

Chapter 3 - The Biological Bases of Behaviour

1. Which cells in the nervous system receive, integrate, and transmit information?

- a. glia
- b. synapses
- c. terminal buttons
- d. neurons

ANSWER: d

2. What do neurons do?

- a. receive, integrate, and transmit information
- b. provide support for the other cells in the nervous system
- c. insulate the other cells in the nervous system
- d. connect the other cells in the nervous system

ANSWER: a

3. If you needed to send a message from the brain to your big toe, which of the following cells would be used?

- a. receptor
- b. neuron
- c. glial cell
- d. epithelial cell

ANSWER: b

4. What is the role of the soma or cell body of a neuron?

- a. It releases neurotransmitters.
- b. It transmits signals toward other neurons.
- c. It contains the cell nucleus.
- d. It receives information from other neurons.

ANSWER: c

5. Which part of the neuron has branched extensions that are specialized to receive information?

- a. axons
- b. terminal buttons
- c. somas
- d. dendrites

ANSWER: d

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6. What is the main function of dendrites?
- a. to receive information
 - b. to transmit information
 - c. to support and insulate the neuron
 - d. to release neurotransmitters

ANSWER: a

7. Which part of the neuron typically receives information, and which part of the neuron typically sends information?
- a. Dendrites receive, and the soma sends.
 - b. The axon receives, and the soma sends.
 - c. The axon receives, and dendrites send.
 - d. Dendrites receive, and the axon sends.

ANSWER: d

8. Which of the following is the correct order for information to pass through a neuron?
- a. axon, soma, dendrite
 - b. dendrite, axon, soma
 - c. dendrite, soma, axon
 - d. axon, dendrite, soma

ANSWER: c

9. Which part of a neuron transmits information away from the neuron and toward another neuron?
- a. synapse
 - b. soma
 - c. axon
 - d. dendrite

ANSWER: c

10. What is the main function of the axon?
- a. to break down neurotransmitters
 - b. to transmit information
 - c. to support and insulate the neuron
 - d. to receive information

ANSWER: b

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11. What is the name for the insulation that covers some axons and increases the speed of transmission of the neural impulse?
- a. neurotransmitter sheath
 - b. terminal cover
 - c. myelin sheath
 - d. glia wrap

ANSWER: c

12. If you know that someone has a disorder that results from a loss of myelin in the nervous system, which of the following would be a key problem in that disorder?
- a. blockage of important receptors
 - b. neurons that depolarize too easily
 - c. lack of neurotransmitters
 - d. poor transmission of signals along the axon

ANSWER: d

13. When a synapse is created, which of the following becomes possible?
- a. destruction of dendrites
 - b. blockage of neurotransmission
 - c. increase in myelination
 - d. communication between two neurons

ANSWER: d

14. Where are terminal buttons located?
- a. at the end of dendrites
 - b. at the end of axons
 - c. on the soma
 - d. in the synaptic cleft

ANSWER: b

15. What are the chemicals that are secreted from the terminal buttons into the synapse?
- a. action potentials
 - b. hormones
 - c. myelin
 - d. neurotransmitters

ANSWER: d

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16. Which cells in the nervous system provide support and insulation for other cells?
- glial cells
 - terminal cells
 - neurons
 - synapse cells

ANSWER: a

17. What is the main role of glial cells?
- to receive information from other cells
 - to transmit information to other cells
 - to provide support for other cells in the nervous system
 - to transfer information within the nervous system

ANSWER: c

18. By what type of process are neural impulses transmitted through the nervous system?
- a chemical process
 - an electrical process
 - a biological process
 - an electrochemical process

ANSWER: d

19. A neuron is currently not receiving any input. What kind of charge does that neuron have?
- It has a stable positive charge.
 - It has an unstable negative charge.
 - It has an unstable positive charge.
 - It has a stable negative charge.

ANSWER: d

20. What happens to a neuron's electrical charge as it is stimulated by an excitatory neurotransmitter and starts to receive information?
- It immediately becomes positive.
 - It becomes more negative.
 - It becomes less negative and may become positive.
 - It immediately affects the next neuron.

ANSWER: c

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21. What occurs when the electrical charge inside a neuron becomes positive and travels along the axon?
- a resting potential
 - an action potential
 - a chemical potential
 - an electrical potential

ANSWER: b

22. What happens to a neuron's electrical charge when a neuron is firing its action potential?
- It becomes positive and travels along the dendrite.
 - It becomes negative and travels along the axon.
 - It becomes negative and travels along the dendrite.
 - It becomes positive and travels along the axon.

ANSWER: d

23. Which of the following is true of a neuron after it fires an action potential?
- It cannot fire another action potential until at least five minutes have elapsed.
 - It can continue firing the original action potential for an extended period of time.
 - It can immediately fire additional action potentials.
 - It cannot immediately fire another action potential.

ANSWER: d

24. Comparing a neuron to a gun that holds only a single bullet, which of the following is similar to the time it takes to reload the gun?
- It has a relative refractory period.
 - It has a relative firing rate.
 - It has an absolute refractory period.
 - It has an absolute firing rate.

ANSWER: c

25. What does the "all-or-none law" refer to?
- A neuron transmits a consistent impulse each time it fires an action potential.
 - The neuron is selective regarding the type of other neuron it responds to.
 - A neuron is either working properly, or it has become necrotic.
 - All neurons in a chain are active or none are active.

ANSWER: a

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26. What is the law that states that a neuron fires an action potential at only one level of intensity?
- the refractory law
 - the all-or-none law
 - the threshold law
 - the action law

ANSWER: b

27. What do we call the microscopic gap between the terminal buttons of one neuron and the cell membrane of another neuron?
- presynaptic space
 - synaptic cleft
 - neurotransmitter cleft
 - postsynaptic space

ANSWER: b

28. An action potential has just arrived at the terminal buttons of a neuron. Which of the following events will occur immediately?
- Neurotransmitters will be taken up by the postsynaptic neuron.
 - Neurotransmitters will be pulled back into the presynaptic neuron.
 - Neurotransmitters will be manufactured in the synaptic vesicles.
 - Neurotransmitters will be released into the synaptic cleft.

ANSWER: d

29. Which of the following situations is most likely to lead to the depolarization of a postsynaptic neuron?
- Reuptake has occurred in the synapse.
 - Neurotransmitters have been released into the synapse.
 - The number of excitatory PSPs is greater than the number of inhibitory PSPs.
 - The number of inhibitory PSPs is greater than the number of excitatory PSPs.

ANSWER: c

30. As a result of receiving neurotransmitters, the voltage of a postsynaptic receptor has become more negative. What will be the result of this change?
- The presynaptic neuron is less likely to fire again.
 - The presynaptic neuron is more likely to fire again.
 - The postsynaptic neuron is less likely to fire.
 - The postsynaptic neuron is more likely to fire.

ANSWER: c

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31. As a result of receiving neurotransmitters, the voltage of a postsynaptic receptor has become less negative. What will be the result of this change?
- The presynaptic neuron is more likely to fire again.
 - The postsynaptic neuron is less likely to fire.
 - The presynaptic neuron is less likely to fire again.
 - The postsynaptic neuron is more likely to fire.

ANSWER: d

32. What is the process through which neurotransmitters are “recycled” to be used again?
- absorption
 - reabsorption
 - uptake
 - reuptake

ANSWER: d

33. What would happen if inhibitory postsynaptic potentials did not exist?
- Antagonism would not occur.
 - Neurons would be more likely to depolarize.
 - Neurons would be more resistant to depolarization.
 - Reuptake would not occur.

ANSWER: b

34. As a result of brain maturation, a neuron in a network now receives fewer excitatory postsynaptic potentials. Which of the following processes has most likely occurred?
- pruning
 - agonism
 - degeneration
 - antagonism

ANSWER: a

35. Which of the following reflects Hebbian learning?
- The synapse between Neuron A and Neuron B has been pruned.
 - Neuron A becomes more efficient at depolarizing Neuron B over time.
 - Neuron A produces more neurotransmitters over time.
 - Neuron A has just created a new synapse with Neuron B.

ANSWER: b

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36. What do we call a chemical that mimics a neurotransmitter and can bind to receptor sites and cause postsynaptic potentials?
- a. an agonist
 - b. an artificial neurotransmitter
 - c. an endogenous neurotransmitter
 - d. an antagonist

ANSWER: a

37. In the “lock and key” analogy of synaptic communication, which of the following is the “lock”?
- a. the soma
 - b. the receptor
 - c. the axon
 - d. the neurotransmitter

ANSWER: b

38. In the “lock and key” analogy of synaptic communication, which of the following is the “key”?
- a. the axon
 - b. the receptor
 - c. the soma
 - d. the neurotransmitter

ANSWER: d

39. In the “lock and key” analogy of synaptic communication, which of the following would function like a piece of gum that is stuck in the lock?
- a. the neurotransmitter
 - b. the receptor
 - c. a synapse
 - d. an antagonist

ANSWER: d

40. Which neurotransmitter is released by motor neurons and results in movement of the voluntary muscles?
- a. monoamines
 - b. acetylcholine
 - c. endorphins
 - d. dopamine

ANSWER: b

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41. Eric believes that smoking tobacco is beneficial when he is studying because of its relationship to acetylcholine (ACh). Which of the following outcomes should nicotine cause?
- Nicotine is an excitor for ACh, so it should keep him awake.
 - Nicotine is an agonist for ACh, so it should facilitate memory and attention.
 - Nicotine is an inhibitor for ACh, so it should prevent distraction.
 - Nicotine is an antagonist for ACh, so it should block nervousness.

ANSWER: b

42. Which of the following neurotransmitters is NOT a monoamine?
- dopamine
 - norepinephrine
 - acetylcholine
 - serotonin

ANSWER: c

43. Which of the following is most likely to occur if you were to administer a serotonin antagonist?
- pain reduction
 - increased focus and attention
 - schizophrenia
 - aggressive behaviour

ANSWER: d

44. Which of the following is most likely to occur if you were to administer a serotonin agonist?
- stable mood and arousal
 - sensitivity to pain
 - depression
 - schizophrenia

ANSWER: a

45. Which of the following is most likely to occur if you were to administer a dopamine antagonist?
- addiction
 - schizophrenia
 - difficulty with movement
 - pain reduction

ANSWER: c

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46. Which of the following neurotransmitters is believed to be associated with schizophrenia?
- a. serotonin
 - b. dopamine
 - c. endorphin
 - d. acetylcholine

ANSWER: b

47. Which neurotransmitters produce only inhibitory postsynaptic potentials?
- a. GABA and glycine
 - b. serotonin and endorphins
 - c. serotonin and glycine
 - d. GABA and endorphins

ANSWER: a

48. Which of the following is characteristic of endorphins?
- a. They have been related to the development of certain psychological disorders.
 - b. They are associated with the movement of voluntary muscles.
 - c. They are associated with sleep and wakefulness.
 - d. They resemble opiates in structure and effect.

ANSWER: d

49. Which of the following could be considered an endorphin agonist?
- a. histamine
 - b. cocaine
 - c. morphine
 - d. curare

ANSWER: c

50. What are the two major divisions of the nervous system?
- a. central and peripheral
 - b. autonomic and sympathetic
 - c. central and autonomic
 - d. peripheral and somatic

ANSWER: a

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51. Which nervous system is subdivided into the somatic and autonomic nervous systems?
- a. skeletal nervous system
 - b. central nervous system
 - c. sympathetic nervous system
 - d. peripheral nervous system

ANSWER: d

52. Handyman Holmes just hit his thumb with a hammer. Which nerve fibres will transmit the sensation to his central nervous system?
- a. sympathetic nerve fibres
 - b. efferent nerve fibres
 - c. autonomic nerve fibres
 - d. afferent nerve fibres

ANSWER: d

53. Handyman Holmes just hit his thumb with a hammer. Which nerve fibres will transmit the command from his central nervous system to jerk his hand away?
- a. efferent nerve fibres
 - b. sympathetic nerve fibres
 - c. afferent nerve fibres
 - d. autonomic nerve fibres

ANSWER: a

54. How do efferent nerve fibres communicate with the central nervous system (CNS)?
- a. They take messages toward the CNS.
 - b. They relay messages within the CNS.
 - c. They take messages away from the CNS.
 - d. They carry messages both away from and toward the CNS.

ANSWER: c

55. Which nervous system carries information from the voluntary skeletal muscles and sensory receptors to the central nervous system and also carries commands from the central nervous system to the muscles?
- a. peripheral nervous system
 - b. parasympathetic nervous system
 - c. autonomic nervous system
 - d. somatic nervous system

ANSWER: d

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56. Which nervous system controls the heart, glands, and smooth muscles?

- a. visceral nervous system
- b. efferent nervous system
- c. somatic nervous system
- d. autonomic nervous system

ANSWER: d

57. Which nervous system is responsible for the activation of the “fight or flight” response?

- a. parasympathetic nervous system
- b. efferent nervous system
- c. sympathetic nervous system
- d. afferent nervous system

ANSWER: c

58. If the parasympathetic nervous system is currently active, which of the following bodily functions is likely to be occurring?

- a. digestion
- b. cortisol secretion
- c. crying
- d. orgasm

ANSWER: a

59. In which nervous system would you find cerebrospinal fluid?

- a. peripheral nervous system
- b. central nervous system
- c. primary nervous system
- d. autonomic nervous system

ANSWER: b

60. If you removed the top of the skull, what would you be able to see on top of the brain?

- a. meninges
- b. brain stem
- c. ventricles
- d. CSF

ANSWER: a

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61. If you wanted to monitor the electrical activity of the brain over time, what recording device should you use?
- a. EEG
 - b. MRI
 - c. CT
 - d. PET

ANSWER: a

62. Which of the following techniques would be most useful for research in sleep laboratories?
- a. transcranial magnetic stimulation
 - b. electrical stimulation of the brain
 - c. electroencephalography
 - d. lesioning

ANSWER: c

63. How do lesioning studies relate to studies of patients with brain injuries?
- a. Lesioning was originally used for research purposes, but is beginning to be accepted as a therapeutic technique.
 - b. Lesioning is an imaging method that is appropriate for use with patients who may have foreign materials lodged in their wounds.
 - c. Lesioning is used in animal research to test hypotheses generated from case studies of patients with brain damage.
 - d. Lesioning is a therapeutic technique designed to reduce symptoms associated with brain damage.

ANSWER: c

64. What does electrical stimulation of the brain (ESB) involve?
- a. monitoring the electrical activity of the brain over time
 - b. destroying a piece of the brain via small electrodes that are carefully implanted
 - c. visualizing the three-dimensional structure of the brain
 - d. sending a weak current into a brain structure to activate that structure

ANSWER: d

65. If you hypothesized that damage to a particular region of the brain led to symptoms of anxiety, which of the following techniques would be both useful and ethical to test this hypothesis in human participants?
- a. electroencephalography
 - b. electric stimulation of the brain
 - c. transcranial magnetic stimulation
 - d. magnetic resonance imaging

ANSWER: c

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66. Which of the following pairs of procedures allows researchers to visualize changes in brain activity over time?
- positron emission tomography and functional magnetic resonance imaging
 - computerized tomography and magnetic resonance imaging
 - positron emission tomography and computerized tomography
 - magnetic resonance imaging and functional magnetic resonance imaging

ANSWER: a

67. Which procedure results in a high-quality three-dimensional picture of the brain?
- transcranial magnetic stimulation
 - magnetic resonance imaging
 - positron emission tomography
 - electrical stimulation of the brain

ANSWER: b

68. Which method would you use if you needed to know which areas of the brain experienced the greatest blood flow during a particular task?
- magnetic resonance imaging
 - computerized tomography
 - positron emission tomography
 - electroencephalography

ANSWER: c

69. According to the Featured Study (The Neuroscience of Time Travel), with which sort of task is activity in the hippocampus associated?
- all cognitive tasks that involve reading
 - empathy and decision-making
 - short-term memory
 - remembering and imagining

ANSWER: d

70. Which of the following processes is the medulla involved in?
- relaying sensory information to the cerebral cortex
 - sleep and arousal
 - coordinating body movements and balance
 - controlling essential functions such as breathing

ANSWER: d

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71. If a patient has a stroke that leads to respiratory failure, in which of the following brain areas did the stroke likely occur?
- a. cerebellum
 - b. medulla
 - c. pons
 - d. reticular formation

ANSWER: b

72. A gunshot wound in the back of the head caused the victim to be permanently unable to maintain balance and bodily coordination. Which of the following portions of the brain was damaged?
- a. medulla
 - b. cerebrum
 - c. thalamus
 - d. cerebellum

ANSWER: d

73. Which of the following structures contains dopamine-releasing neurons and, if it deteriorates, is involved in Parkinson's disease?
- a. midbrain
 - b. forebrain
 - c. limbic system
 - d. hindbrain

ANSWER: a

74. As a result of a stroke, Helen has sustained damage to her reticular formation. Which of the following will be difficult for Helen?
- a. relaying sensory information to the cerebral cortex
 - b. coordinating bodily movements and balance
 - c. regulation of sleep, wakefulness, and arousal
 - d. relaying information between the brainstem and cerebellum

ANSWER: c

75. Where are the thalamus, hypothalamus, and limbic system all located?
- a. cerebrum
 - b. forebrain
 - c. hindbrain
 - d. midbrain

ANSWER: b

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76. Through which of the following areas will all visual and auditory signals travel?

- a. sensory cortex
- b. thalamus
- c. cerebellum
- d. hypothalamus

ANSWER: b

77. Electrical stimulation of which brain structure will result in an animal eating constantly and gaining weight rapidly?

- a. thalamus
- b. frontal lobe
- c. limbic system
- d. hypothalamus

ANSWER: d

78. Which of the following is NOT directly regulated or influenced by the hypothalamus?

- a. the autonomic nervous system
- b. feeding
- c. the endocrine system
- d. memory

ANSWER: d

79. Which of the following is a loosely connected network of brain structures involved in memory and emotional experiences such as fear and pleasure?

- a. thalamus
- b. hypothalamus
- c. limbic system
- d. reticular formation

ANSWER: c

80. If a person's hippocampus is damaged, what would become difficult for that person?

- a. controlling her response to pleasurable stimuli
- b. vision and hearing
- c. controlling her food intake
- d. remembering

ANSWER: d

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81. Which of the following areas allows information to travel between the left and right hemispheres?
- a. thalamus
 - b. corpus callosum
 - c. pons
 - d. limbic system

ANSWER: b

82. If the human cortex did not have so many folds, which of the following would be likely?
- a. We would not need the cerebellum.
 - b. We would have faster transmission of action potentials.
 - c. We would lose the ability to inhibit most neural impulses.
 - d. We would need larger skulls to hold the same brain volume.

ANSWER: d

83. Which lobe of the brain would be most active for a visual task?
- a. occipital lobe
 - b. frontal lobe
 - c. temporal lobe
 - d. parietal lobe

ANSWER: a

84. If the occipital lobe of the brain is stimulated, what would a person be most likely to report?
- a. moving a part of his body
 - b. seeing a flash of light
 - c. smelling an odour
 - d. hearing a sound

ANSWER: b

85. Which lobe of the brain would be most active for an auditory task?
- a. temporal lobe
 - b. frontal lobe
 - c. occipital lobe
 - d. parietal lobe

ANSWER: a

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86. Which lobe of the brain would be most active for a task that required you to identify objects by touch?
- a. temporal lobe
 - b. occipital lobe
 - c. frontal lobe
 - d. parietal lobe

ANSWER: d

87. Which lobe of the brain would be most active for a task that required a great deal of manual dexterity?
- a. parietal lobe
 - b. temporal lobe
 - c. frontal lobe
 - d. occipital lobe

ANSWER: c

88. The next time you have an itch on your foot, where will the perception of the itch be processed?
- a. occipital lobe
 - b. parietal lobe
 - c. frontal lobe
 - d. temporal lobe

ANSWER: b

89. If a patient has severe damage to the prefrontal cortex, which of the following would become difficult for that patient?
- a. identifying objects by touch
 - b. planning, paying attention, and getting organized
 - c. hearing sounds
 - d. identifying visually complex materials

ANSWER: b

90. Theodore was born blind. What is likely to happen to the visual cortex of Theodore's brain as he develops?
- a. It will receive proportionately less blood and oxygen.
 - b. It will be recruited for processing verbal and other auditory information.
 - c. It will begin to function like a subcortical area rather than a cortical area.
 - d. It will shrink in size and be replaced by a ventricle.

ANSWER: b

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91. Where, in most people, is the area of the brain that is primarily responsible for speech production?
- right frontal lobe
 - left temporal lobe
 - left frontal lobe
 - right temporal lobe

ANSWER: c

92. John has recovered very well from a recent stroke, except that he can no longer understand the words people are saying to him even though he can hear perfectly well. Which of the following brain areas is likely damaged?
- Wernicke's area
 - the prefrontal cortex
 - the parietal cortex
 - Broca's area

ANSWER: a

93. An elderly person has a stroke that leaves her unable to talk and part of her body paralyzed. Which part of the body is most likely paralyzed?
- right side
 - lower body
 - upper body
 - left side

ANSWER: a

94. How could you determine whether a person has had split-brain surgery?
- by their speech patterns
 - by their performance on visual identification tasks in a laboratory
 - by the characteristic patterns of disturbed motor behaviour
 - by the increased likelihood of having small seizures

ANSWER: b

95. Following split-brain surgery, if an individual has difficulty naming an object that he briefly saw, which visual field would you expect that the object was presented to?
- right
 - dominant
 - nondominant
 - left

ANSWER: d

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96. Ellie has had split-brain surgery. If she briefly views “boatXhouse” while focusing on the X, what would Ellie say that she saw?
- a. She saw the word “boat.”
 - b. She did not see a word.
 - c. She saw the word “boathouse.”
 - d. She saw the word “house.”

ANSWER: d

97. When an object is placed unseen in the left hand of a person who has had split-brain surgery, which of the following will happen?
- a. He will be able to describe it.
 - b. He will be able to identify the object with his right hand.
 - c. He will not be able to describe it.
 - d. He will drop it.

ANSWER: c

98. Which task would NOT be primarily controlled by the right hemisphere?
- a. spatial tasks
 - b. visual recognition
 - c. reading
 - d. musical tasks

ANSWER: c

99. Which task is NOT predominantly controlled by the left hemisphere, for most people?
- a. writing
 - b. language
 - c. spatial tasks
 - d. controlling the right side of the body

ANSWER: c

100. What is likely to be released if the pituitary gland is activated?
- a. digestive enzymes
 - b. neurotransmitters
 - c. hormones
 - d. tears

ANSWER: c

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101. Why is the pituitary gland known as the “master gland”?
- a. It regulates brain function.
 - b. It secretes hormones that control other endocrine glands.
 - c. It regulates levels of both hormones and neurotransmitters.
 - d. It secretes testosterone.

ANSWER: b

102. Which brain structure controls much of the endocrine system?
- a. hypothalamus
 - b. cerebellum
 - c. thalamus
 - d. pituitary

ANSWER: a

103. Jason and Kyle are friends who are working together on a project. Which of the following hormones is likely to be secreted if they are bonding?
- a. estrogen
 - b. testosterone
 - c. cortisol
 - d. oxytocin

ANSWER: d

104. Which of the following hormones would be released in high volumes around the time of puberty?
- a. thyroxin
 - b. gonadotropin
 - c. oxytocin
 - d. cortisol

ANSWER: b

105. Tom is studying twins to determine the relative contribution of heredity and environment to the development of eating disorders. Which of the following is Tom’s field of study?
- a. evolutionary psychology
 - b. ontology
 - c. behaviour genetics
 - d. embryology

ANSWER: c

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106. With the exception of eggs and sperm, how many chromosomes are contained in each cell in the human body?
- a. 46
 - b. 23
 - c. 21
 - d. 18

ANSWER: a

107. What is the smallest piece of genetic information that is the key functional unit in hereditary transmission?
- a. chromosome
 - b. DNA
 - c. gene
 - d. zygote

ANSWER: c

108. If Tom is heterozygous for a specific gene pair, which of the following must be true?
- a. Tom's two genes in the specific gene pair are both recessive.
 - b. Tom's two genes in the specific gene pair are the same.
 - c. Tom's two genes in the specific gene pair are both dominant.
 - d. Tom's two genes in the specific gene pair are different.

ANSWER: d

109. If Ellen carries a recessive gene for blue eyes, which of the following must be true?
- a. One of her parents had blue eyes.
 - b. Both of her parents had blue eyes.
 - c. One of her parents carried the recessive gene.
 - d. Neither of her parents carried the recessive gene.

ANSWER: c

110. What are you describing if you describe Henry as tall, dark, and handsome?
- a. his homozygous condition
 - b. his heterozygous condition
 - c. his genotype
 - d. his phenotype

ANSWER: d

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111. Isabel has a large family. Which of the following pairs would have equal degrees of relatedness to Isabel?
- a. her father, and her brother
 - b. Her son, and her aunt
 - c. Her brother, and her first cousin
 - d. her grandfather, and her daughter

ANSWER: a

112. Which variable is more difficult to isolate in a family study compared to an adoption study?
- a. sex differences
 - b. socioeconomic status
 - c. genetic predisposition
 - d. shared environment

ANSWER: d

113. In family studies, how do researchers assess hereditary influence?
- a. by comparing the resemblance of adopted children to both their biological and adoptive parents on specific traits
 - b. by comparing members of one family to unrelated individuals to see how much they resemble one another on specific traits
 - c. by comparing blood relatives to see how much they resemble one another on specific traits
 - d. by comparing the resemblance of identical and fraternal twins on specific traits

ANSWER: c

114. If a trait is influenced to some degree by genetic factors, then which of the following pairs should be most similar to one another?
- a. monozygotic twins
 - b. parent and child
 - c. dizygotic twins
 - d. brother and sister

ANSWER: a

115. Which research method allows researchers to most easily isolate the effect of both genetics and experience on specific traits?
- a. twin studies
 - b. family studies
 - c. survey studies
 - d. adoption studies

ANSWER: d

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116. Which of the following is suggested by results from family, twin, and adoption studies?
- Neither genetics nor experience exerts a predictable influence on human behaviour.
 - Genetics exerts the strongest influence on human behaviour.
 - Experience exerts the strongest influence on human behaviour.
 - Genetics and experience jointly influence human behaviour.

ANSWER: d

117. Why would the Human Genome Project not be considered part of the field of behaviour genetics?
- The procedures associated with genetic mapping do not consider the role of the environment on behaviour.
 - It appears to be impossible to predict behaviours based on genetic substrates.
 - It focuses on the genome, not the chromosome.
 - It ignores polygenic traits.

ANSWER: a

118. Jessica is working on a large research project that follows people who have inherited a gene for a particular disorder. She wants to determine whether diet and exercise will alter the likelihood that those people will experience the symptoms of the disorder. What is Jessica's field of study?
- epigenetics
 - genetic mapping
 - evolutionary psychology
 - behaviour genetics

ANSWER: a

119. In a village, some people have very few children and some people have a lot of children. According to Darwin, what varies among people in this village?
- fertility
 - heritability
 - fitness
 - genotype

ANSWER: c

120. A species that lives in the arctic have warm, fluffy coats of fur because those individuals in the species with warm fur lived longer and had more offspring. According to Darwin, what is the mechanism that led to the whole species having warm fur?
- evolution
 - survival of the fittest
 - natural selection
 - adaptation

ANSWER: c

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121. The long necks of giraffes and sharp beaks of woodpeckers allow access to food. What is the term used for these physical characteristics?
- a. adaptations
 - b. fitness
 - c. natural selection
 - d. genotype

ANSWER: a

122. Which of the following is an example of gene flow?
- a. A species becomes smaller because smaller individuals survive famines.
 - b. A population of animals becomes darker because the paler ones moved away.
 - c. A species develops spots because of a random mutation.
 - d. A population of cows becomes larger because a farmer intentionally breeds them for size.

ANSWER: b

123. If you know that an organism has a genetic mutation, which of the following do you also know?
- a. The organism is less fit.
 - b. The organism is more fit.
 - c. The organism could pass the mutation on to offspring.
 - d. The organism will undergo genetic drift.

ANSWER: c

124. Schizophrenia may be related to abnormalities in neurotransmitter activity, structural defects in the brain, and genetic vulnerabilities. Which of your textbook's unifying themes are these observations most directly related to?
- a. Heredity and environment jointly influence behaviour.
 - b. Behaviour is shaped by cultural heritage.
 - c. Behaviour is determined by multiple causes.
 - d. Psychology is empirical.

ANSWER: c

125. Which of your textbook's unifying themes in psychology is Darwin's theory of evolution by natural selection most directly related to?
- a. People's experience of the world is highly subjective.
 - b. Psychology evolves in a sociohistorical context.
 - c. Heredity and environment jointly influence behaviour.
 - d. Psychology is theoretically diverse.

ANSWER: c

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126. What has been demonstrated by research involving tasks such as recognizing words or musical melodies?
- a. Most tasks are controlled by only one hemisphere.
 - b. Right-handed individuals outperform left-handed individuals on verbal tasks.
 - c. On a specific task, the superiority of one hemisphere is usually quite modest.
 - d. The dominant hemisphere is superior to the other hemisphere on most tasks.

ANSWER: c

127. You have just read a magazine article that claims that schools should be reformed so that teachers can teach more to the right side of the brain. Which of the following is a reasonable response, given evidence about cerebral specialization?
- a. It would be detrimental to left-brained students.
 - b. It is impractical because it is impossible to teach just one hemisphere at a time.
 - c. It is revolutionary, because it takes into account individual differences in hemispheric specialization.
 - d. It is an excellent suggestion that reflects current understanding of brain functioning.

ANSWER: b

128. Which of the following interventions is likely to cause permanent visual damage?
- a. visual deprivation during infancy
 - b. visual deprivation during childhood
 - c. visual deprivation during adolescence
 - d. visual deprivation during adulthood

ANSWER: a

129. Terry read a study suggesting that listening to music can lower cortisol levels and reduce the experience of everyday stress. Terry then tells her friend that people with anxiety disorders should just listen to music to get rid of their symptoms. Which of the following errors has Terry made?
- a. confirmation bias
 - b. illusory correlation
 - c. inappropriate extrapolation
 - d. fundamental attribution error

ANSWER: c

130. Which nervous system becomes activated and is “in control” when Carly is startled?
- a. the postural nervous system
 - b. the parasympathetic nervous system
 - c. the somatic nervous system
 - d. the sympathetic nervous system

ANSWER: d

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131. Which neurotransmitter is necessary to allow Carly's muscles to move, and to regulate her attention to her surroundings?
- a. serotonin
 - b. norepinephrine
 - c. GABA
 - d. acetylcholine

ANSWER: d

132. Which brain area would be activated as Carly plans her weekend?
- a. the hypothalamus
 - b. prefrontal cortex
 - c. visual cortex
 - d. primary somatosensory cortex

ANSWER: b

133. As Carly speaks to her dog, which of the following areas is most necessary for that task?
- a. Broca's Area
 - b. Wernicke's Area
 - c. auditory cortex
 - d. somatosensory cortex

ANSWER: a

134. Assuming that Carly's startle response would protect her when there is real danger, what would an evolutionary theorist call that response?
- a. a mutation
 - b. an adaptation
 - c. a phenotype
 - d. a homozygous trait

ANSWER: b