the rest of the body. 66
a. central c. peripheral F, c
b. generic d. tertiary Old

260. The peripheral nervous system is composed of _____ neurons. 66
a. neither afferent nor efferent F, d
b. afferent, but not efferent Old
c. efferent, but not afferent
d. both afferent and efferent

261. The peripheral nervous system consists of _____. 66
a. all the nerve cells that are not in the brain and spinal cord F, a
b. the brain and the spinal cord Old
c. the spinal cord and autonomic system
d. the brain and the autonomic system

4 yr.: 67% r = .31

262. Neurons that carry messages from the sense organs to the spinal cord or the brain are called _____ neurons. 66
C, c
a. sensory c. afferent Old
b. inter- d. efferent

263. Neurons that carry messages from the spinal cord or the brain to the muscles and glands are called _____ neurons. 66
C, d
a. sensory c. afferent Old
b. inter- d. efferent

264. A young woman returns from a day at the beach to find she has developed a severe 66
*** sunburn. Which neurons are sending messages from her burned skin to her brain A, a
informing her of the pain from the burn? Old
a. afferent neurons c. interaction neurons
b. efferent neurons d. motor neurons

265. Neurons that send messages from the spinal cord to the foot do so through _____ neurons. 66
*** a. afferent c. efferent F, c
b. sensory d. secondary Old

266. A young man reads in a letter that he has just won $1,000 in a state-wide lottery and 66
*** he literally jumps for joy. Which neurons are sending messages from his brain to the A, b
muscles in his legs causing him to jump? Old
a. afferent neurons c. interactive neurons
b. efferent neurons d. sensory neurons

267. The peripheral nervous system consists of the _____ and the _____ 66
*** nervous systems. F, a
a. somatic; autonomic c. sympathetic; parasympathetic Old
b. afferent; efferent d. central; reflex

4 yr.: 41% r = .22; 2 yr.: 53% r = .41

268. The somatic and autonomic nervous systems are two major divisions of the _____ nervous system. 66 F, a Old
a. peripheral
b. parasympathetic
c. sympathetic
d. central

4 yr.: 73% r = .48

269. *** All the things that we can sense (sights, sounds, smells, temperature, taste, and pressure) have their origins in the _____ nervous system. 66 A, b Old
a. autonomic
b. peripheral
c. central
d. secondary

270. Every deliberate action you make, from pedaling a bike to scratching a toe, involves neurons in the _____ nervous system. 66 F, c Old
a. sympathetic
b. parasympathetic
c. somatic
d. secondary

271. The _____ nervous system is composed of all the neurons that carry messages between your brain and all of the internal organs of your body. 66 F, d Old
a. central
b. secondary
c. somatic
d. autonomic

272. The process of digesting your last snack or meal or the unconscious regulation of your breathing are all primarily rooted in the _____ nervous system. 66 F, a Old
a. autonomic
b. limbic
c. somatic
d. secondary

273. *** The autonomic nervous system has two divisions: _____. 66 F, c Old
a. central and peripheral
b. receptors and effectors
c. sympathetic and parasympathetic
d. limbic and endocrine

4 yr.: 79% r = .35

274. The branch of the autonomic nervous system that prepares the body for quick action in an emergency is the _____ division. 67 C, c Old
a. central
b. secondary
c. sympathetic
d. parasympathetic

275. The branch of the autonomic nervous system that calms and relaxes the body is the _____ division. 67 C, d Old
a. central
b. secondary
c. sympathetic
d. parasympathetic

276. *** You're walking all alone down a dark street when, suddenly, you hear a scream and then footsteps coming closer and closer. Your heart begins to pound, you're scared stiff, and you feel like running. Which part of the nervous system causes your body's reaction? 67 A, c Old
a. the midbrain
b. the somatic nervous system
c. the autonomic nervous system
d. the hippocampus

4 yr.: 72% r = .25

277. It's midnight and you are alone in your room studying. You hear a loud crash outside your room and your whole body reacts instantly. Your pupils dilate, your heart rate increases, your blood pressure rises, adrenaline surges through your body, and your senses sharpen as you begin anxiously looking for whatever caused the crash. These reactions are produced by the _____.
a. central nervous system
b. somatic nervous system
c. sympathetic division
d. parasympathetic division

67
A, c
Old

4 yr.: 69% r = .31; 2 yr.: 83% r = .35

278. It's midnight and you are alone in your room studying. You hear a loud crash outside your room. Your body instantly reacts to this potential threat as you feel your heart pounding and your senses sharpening. Then you see your lumbering English sheep dog walking around the hallway corner and realize that the crash was undoubtedly from something he knocked over. Recovering from your alarm, your body now relaxes and you return to normal. The body system helping you to return to normal is the _____ .
a. somatic nervous system
b. spinal cord
c. sympathetic division
d. parasympathetic division

67
A, d
Old

279. *** The deer waits motionlessly, hidden in the thicket as the band of hunters approaches. As they get closer, their dogs bark, picking up the scent of their prey. In a futile effort to escape, the deer bolts. Which of the following most accurately describes the nervous system of the hunted deer at this point?
a. Its sympathetic nerve fibers are more active than its parasympathetic nerve fibers.
b. Its parasympathetic nerve fibers are more active than its sympathetic nerve fibers.
c. Both its sympathetic and parasympathetic nerve fibers are equally active.
d. Neither its sympathetic nor its parasympathetic nerve fibers are aroused.

67
A, a
Old

280. *** The heavy footsteps on the stairs get closer and closer. Slowly, the door to the bedroom creaks open. As a strange man with a knife in his hand lunges in, you let out an ear-piercing scream. Which of the following most accurately describes your nervous system at this point?
a. Your sympathetic nervous system is more active than your parasympathetic nervous system.
b. Your parasympathetic nervous system is more active than your sympathetic nervous system.
c. Both your sympathetic and your parasympathetic nervous systems are extremely active.
d. Neither your sympathetic nor your parasympathetic nervous systems are unusually active.

67
A, a
Old

4 yr.: 76% r = .36 4 yr.: 79% r = .48

281. Traditionally, _____ been considered automatic.
a. neither the sympathetic nor the parasympathetic division has
b. the sympathetic division, but not the parasympathetic division, has
c. the parasympathetic division, but not the sympathetic division, has
d. both the sympathetic and the parasympathetic division have

67
F, d
Old

282. Studies in the 1960's and 1970's showed that humans and animals have _____ control over the autonomic nervous system.
a. no
b. some
c. almost complete
d. complete

67
F, b
Old

The Endocrine System

283. Regarding the two communication systems that integrate and coordinate behavior, the nervous system and the endocrine system, _____. 68
*** F, d
a. these systems work independently of one another; one uses neurons, the other the bloodstream Old
b. the nervous system can influence the activity of the hormonal system
c. the hormonal system can influence the activity of the nervous system
d. these systems influence each other's activities

4 yr.: 72% r = .17

284. The system which coordinates and integrates behavior by secreting chemicals into the bloodstream is called the_____ system. 68
*** C, d
a. somatic c. limbic Old
b. autonomic d. endocrine

285. Chemical substances released by the endocrine glands to help regulate bodily functions are _____. 68
C, d
a. enzymes c. antigens Old
b. neurotransmitters d. hormones

286. The messages in the nervous system are carried through nerves; the messages in the endocrine system are carried through _____. 68
*** C, d
a. ducts c. the somatic system Old
b. glands d. the bloodstream

4 yr.: 70% r = .25

287. Endocrine glands are glands that secrete _____. 68
a. excitory neurotransmitters c. hormones F, c
b. inhibitory neurotransmitters d. enzymes Old

288. The glands that secrete hormones directly into the bloodstream are called _____ glands. 68
*** a. lymph c. hippocampal C, d
b. exocrine d. endocrine Old

289. The chemicals responsible for such things as differences in vitality among people, rates of metabolism, sexual development, preparation for pregnancy and childbirth, and emotional balances in general are called _____. 68
C, b
Old
a. neurotransmitters c. antigens
b. hormones d. enzymes

290. Which of the following statements about the endocrine system is **FALSE**? 68
*** a. Its messages stimulate only a limited number of cells at a time. F, a
b. It relays information through chemical messengers called hormones. Old
c. It communicates its messages at a slower speed than the nervous system.
d. It plays an important role in the body's response to stressful situations.

4 yr.: 67% r = .19 4 yr.: 68% r = .19 4 yr.: 65% r = .27

291. *** Which of the following does not belong biologically with the other four? 68-69
a. pituitary c. pineal C, b
b. thalamus d. adrenal cortex Old

4 yr.: 80% r = .27

292. The endocrine gland that is often called the "master gland" because it affects the output of the other endocrine glands is the _____ gland. 68
C, a
a. pituitary c. pineal Old
b. adrenal d. thyroid

293. The _____ influences blood pressure, thirst, contractions of the uterus during childbirth, milk production, sexual behavior and interest, and body growth. 68
F, d
a. pancreas c. thyroid gland Old
b. pineal gland d. pituitary gland

294. The gland that produces the largest number of different hormones and has the widest range of effects on the body's functions is the _____ gland. 68
F, a
a. pituitary c. pineal Old
b. adrenal d. thyroid

4 yr.: 61% r = .24; 2 yr.: 76% r = .23; 2 yr.: 79% r = .47

295. The pea-sized gland in the middle of the brain that helps regulate activity levels over the course of a day is the _____ gland. 68
C, c
a. adrenal c. pineal Old
b. pituitary d. thyroid

296. The hormone melatonin is produced by the _____ gland. 68
a. pituitary c. thyroid F, b
b. pineal d. adrenal Old

297. The hormone released by the pineal gland that reduces body temperature and prepares you for sleep is _____. 68
C, a
a. melatonin c. DHEA Old
b. parathormone d. HGH

298. The hormone that regulates the body's metabolic rate, affecting people's weight and energy levels, is _____. 68
C, b
a. parathormone c. insulin Old
b. thyroxin d. glucagon

4 yr.: 88% r = .08

299. The endocrine gland located below the voice box that produces the hormone for regulating the body's rate of metabolism is the _____ gland. 68
C, c
a. pituitary c. thyroid Old
b. adrenal d. parathyroid

300. *** Gloria's friends have recently noticed a startling change in her behavior. She eats everything in sight but gains little, if any, weight. She speeds around the room as if she were taking amphetamines. She seems constantly tense and agitated, and has trouble sleeping. She has become impulsive and lately she seems to be upset by even the slightest stress. The source of Gloria's problems is probably an _____ gland. 68
A, c
Old
a. overactive pituitary c. overactive thyroid
b. underactive pituitary d. underactive thyroid

301. *** Andrew's friends have noticed that lately he sleeps constantly but is always tired and complains of feeling too hot or too cold. Although Andrew had formerly been very athletic, lately his muscle tone has been greatly reduced. The source of Andrew's problem is probably an _____ gland. 68 A, d Old

a. overactive pituitary
b. underactive pituitary
c. overactive thyroid
d. underactive thyroid

4 yr.: 98% r = .25; 2 yr.: 77% r = .23

302. _____ problems are often misdiagnosed as depression or "problems in living." 68 F, b Old

a. Pituitary
b. Thyroid
c. Pineal
d. Pancreatic

303. The four tiny, pea-shaped glands that secrete the hormone that controls and balances tissue fluids and levels of calcium and phosphate in the blood are the _____. 68 C, c Old

a. adrenal glands
b. gonads
c. parathyroid glands
d. lymph glands

304. The two hormones which keep the blood-sugar level properly balanced are _____. 68 F, b Old

a. epinephrine and norepinephrine
b. insulin and glucagon
c. thyroxin and parathormone
d. growth hormone and ACTH

305. Insulin and glucagon are secreted by the _____. 68 F, d Old

a. pituitary gland
b. adrenal gland
c. hypothalamus
d. pancreas

2 yr.: 82% r = .31

306. The organ lying between the stomach and small intestine that secretes insulin and glucagon to regulate blood-sugar levels is the _____. 68 C, c Old

a. adrenal gland
b. kidney
c. pancreas
d. liver

307. Hypoglycemia results from secretion problems in the _____. 68 F, b Old

a. liver
b. pancreas
c. thyroid gland
d. kidneys

308. Oversecretion of insulin by the pancreas results in _____. 68 F, d Old

a. cirrhosis
b. diabetes
c. muscle spasms
d. hypoglycemia

309. Undersecretion of insulin by the pancreas results in _____. 68 F, b Old

a. cirrhosis
b. diabetes
c. muscle spasms
d. hypoglycemia

310. The endocrine glands located just above the kidneys that release hormones important for dealing with stress are the _____. 68 C, b Old

a. gonads
b. adrenal glands
c. parathyroid glands
d. pituitary glands

4 yr.: 82% r = .38; 2 yr.: 67% r = .29

311. The adrenal glands are important in your body's reaction to _____. 68 F, a Old

a. stress
b. sleep
c. digestion
d. pleasurable fantasy

312. *** You are walking down the street when you see a professor to whom you owe an overdue paper. As you approach each other you realize there is no graceful escape. You begin to notice your heart pounding, a cold sweat on your hands, and a knot in your stomach as the stress of the situation takes hold. Your reactions are **MOST** likely due to the activity of the _____.
68-69
A, b
Old

a. gonads
b. adrenal glands
c. thyroid gland
d. pituitary gland

313. Each adrenal gland has _____ part(s).
68
F, b
Old

a. one
b. two
c. three
d. four

314. The outer covering of the two adrenal glands that releases hormones important for dealing with stress is the adrenal _____.
68
C, a
Old

a. cortex
b. simplex
c. medulla
d. ganglia

315. The inner core of the two adrenal glands that releases hormones important for dealing with stress is the adrenal _____.
68
C, c
Old

a. cortex
b. simplex
c. medulla
d. ganglia

316. *** The hormone that activates the sympathetic nervous system causing the heart to beat faster, digestion to stop, the pupils of the eyes to enlarge, and more sugar to flow into the bloodstream is _____.
69
F, c
Old

a. acetylcholine
b. dopamine
c. epinephrine
d. norepinephrine

317. The hormone that causes the anterior pituitary gland to release hormones that prolong responses to stress, thus causing you to remain aroused for some time after extreme emotional excitement is _____.
69
F, d
Old

a. acetylcholine
b. dopamine
c. epinephrine
d. norepinephrine

318. The gonads are _____.
69
C, d
Old

a. secondary sexual characteristics
b. the reproductive glands in males, but not in females
c. the reproductive glands in females, but not in males
d. the reproductive glands in males and females

319. Masculine sex hormones are called _____.
69
C, b
Old

a. endorphins
b. androgens
c. estrogens
d. enkaphalins

320. Feminine sex hormones are called _____.
69
C, c
Old

a. endorphins
b. androgens
c. estrogens
d. enkaphalins

321. The testes and the ovaries are _____.
69
C, d
Old

a. adrenal glands
b. pineal glands
c. thyroid glands
d. gonads

322. If the hormone _____ is present during the third or fourth month after conception, the fetus will develop as a male; otherwise it will develop as a female. 69 F, a Old
a. testosterone
b. progesterone
c. estrogen
d. glucagon

323. _____ has long been linked to aggressive behavior. 69 F, d Old
a. Thyroxin
b. Progesterone
c. Melatonin
d. Testosterone

324. Violence is greatest among males between the ages of _____. 69 F, b Old
a. 5 and 15
b. 15 and 25
c. 25 and 35
d. 35 and 45

325. Recent research indicates that aggression is linked to _____. 69 F, c Old
a. thyroxin
b. parathormone
c. estrogen
d. progesterone

326. Recent research suggest that estrogen is linked to aggression in _____. 69 F, d New
a. neither males nor females
b. males but not females
c. females but not males
d. both males and females

327. Women's performance on certain tests of manual dexterity, verbal skills, and perceptual speed has been linked to levels of _____ in their system. 70 F, b Old
a. progesterone
b. estrogen
c. testosterone
d. cortisone

328. Men do better on tests of cognitive skills when their _____. 70 F, a Old
a. testosterone levels are high
b. testosterone levels are low
c. estrogen levels are high
d. estrogen levels are low

329. Which of the following is true? 70 F, b Old
a. Unmarried men, married men, and married men with children all have similar levels of testosterone.
b. Unmarried men have higher levels of testosterone than married men.
c. Married men without children have higher levels of testosterone than unmarried men or married men with children
d. Married men with children have higher levels of testosterone than unmarried men or married men without children.

330. Of the following, the males with the highest testosterone level is likely to be a(n) _____. 70 F, a New
a. unmarried man
b. married man with no children
c. married man who is a father-to-be
d. married man with young children

331. Of the following, the males with the lowest testosterone level is likely to be a(n) _____. 70 F, d New
a. unmarried man
b. married man with no children
c. married man who is a father-to-be
d. married man with young children

Genes, Evolution, and Behavior

332. The study of the relationship between heredity and behavior is _____. 71
a. evolutionary psychology c. behavior genetics C, c
b. psychobiology d. psychoneuroendocrinology Old

333. The subfield of psychology concerned with the origins of behaviors and mental processes, their adaptive value, and the purposes they continue to serve is _____. 71 C, a
a. evolutionary psychology c. behavior genetics Old
b. psychobiology d. psychoneuroendocrinology

334. The study of how plants, animals, and people pass traits from one generation to the next is called _____. 71 C, d
a. heredity c. epidemiology Old
b. trait theory d. genetics

335. The basic elements of heredity that control the transmission of traits are _____. 71
a. genes c. cells C, a
b. chromosomes d. proteins Old

336. Pairs of tiny threadlike bodies that contain genes and line up within a cell's nucleus are _____. 71 F, d
a. riboplasts c. vesicles Old
b. proteins d. chromosomes

337. Human beings have _____ pairs of chromosomes. 71
a. 12 c. 23 F, c
b. 17 d. 46 Rev

4 yr.: 95% r = .19; 2 yr.: 86% r = .31

338. At fertilization, the chromosomes from the father's sperm unite with the chromosomes from the mother's egg, creating a new cell called a(n) _____. 71 C, c
a. embryo c. zygote Old
b. genome d. blastocyst

339. A zygote contains _____ chromosomes. 71
a. 13 c. 36 F, d
b. 23 d. 46 Old

340. The main ingredient found in chromosomes and genes is _____. 71
a. plasma c. water F, b
b. DNA d. RNA Old

341. The complex molecule that forms the code for all genetic information is _____. 71
a. DNA c. RNA C, a
b. messenger RNA d. monoamine oxidase Old

342. The only known molecule that can replicate or reproduce itself is _____. 72
a. DNA c. RNA C, a
b. messenger RNA d. monoamine oxidase Old

343. A member of a gene pair that can control the appearance of a certain trait only if it is paired with another, similar type gene is a _____ gene. 72 C, a Old
a. recessive
b. recombinant
c. mutated
d. dominant

344. A member of a gene pair that controls the appearance of a certain trait, no matter what other type of gene it is paired with is called a _____ gene. 72 C, d Old
a. recessive
b. recombinant
c. mutated
d. dominant

345. Jessica's mother has blue eyes, with two recessive genes for blue eyes. Her father has brown eyes, with two dominant genes for brown eyes. What are the chances that Jessica has blue eyes? 72 A, a Old
a. 0 percent
b. 25 percent
c. 50 percent
d. 75 percent

346. Jessica's mother has blue eyes, with two recessive genes for blue eyes. Her father has brown eyes, with a dominant gene for brown eyes and a recessive gene for blue eyes. What are the chances that Jessica has blue eyes? 72 A, c Old
a. 0 percent
b. 25 percent
c. 50 percent
d. 75 percent

347. Jessica's mother has brown eyes, with a dominant gene for brown eyes and a recessive gene for blue eyes. Her father also has brown eyes, with a dominant gene for brown eyes and a recessive gene for blue eyes. What are the chances that Jessica has blue eyes? 72 A, b Old
a. 0 percent
b. 25 percent
c. 50 percent
d. 75 percent

348. Jessica's mother has brown eyes, with a dominant gene for brown eyes and a recessive gene for blue eyes. Her father also has brown eyes, with a dominant gene for brown eyes and a recessive gene for blue eyes. What are the chances that Jessica has brown eyes? 72 A, d Old
a. 0 percent
b. 25 percent
c. 50 percent
d. 75 percent

349. In England in the last half of the 19th century, an individual appeared who became known as the porcupine man because of the strange warty projections on his skin. In spite of this problem, he married a normal woman and fathered six children, all of whom had the same warty projections on their skin. Of his grandchildren, some appeared normal and others had the deformity. Which of the following is the **LEAST** reasonable conclusion that can be drawn from this information? 72 A, b Old
a. Porcupine skin is dominant over normal skin.
b. Porcupine skin is recessive to normal skin.
c. The porcupine man's children carried genes for normalcy.
d. The porcupine man's grandchildren could produce normal offspring.

350. The life of Joseph (John) Merrick, the Elephant Man, has been publicized on stage and in film. Suppose that Merrick's deformity could be traced to a single pair of genes (which is unlikely) and that he married a normal woman. If all their children appeared normal, which of the following would be the **LEAST** reasonable conclusion that we could draw? 72 A, a Old
a. The elephant deformity is dominant over normalcy.
b. Normalcy is dominant over the elephant deformity.
c. Their grandchildren could carry the gene for the elephant deformity.
d. Their grandchildren could carry the gene for normal appearance.

351. A process that controls our most important traits in which many genes interact to produce a certain specific trait is called _____. 73 C, b Old
a. genetic dominance
b. polygenic inheritance
c. monogenetic inheritance
d. natural selection

352. *** In many important psychological characteristics, a number of genes make a small contribution to the trait in question. This process is known as _____. 73 C, b Old
a. genetic dominance
b. polygenic inheritance
c. natural selection
d. cumulative inheritance

353. An organism's entire unique genetic makeup is called its _____. 73 C, c New
a. phenotype
b. polygenic inheritance
c. genotype
d. genetic imprint

354. The outward expression of a trait is known as its _____. 73 C, a New
a. phenotype
b. polygenic inheritance
c. genotype
d. genetic imprint

355. The characteristics of an organism, determined by both genetics and experience are collectively known as _____. 73 C, a New
a. phenotype
b. polygenic inheritance
c. genotype
d. genetic imprint

356. The sum total of all genes within a human cell is _____. 73 C, d Rev
a. polygenetic inheritance
b. the human phenotype
c. homogenetic inheritance
d. the human genome

357. The term that refers to the full complement of an organism's genetic material is _____. 73 C, b Old
a. gender
b. genome
c. heritability
d. polygenetic inheritance

358. Experts believe that the average variation in the human genetic code for any two people is _____percent. 73 F, a Old
a. less than 1
b. between 1 and 3
c. between 3 and 5
d. over 5

359. The human genome contains about _____ genes. 73 F, a Rev
a. 20,000 to 25,000
b. 40,000 to 45,000
c. 60,000 to 65,000
d. 80,000 to 85,000

360. Humans share about _____ percent of their genes with chimpanzees. 74 F, d New
a. 38.7
b. 58.7
c. 78.7
d. 98.7

Behavior Genetics

361. *** The central concern of behavior genetics is to _____. 74 F, c Old
a. determine how experience affects genes that are then passed on to the next generation
b. study the process of natural selection
c. determine the influence of heredity on behavior
d. control behavior through genetic manipulation

362. Which of the following statements is **NOT** true? 74-75
a. Genes can directly cause behavior in some cases of drug abuse and eating disorders. F, a
b. Genes affect the development and operation of the nervous system. Old
c. Genes affect the development and operation of the endocrine system.
d. Genes influence the likelihood that certain behaviors will occur under certain circumstances.

363. The degree to which variations in a trait can be attributed to genetic factors is called _____. 75
C, d
a. polygenetic inheritance c. the Law of Parsimony Old
b. genetic dominance d. heritability

364. *** Intensive inbreeding of animals over many generations in order to create a group of animals that are genetically very similar to one another and different from other groups of animals is called _____ study. 75
F, b
Old
a. selection c. family
b. strain d. twin

365. *** Strain studies involve _____. 75
a. adopting children with similar traits C, d
b. a single generation of animals Rev
c. breeding animals which have a trait with other animals that share that trait
d. inbreeding of close relatives of animals over several generations

4 yr.: 40% r = .16

366. Studies that estimate the heritability of a trait by breeding animals with other animals that have the same trait are called _____ studies. 75
F, a
a. selection c. family Old
b. strain d. twin

2 yr.: 65% r = .27

367. Scientists studying behavior genetics in humans commonly use which of the following types of studies for their research on people? 75-76
F, b
a. Twin studies, but not family, selection, or strain studies. Old
b. Twin and family studies, but not selection or strain studies.
c. Twin, family, and selection studies, but not strain studies.
d. Twin, family, selection, and strain studies.

368. Studies of heritability in humans that assume that if genes influence a certain trait, close relatives should be more similar with that trait than distant relatives are called _____ studies. 76
C, a
Old
a. family c. strain
b. twin d. selection

369. *** Each of the following is true of family study research designs in behavior genetics **EXCEPT** they _____. 76
C, a
a. make it possible to rule out the role of the environment Old
b. are designed for human research
c. assume a greater similarity of a trait among close relatives as opposed to distant relatives
d. suggest a role for heredity in schizophrenia

370. *** Which of the following types of studies is least effective in ruling out environmental effects in the development of traits? 76 F, d Old
a. strain studies
b. selection studies
c. twin studies
d. family studies

4 yr.: 44% r = .30

371. *** An extremely useful research method for studying human behavior genetics is _____. 76 F, d Old
a. selective breeding
b. strain studies
c. selection studies
d. twin studies

4 yr.: 58% r = .32

372. *** Which of the following have the **MOST** similar genetic composition? 76 F, c Old
a. fraternal twins
b. siblings
c. identical twins
d. cousins

4 yr.: 92% r = .33; 2 yr.: 92% r = .35

373. Fraternal twins are _____ similar genetically than are other brothers and sisters. 76 F, c Old
a. much more
b. slightly more
c. no more
d. much less

374. Twins that develop from two separate fertilized ova and are therefore different in genetic make-up are _____ twins. 76 C, b Old
a. identical
b. fraternal
c. Siamese
d. symbiotic

375. Twins that develop from a single fertilized ovum are _____ twins. 76 C, a Old
a. identical
b. fraternal
c. Siamese
d. symbiotic

376. *** Children of schizophrenics are about _____ times more likely to be schizophrenic than other children. 76 F, b Rev
a. 5
b. 10
c. 15
d. 20

377. *** Siblings of schizophrenics are about _____ times more likely to be schizophrenic than other children. 76 F, d Rev
a. two
b. four
c. six
d. eight

378. *** Todd's identical twin brother is schizophrenic. The odds are one out of _____ that he, too, will be schizophrenic. 76 F, a Old
a. two
b. four
c. six
d. eight

4 yr.: 64% r = .22

379. Todd's fraternal twin brother is schizophrenic. The odds are _____ percent that he, too, will be schizophrenic. 76 F, a Old
a. 15
b. 25
c. 50
d. 100

380. *** Sociologists studying several generations of a family named "Jukes" found an unusually high frequency of criminality and degeneracy. The **MOST** reasonable conclusion that can be drawn from these data is that _____. 76 A, d Old

a. once antisocial behavior appears in more than one generation of a family, it is never totally eliminated
b. antisocial behavior is probably due primarily to genetic factors
c. antisocial behavior is probably due primarily to environmental factors
d. antisocial behavior is probably due to a combination of genetic and environmental factors.

4 yr.: 81% r = .10

381. Research studies carried out on children, adopted at birth by parents not related to them, to determine the relative influence of heredity and environment on human behavior are called _____ studies. 77 C, a Old

a. adoption
b. strain
c. selection
d. case

382. One process by which physicians can test a fetus, in the womb, for possible genetic abnormalities (defects) is called _____. 77 F, b Old

a. immunotherapy
b. amniocentesis
c. ultrasound
d. positron emission tomography scanning

4 yr.: 88% r = .24

383. A procedure in which cells are collected from the membranes surrounding the fetus, then are tested for genetic abnormalities, is called _____. 77 C, c Old

a. amniocentesis
b. ultrasound
c. chorionic villus sampling
d. intra-uterine probe testing

384. A procedure in which some of the cells that the fetus casts off into the fluid surrounding it in the womb are collected and tested for chromosomal or genetic defects is _____. 77 C, a Old

a. amniocentesis
b. ultrasound
c. chorionic villus sampling
d. intra-uterine probe testing

385. Prenatal screening techniques such as amniocentesis detect genetic problems in _____ percent of pregnancies. 77 F, b Rev

a. less than 1
b. about 2
c. about 5
d. about 10

Evolutionary Psychology

386. The mechanism proposed by Darwin in his theory of evolution stating that organisms best adapted to their environment tend to survive and transmit their genetic characteristics to their offspring, is called _____. 78 F, d Old

a. behavior genetics
b. random adaptation
c. mutational transmosis
d. natural selection

387. The scientist who proposed the mechanism of natural selection to explain the process of evolution was _____. 78 F, c New

a. Freud
b. Pasteur
c. Darwin
d. Watson

388. From an evolutionary perspective, for mate selection in humans, it is most advantageous for _____. 79 F, c Old
a. both males and females to seek one mate for life
b. males to seek one long-term mate but for females to seek as many mates as possible
c. females to seek one long-term mate but for males to seek as many mates as possible
d. both males and females to seek as many mates as possible

389. Each of the following is a current criticism of evolutionary psychology **EXCEPT** _____. 79 F, a Old
a. it lacks the basic scientific methodology to properly study any of its claims
b. it too hastily explains behaviors from an evolutionary perspective rather than investigating other origins for them
c. it uses science to justify perpetuating unjust social policies
d. by saying a trait is adaptive, it implies that the trait is good

Box: Applying Psychology: Drugs and Behavior

390. The toxin produced by the micro-organism that causes botulism prevents the release of _____. 50 F, a Old
a. acetylcholine
b. dopamine
c. serotonin
d. endorphins

391. Curare, a poison, works by _____. 50 C, a Old
a. blocking receptor sites
b. speeding up the release of neurotransmitters into the synaptic space
c. inhibiting the production of excitory neurotransmitters
d. inhibiting the production of inhibitory neurotransmitters

392. Curare, a poison, works by blocking receptor sites for _____. 50 F, a New
a. acetylcholine
b. dopamine
c. serotonin
d. endorphins

393. Antipsychotic medications help reduce schizophrenic hallucinations by _____. 50 F, d Rev
a. stimulating the release of dopamine
b. helping dopamine bind to receptor sites
c. preventing the release of dopamine
d. preventing dopamine from binding to receptor sites

394. The poison of the black widow spider works by causing an outpouring of _____. 50 F, d Old
a. dopamine
b. serotonin
c. endorphins
d. acetylcholine

395. Caffeine arouses people by blocking the receptors for _____. 50 F, b Old
a. norepinephrine
b. adenosine
c. acetylcholine
d. thyroxin

396. *** After drinking several cups of strong coffee, a person develops "coffee nerves" or "jitters." This probably is due to the ability of caffeine to _____. 50 A, a Old
a. block adenosine receptor sites
b. inhibit enzymes which break down excitatory neurotransmitters
c. cause an increase in the release of excitatory neurotransmitters
d. cause neurotransmitters to leak out of the synaptic vesicles and be destroyed by enzymes

397. Despite its dangers, a young man continues to take cocaine because of the feelings of euphoria it produces for him. This powerful arousal of his nervous system is probably due to cocaine's ability to _____. 50 A, d Old
a. inhibit enzymes that break down neurotransmitters
b. increase the release of neurotransmitters
c. block the receptor sites for neurotransmitters
d. prevent neurotransmitters from being reabsorbed into the synaptic vesicles

Box: On the Cutting Edge: Mirror Neurons: Seeing Ourselves in Others

398. At a movie theater, during a scary scene in which a male hero is preparing to defend himself from a monster, Juan finds his own legs and arms tensing up, as if he was going to have to defend himself from the monster. His behavior is most likely due to _____. 75 A, b New
a. an overactive imagination
b. the fact that humans have specialized neurons that cause us to mimic what others are doing
c. the fact that young males tend to overempathize with male heroes in action movies
d. scary scenes make almost everyone tense their arms and legs, no matter what is actually occurring on the screen

399. Neurons that cause us to mimic the actions of others are known as _____ neurons. 75 C, d New
a. reactive
b. tertiary
c. sympathy
d. mirror

400. Mirror neurons have been found _____. 75 F, d New
a. only lower life forms, such as invertebrates
b. only in lower mammals, but not humans or primates
c. in almost all animals except for humans
d. in humans and primates

401. Mirror neurons are especially prevalent in _____. 75 F, d New
a. canines
b. felines
c. nonhuman primates
d. humans

402. Research shows that in humans, mirror neurons allow people to mimic _____. 75 F, a New
a. both the actions nor the emotions of others
b. the actions but not the emotions of others
c. the emotions but not the actions of others
d. neither the actions nor the emotions of others

True-False Questions

403. There are as many as 100 billion neurons in the brain of an average human being. T F 44, F T

404. The short fibers branching out from the cell body of a neuron are called axons. T F 44, F F

405. An axon is very thick and usually much shorter than dendrites. T F 44, F F

406. The axon carries outgoing messages from the cell body. T F 44, F T

407.	The axon of a neuron is often surrounded by a fatty covering called the myelin sheath.	T	F	44, F T
408.	Electrically charged particles that are present inside and outside the neuron are called graded potentials.	T	F	46, F F
409.	The breakdown of the neural cell wall which allows sodium ions to enter the cell can result in an action potential.	T	F	46, F T
410.	Neural impulses vary in strength according to the strength of the incoming signal to the neuron.	T	F	47, F F
411.	The neuron cannot fire during the absolute refractory period.	T	F	47, F T
412.	The neuron cannot fire during the relative refractory period.	T	F	47, F F
413.	The tiny gap between the synaptic knob and the next neuron is called the synapse.	T	F	47, F F
414.	A neural impulse causes the synaptic vesicles to release chemicals called neurotransmitters.	T	F	48, F T
415.	Neurotransmitters always stimulate or excite the next neuron.	T	F	48, F F
416.	Endorphins appear to increase sensitivity to pain.	T	F	49, F F
417.	Schizophrenia seems to be associated with an overabundance of dopamine.	T	F	49, F T
418.	Adult brains are not capable of neurogenesis.	T	F	52, F F
419.	Every part of the nervous system is connected to every other part.	T	F	53, F T
420.	The nervous system is usually divided into two major parts: the central nervous system and the parasympathetic nervous system.	T	F	53, F F
421.	The central nervous system carries messages to and from the brain.	T	F	53, F F
422.	Breathing, heart rate, and blood pressure are controlled by the medulla.	T	F	54, F T
423.	The reticular formation is located only in the hindbrain.	T	F	56, F F
424.	The oldest and most primitive of the brain's structures are the cerebral hemispheres.	T	F	56, F F

425.	The largest of the association areas, accounting for about half the volume of the cerebral cortex, is the frontal lobe.	T	F	56, F T
426.	Phineas Gage suffered personality changes as a result of damage to his temporal lobes.	T	F	57, F F
427.	The limbic system is important to motivation.	T	F	58, F T
428.	The ribbon-like band that connects the two hemispheres of the brain is called the corpus callosum.	T	F	58, F T
429.	The two cerebral hemispheres are not really equivalent in their functions.	T	F	58, F T
430.	The hemisphere of the brain most dominant in verbal tasks is the right hemisphere.	T	F	60, F F
431.	Even left-handers tend to have their language functions controlled by the left hemisphere of the brain.	T	F	60, F T
432.	Differences between hemispheres are greater in women than in men.	T	F	60, F F
433.	Broca's area is important in listening and Wernicke's area is important in talking.	T	F	61, F F
434.	Both CT scanning and MRI provide pictures of brain activity.	T	F	62, F F
435.	The brains of people with higher IQ scores are less active than those of people with lower IQ scores.	T	F	63, F T
436.	The complex cable of nerves that connects the brain to the rest of the body is the spinal cord.	T	F	64, F T
437.	Afferent neurons carry messages from the central nervous system.	T	F	66, F T
438.	The somatic nervous system contains two branches: the sympathetic and the parasympathetic divisions.	T	F	66, F F
439.	The sympathetic division carries messages to the body which tell it to prepare for an emergency.	T	F	67, F T
440.	You cannot gain conscious control over functions normally controlled by the autonomic nervous system.	T	F	67, F F
441.	Chemical substances called hormones are released into your bloodstream by the endocrine glands.	T	F	68, F T
442.	The thyroid gland helps to regulate your body's metabolism.	T	F	68, F T
443.	The two hormones secreted by the pancreas are insulin and adrenaline.	T	F	68, F F

444.	The adrenal glands play an important role in the body's reactions to stress.	T	F	68, F T
445.	Estrogen has been linked to aggressive behavior in both males and females.	T	F	69, F T
446.	Unmarried men have lower testosterone levels than married men.	T	F	70, F F
447.	The main ingredient of genes and chromosomes is glucagon.	T	F	71, F F
448.	A number of genes making a small contribution to a trait is known as mixed dominance.	T	F	73, F F
449.	The effects of genetics are not always immediate or fully apparent.	T	F	73, F T
450.	Genes can directly cause human behavior.	T	F	74, F F
451.	Strain studies involve intensive inbreeding of close relatives among animals.	T	F	75, F T
452.	For ethical reasons, only strain and selection studies can be used to explore human genetics.	T	F	75, F F
453.	Family studies are usually based on families with identical twins.	T	F	76, F F
454.	Science is simply a process that takes place in a laboratory.	T	F	77, F F
455.	Amniocentesis is a technique for detecting genetic defects in unborn children.	T	F	77, F T
456.	Evolutionary psychologists are especially interested in social behaviors.	T	F	78, F T

Essay Questions

457. ***	Define neuron, axon, dendrite, cell body, and myelin sheath. In your definitions, be sure to describe the specific functions of each item.	44-45 C, Old
458. ***	Describe the process by which a neuron moves from a resting state to firing and then back to a resting state.	46-47 F, Old
459. ***	Explain the process of how a neural message is transmitted from the end of one neuron to the beginning of another. In your explanation, identify at least two neurotransmitters and describe their functions.	47-48 F, Old
460.	Specifically describe the effects of the neurotransmitters acetylcholine, dopamine, serotonin, norepinephrine, and endorphins.	48-49 F, Old

461.	Specifically discuss how cocaine, curare, caffeine, opiates, and botulism block or disrupt neural communication.	50 F, Old
462.	Explain what plasticity and neurogenesis are. Briefly summarize the research regarding stem cells and the possibility of growing new neurons in the human brain.	49-52 C, Old
463. ***	Describe the location and functioning of the medulla, cerebellum, thalamus, hypothalamus, and cerebral cortex.	54-57 F, Old
464. ***	Describe the functions of the frontal lobe, temporal lobe, occipital lobe, and parietal lobe. Also, briefly discuss the case of Phineas Gage in terms of which areas of his brain were damaged and the effects of that damage.	53-54 F, Old
465.	Briefly describe the functions of the reticular formation and the limbic system. Explain what problems can result from damage or destruction of these areas.	56, 58 F, Old
466. ***	Compare and contrast the functions of the left and right hemispheres of the cerebral cortex. What role does the corpus callosum play in this functioning? Finally, what were the reasons for, and results of, split-brain operations?	58-61 F, Old
467.	Discuss how the brain controls language in humans, identifying the key structures involved in language processing and describing the effects of damage to these areas.	60-61 F, Old
468.	Summarize research findings about left-handedness and its causes.	61 F, New
469.	Briefly discuss the purposes of and describe the procedure for studying the brain within each of the following general areas: microelectrode techniques, macroelectrode techniques, structural imaging, functional imaging.	62-64 C, Old
470.	Describe the functions of the spinal cord and explain how it works with the brain to sense events and act on them.	64-65 F, Old
471.	Compare and contrast the functions of the autonomic nervous system and the somatic nervous system.	66-67 F, Old
472. ***	Compare and contrast the functions of the sympathetic and parasympathetic nervous system. What does the current scientific evidence indicate in regard to one's ability to consciously control functions normally controlled by the autonomic nervous system?	67 F, Old
473.	Describe the basic functions of the endocrine system, including the specific functions functions of the thyroid gland, pancreas, pituitary gland, gonads, and adrenal glands.	68-70 F, Old
474.	Define genes, chromosomes, and DNA and describe their role in the genetic transmission of traits.	71-72 C, Old
475.	Explain how dominant and recessive genes might influence the eye color of a child born to parents where the father has blue eyes and the mother has brown eyes. What color eyes are the grandchildren likely to have if the child marries a blue-eyed person? Why?	72-73 A, Old
476.	Explain what the human genome is, how many genes humans have, and discuss the social implications of research in this area.	73-74 F, New

477.	Compare and contrast strain studies and selection studies. Why are they used and what has been learned from them? What are the limitations to these techniques?	75 C, Old
478.	Define and describe the uses for and limitations of family studies, twin studies, and adoption studies. What has been learned from these studies about the role of heredity in shaping human personality?	76-77 C, Old
479.	Explain what evolutionary psychology is and identify the types of human behaviors evolutionary psychologists are interested in. Also, briefly discuss the criticisms of evolutionary psychology and how evolutionary psychologists respond to those criticisms.	78-79 C, Old