

Chapter 2—Biology and Psychology

MULTIPLE CHOICE

1. Which of the following best describes what is possible with a functioning nervous system?
- imagery and cognitions, but not physical movements
 - memory, planning, voluntary movement
 - ideas and thoughts
 - physical movements only

ANS: B PTS: 1 DIF: Moderate REF: 24
OBJ: LO1 BLM: Conceptual

2. Which of the following is a nerve cell?
- the dendrite
 - the axon
 - the glial cell
 - the neuron

ANS: D PTS: 1 DIF: Easy REF: 24
OBJ: LO1 BLM: Recall NOT: WWW

3. Which of the following remove dead neurons and waste products from the nervous system, nourish and insulate neurons, and direct neuronal growth?
- glial cells
 - neurons
 - myelin sheaths
 - neurotransmitters

ANS: A PTS: 1 DIF: Moderate REF: 24
OBJ: LO1 BLM: Recall

4. Which of the following best describes the function of glial cells in the nervous system?
- Glial cells remove waste products.
 - Glial cells prevent the formation of Alzheimer's disease.
 - Glial cells carry neurotransmitters along axons.
 - Glial cells place hormones in the proper area of the brain.

ANS: A PTS: 1 DIF: Moderate REF: 24
OBJ: LO1 BLM: Recall NOT: WWW

5. What is an axon's range of length?
- from a few millimetres up to 10 millimetres.
 - from a few millimetres up to nearly one metre.
 - from a few millimetres up to one half of a metre.
 - from a few millimetres to a kilometre

ANS: B PTS: 1 DIF: Easy REF: 24
OBJ: LO1 BLM: Recall

6. What part of a neuron receives messages from neighbouring neurons?
- a. the terminal
 - b. the dendrite
 - c. the soma
 - d. the axon

ANS: B PTS: 1 DIF: Easy REF: 24
OBJ: LO1 BLM: Recall

7. What part of a neuron sends messages to neighbouring neurons?
- a. the soma
 - b. the terminal
 - c. the axon
 - d. the dendrite

ANS: C PTS: 1 DIF: Easy REF: 24
OBJ: LO1 BLM: Recall

8. Which of the following is found inside a neuron's cell body?
- a. a dendrite
 - b. the axon
 - c. terminal buttons
 - d. the nucleus

ANS: D PTS: 1 DIF: Moderate REF: 24
OBJ: LO1 BLM: Recall

9. The axon contains small bulb-like structures that hold neurotransmitters. What are these bulb-like structures called?
- a. myelin sheaths
 - b. glial cells
 - c. terminal buttons
 - d. dendrites

ANS: C PTS: 1 DIF: Easy REF: 24
OBJ: LO1 BLM: Recall

10. What is the white, fatty material that insulates a neuron?
- a. the myelin sheath
 - b. the synaptic cleft
 - c. the soma
 - d. the cortex

ANS: A PTS: 1 DIF: Easy REF: 25
OBJ: LO1 BLM: Recall

11. Which of the following minimizes leakage of electrical currents travelling along the axon?
- a. the cortex
 - b. the myelin sheath
 - c. the synaptic cleft
 - d. the soma

ANS: B PTS: 1 DIF: Easy REF: 25
OBJ: LO1 BLM: Recall NOT: WWW

12. Eight-month-old Bianca has difficulty both learning to walk and performing other physical tasks, although these will become much easier for her in coming months. This current inability is partially due to her neurons lacking which of the following?
- a. axons
 - b. dendrites
 - c. myelin sheaths
 - d. somas

ANS: C PTS: 1 DIF: Moderate REF: 25
OBJ: LO1 BLM: Applied

13. Why is a child without complete myelination of neurons unable to engage in activities requiring visual-motor coordination?
- a. The myelin in the afferent neurons is damaged, causing the axon to swell.
 - b. The axon does not have sufficient myelin coating.
 - c. The leakage of myelin along the axon is minimized.
 - d. The dendrite is not insulated with myelin.

ANS: B PTS: 1 DIF: Moderate REF: 25
OBJ: LO1 BLM: Applied

14. When someone steps on your toe, which of the following carries information to the brain and spinal cord?
- a. glial cells
 - b. motor neurons
 - c. interneurons
 - d. sensory neurons

ANS: D PTS: 1 DIF: Moderate REF: 25
OBJ: LO1 BLM: Applied NOT: WWW

15. Which of the following “tells” you to quickly move your foot away when someone steps on your toe?
- a. sensory neurons
 - b. glial cells
 - c. interneurons
 - d. motor neurons

ANS: D PTS: 1 DIF: Moderate REF: 25
OBJ: LO1 BLM: Recall

16. If someone steps on your toe, resulting in pain and the movement of your foot, which of the following happens?
- Motor neurons transmit the sensation of pain to the spinal cord and to the brain, followed by sensory neurons sending the message to your foot to move.
 - Sensory neurons transmit the sensation of pain to the spinal cord and to the brain, followed by sensory neurons sending the message to your foot to move.
 - Sensory neurons transmit the sensation of pain to the spinal cord and to the brain, followed by motor neurons sending the message to your foot to move.
 - Motor neurons transmit the sensation of pain to the spinal cord and to the brain, followed by sensory neurons sending the message to your foot to move.

ANS: C PTS: 1 DIF: Difficult REF: 25
OBJ: LO1 BLM: Applied

17. If you accidentally touch a hot iron, what type of neurons carry nerve impulses causing you to quickly remove your hand?
- sensory neurons
 - afferent neurons
 - glial neurons
 - motor neurons

ANS: D PTS: 1 DIF: Moderate REF: 27
OBJ: LO1 BLM: Applied

18. Sensory neuron is to motor neuron as to which of the following relationships?
- afferent neuron is to efferent neuron
 - interneuron is to glial cell
 - glial cell is to interneuron
 - efferent neuron is to afferent neuron

ANS: A PTS: 1 DIF: Moderate REF: 25
OBJ: LO1 BLM: Conceptual

19. What did Luigi Galvani discover during his rainstorm experiment?
- Neural impulses are generally chemical in nature.
 - Neural impulses that travel along neurons are electrochemical in nature.
 - Neural impulses are electronic in nature.
 - Neural impulses travelling between neurons are electrochemical in nature.

ANS: B PTS: 1 DIF: Easy REF: 25
OBJ: LO1 BLM: Recall

20. According to Luigi Galvani, how do messages travel along neurons?
- by electrochemical transmission
 - by electrical transmission
 - by chemical transmission
 - by reflexes

ANS: A PTS: 1 DIF: Moderate REF: 25
OBJ: LO1 BLM: Recall

21. Who demonstrated that messages travelling along neurons are electrochemical?
- Luigi Galvani
 - William James
 - Wilhelm Wundt
 - Thomas Edison

ANS: A PTS: 1 DIF: Easy REF: 25
OBJ: LO1 BLM: Recall

22. Which of the following is the electrochemical discharge of a nerve cell or neuron?
- the afferent impulse
 - a synapse
 - a neurotransmitter
 - the neural impulse

ANS: D PTS: 1 DIF: Easy REF: 25
OBJ: LO1 BLM: Conceptual

23. What is the approximate resting potential of a neuron?
- +70 millivolts
 - +40 millivolts
 - 40 millivolts
 - 70 millivolts

ANS: D PTS: 1 DIF: Easy REF: 26
OBJ: LO1 BLM: Recall

24. What happens to a cell membrane when a section of a neuron is stimulated by neighbouring neurons?
- It becomes permeable to sodium ions.
 - It becomes positive to sodium ions.
 - It becomes impermeable to sodium ions.
 - It becomes polarized to sodium ions.

ANS: A PTS: 1 DIF: Moderate REF: 26
OBJ: LO1 BLM: Recall

25. In a resting state, what type of charge occurs to the fluid on the inside of a neuron, relative to the outside of a neuron?
- electrical
 - equal
 - positive
 - negative

ANS: D PTS: 1 DIF: Moderate REF: 26
OBJ: LO1 BLM: Recall NOT: WWW

26. What occurs when a neuron's cell membrane has become permeable to sodium ions?
- The cell has been altered to a degree of approximately -40 millivolts.
 - The previous section of the cell has become permeable to potassium chloride ions.
 - A section of the neuron has been stimulated by a neighbouring neuron.
 - An action potential of about -70 millivolts has been initiated.

ANS: C PTS: 1 DIF: Difficult REF: 26
OBJ: LO1 BLM: Applied

27. The polarization of a neuron results in a resting potential of about -70 millivolts. This is followed by depolarization and an action potential of $+110$ millivolts. This brings the membrane voltage to what?
- $+180$ millivolts
 - $+40$ millivolts
 - -40 millivolts
 - -180 millivolts

ANS: B PTS: 1 DIF: Moderate REF: 26
OBJ: LO1 BLM: Conceptual

28. What is the membrane voltage when the cell membrane becomes permeable to sodium ions?
- $+70$ millivolts
 - $+40$ millivolts
 - -40 millivolts
 - -70 millivolts

ANS: B PTS: 1 DIF: Moderate REF: 26
OBJ: LO1 BLM: Recall

29. What is approximately the action potential of the inside of a cell at a disturbed area?
- $+110$ millivolts
 - $+70$ millivolts
 - -40 millivolts
 - -70 millivolts

ANS: A PTS: 1 DIF: Moderate REF: 26
OBJ: LO1 BLM: Recall

30. What do we call the electrical impulse that stimulates the conduction of a neural impulse along an axon?
- action potential
 - final potential
 - electric potential
 - resting potential

ANS: A PTS: 1 DIF: Easy REF: 26 – 27
OBJ: LO1 BLM: Recall

31. Once an action potential occurs, the cell *then* becomes permeable to what?
- sodium chloride ions
 - sodium ions
 - potassium chloride ions
 - depolarization

ANS: B PTS: 1 DIF: Moderate REF: 26
OBJ: LO1 BLM: Recall

32. In order for neurons to fire, what is the strength required of incoming messages?
- the resting potential
 - the threshold
 - the minimum
 - the neuronal potential

ANS: B PTS: 1 DIF: Easy REF: 26
OBJ: LO1 BLM: Recall

33. What is the cause of sensory neurons firing impulses of the same magnitude, regardless of whether someone squeezes your hand gently or tightly?
- overstimulation of the sensory neuron
 - the all-or-none principle
 - damage in the sensory neuron
 - the stimulation threshold

ANS: B PTS: 1 DIF: Difficult REF: 27
OBJ: LO6 BLM: Applied

34. Which of the following refers to a neuron firing an impulse of the same strength whenever an action potential is triggered?
- polarization
 - resting potential
 - the refractory period
 - the all-or-none principle

ANS: D PTS: 1 DIF: Easy REF: 27
OBJ: LO1 BLM: Recall NOT: WWW

35. Why would sodium be prevented from passing through the neuronal membrane?
- The neuron is in the refractory period.
 - The neuron is decaying.
 - The neuron is not myelinated.
 - The neuron is not functioning properly.

ANS: A PTS: 1 DIF: Moderate REF: 27
OBJ: LO1 BLM: Conceptual

36. Following the firing of a neuron, what is the phase during which a neuron's action potential cannot be triggered?
- the relative refractory period
 - the all-or-none period
 - the refractory period
 - the resting potential

ANS: C PTS: 1 DIF: Moderate REF: 27
OBJ: LO1 BLM: Recall

37. Which of the following applies to a synapse?
- The synapse sends chemical messages from axon to axon.
 - A synapse is bordered by an axon.
 - A synapse is bordered by the dendrite of the transmitting neuron.
 - The synapse is the fluid-filled gap between an axon terminal and a dendrite.

ANS: D PTS: 1 DIF: Moderate REF: 27
OBJ: LO1 BLM: Conceptual

38. What do we call the microscopic space between a neuron transmitting a message to a neighbouring neuron?
- a receptor site
 - a terminal
 - a transmitter site
 - a synapse

ANS: D PTS: 1 DIF: Easy REF: 27
OBJ: LO1 BLM: Recall

39. When a neural impulse reaches the axon terminals, varying amounts of which of the following are released?
- hormones
 - electrical impulses
 - neurotransmitters
 - electrochemical substances

ANS: C PTS: 1 DIF: Easy REF: 27
OBJ: LO1 BLM: Recall

40. Within the neuron, where are neurotransmitters stored?
- in the dendritic branches
 - in the terminal branches
 - in the synaptic clefts
 - in the synaptic vesicles

ANS: D PTS: 1 DIF: Easy REF: 28
OBJ: LO1 BLM: Recall

41. Upon initial contact with a neuron, where do neurotransmitters travel and subsequently trigger the firing of that neuron?
- synaptic vesicles
 - terminal buttons
 - receptor sites
 - transmitter sites

ANS: C PTS: 1 DIF: Easy REF: 28
OBJ: LO1 BLM: Recall

42. Which of the following statements applies to neurotransmitters?
- The axons hold neurotransmitters.
 - Most neurotransmitters excite other neurons.
 - A total of six neurotransmitters have been identified.
 - Unused neurotransmitters are reabsorbed by the synapse.

ANS: B PTS: 1 DIF: Moderate REF: 28 – 29
OBJ: LO1 BLM: Conceptual NOT: WWW

43. Which of the following statements applies to neurotransmitters?
- Neurotransmitters are stored in the axon.
 - When the neural impulse reaches the dendritic branches, the vesicles release varying amounts of neurotransmitters.
 - A neurotransmitter conveys a message to a neighbouring neuron by travelling along the axon to the terminal fibres.
 - Neurotransmitters find their way to neuronal receptor sites, subsequently triggering firing.

ANS: D PTS: 1 DIF: Moderate REF: 28
OBJ: LO1 BLM: Conceptual NOT: WWW

44. Excitatory neurotransmitters cause other neurons to fire. What neurons *prevent* other neurons from firing?
- sensory neurons
 - inhibitory neurons
 - motor neurons
 - interneurons

ANS: B PTS: 1 DIF: Easy REF: 28
OBJ: LO1 BLM: Conceptual

45. What is the state of acetylcholine at a synapse?
- either excitatory or inhibitory
 - excitatory
 - resting
 - inhibitory

ANS: A PTS: 1 DIF: Moderate REF: 28
OBJ: LO1 BLM: Recall

46. What does the toxin curare prevent from binding within receptor sites in neurons, resulting in paralysis and often death?
- a. dopamine
 - b. serotonin
 - c. noradrenaline
 - d. acetylcholine

ANS: D PTS: 1 DIF: Easy REF: 28
OBJ: LO1 BLM: Recall

47. If they have the same effect as the toxin curare, what do botulism spores prevent from being released into the synapse?
- a. serotonin
 - b. dopamine
 - c. acetylcholine
 - d. noradrenaline

ANS: C PTS: 1 DIF: Difficult REF: 28
OBJ: LO1 BLM: Recall

48. While visiting the jungles of South America in the early part of the twentieth century, Eugene was shot with a poison dart. He immediately became paralyzed. What was most likely blocked from action by the toxin in the dart?
- a. dopamine
 - b. serotonin
 - c. noradrenaline
 - d. acetylcholine

ANS: D PTS: 1 DIF: Moderate REF: 28
OBJ: LO1 BLM: Applied

49. Minutes after eating a few bites of food in a local restaurant, Mary was unable to breathe and began to experience muscular paralysis. What was blocked from action after she had ingested food contaminated with botulism?
- a. noradrenaline
 - b. serotonin
 - c. acetylcholine
 - d. dopamine

ANS: C PTS: 1 DIF: Moderate REF: 28
OBJ: LO1 BLM: Applied

50. The Shakespearean character Juliet took a potion that paralyzed her and affected her muscles used for breathing. What was most likely blocked from action by the potion?
- a. serotonin
 - b. acetylcholine
 - c. dopamine
 - d. noradrenaline

ANS: B PTS: 1 DIF: Difficult REF: 28
OBJ: LO1 BLM: Conceptual

51. Because acetylcholine is implicated in memory, in which part of the brain is it most prevalent?
- the hippocampus
 - the medulla
 - the amygdala
 - the cerebellum

ANS: A PTS: 1 DIF: Difficult REF: 28
OBJ: LO7 BLM: Conceptual

52. What neurotransmitter is found in the hippocampus?
- serotonin
 - endorphins
 - dopamine
 - acetylcholine

ANS: D PTS: 1 DIF: Moderate REF: 28
OBJ: LO1 BLM: Recall NOT: WWW

53. What is formulated in the hippocampus?
- sensations
 - endorphins
 - motor movements
 - memories

ANS: D PTS: 1 DIF: Easy REF: 28 – 38
OBJ: LO1 BLM: Recall

54. Which of the following are made possible by the neurotransmitter dopamine?
- sensation and perception
 - the ability to perceive pleasure
 - involuntary movement
 - higher-order thought

ANS: A PTS: 1 DIF: Easy REF: 28
OBJ: LO1 BLM: Recall NOT: WWW

55. Muhammad Ali suffers from Parkinson's disease. Which chemical is he lacking in his brain?
- acetylcholine
 - dopamine
 - norepinephrine
 - serotonin

ANS: B PTS: 1 DIF: Difficult REF: 28
OBJ: LO1 BLM: Applied

56. One theory of schizophrenia is that people who suffer from it may have too many receptor sites for what neurotransmitter?
- a. norepinephrine
 - b. serotonin
 - c. dopamine
 - d. acetylcholine

ANS: C PTS: 1 DIF: Moderate REF: 28
OBJ: LO1 BLM: Recall

57. Phenothiazines are a group of drugs used to treat schizophrenia. What neurotransmitter is blocked from action by phenothiazines?
- a. noradrenaline
 - b. acetylcholine
 - c. dopamine
 - d. endorphins

ANS: C PTS: 1 DIF: Moderate REF: 28
OBJ: LO1 BLM: Recall

58. Phenothiazines, a group of drugs used to treat schizophrenia, block the action of dopamine. If used over a long period, what severe side effect may develop from being treated with these drugs?
- a. Alzheimer's disease
 - b. thought disorders
 - c. hallucinations
 - d. Parkinson's-like symptoms

ANS: D PTS: 1 DIF: Difficult REF: 29
OBJ: LO1 BLM: Conceptual

59. Dr. Earls, a neuropsychologist, was sitting next to an individual on a train who was exhibiting uncontrollable movement. Dr. Earls assumed that this individual had an imbalance of what neurotransmitter?
- a. dopamine
 - b. norepinephrine
 - c. serotonin
 - d. acetylcholine

ANS: A PTS: 1 DIF: Difficult REF: 28
OBJ: LO1 BLM: Applied

60. The neurotransmitter norepinephrine has which of the following properties and effects on the body?
- a. Norepinephrine is an inhibitory neurotransmitter that slows the heartbeat and decreases arousal.
 - b. Norepinephrine is an excitatory neurotransmitter that slows the heartbeat and decreases arousal.
 - c. Norepinephrine is an inhibitory neurotransmitter that speeds heartbeat and increases arousal.
 - d. Norepinephrine is an excitatory neurotransmitter that speeds heartbeat and increases arousal.

ANS: D PTS: 1 DIF: Moderate REF: 29
OBJ: LO1 BLM: Conceptual

61. If there were a drug that blocked the reuptake of norepinephrine, what would we most likely expect as an effect of this drug?
- a. psychomotor retardation
 - b. drowsiness
 - c. sleeplessness
 - d. too much sleep

ANS: C PTS: 1 DIF: Moderate REF: 29
OBJ: LO1 BLM: Conceptual

62. Which of the following is/are very abundant in the brain and body during an emergency?
- a. GABA
 - b. norepinephrine
 - c. serotonin
 - d. endorphins

ANS: B PTS: 1 DIF: Moderate REF: 29
OBJ: LO1 BLM: Conceptual

63. Cocaine, along with other amphetamines, increases the production of which neurotransmitters?
- a. norepinephrine and dopamine
 - b. acetylcholine and endorphins
 - c. acetylcholine and GABA
 - d. GABA and endorphins

ANS: A PTS: 1 DIF: Moderate REF: 29
OBJ: LO1 BLM: Recall

64. Deficiencies in what neurotransmitter have been linked to depression, eating disorders, and insomnia?
- a. serotonin
 - b. acetylcholine
 - c. noradrenaline
 - d. dopamine

ANS: A PTS: 1 DIF: Easy REF: 29
OBJ: LO1 BLM: Recall NOT: WWW

65. Which deficiency does Jeff likely have if he is very aggressive and exhibits alcoholism and depression?

- a. dopamine deficiency
- b. norepinephrine deficiency
- c. serotonin deficiency
- d. acetylcholine deficiency

ANS: C PTS: 1 DIF: Moderate REF: 29
OBJ: LO1 BLM: Applied NOT: WWW

66. Which of the following neurotransmitters is believed to reduce anxiety?

- a. norepinephrine
- b. serotonin
- c. dopamine
- d. GABA

ANS: D PTS: 1 DIF: Easy REF: 30
OBJ: LO1 BLM: Recall

67. Which of the following statements is supported by research on GABA?

- a. GABA is an excitatory neurotransmitter that causes other neurons to fire.
- b. Tranquilizers and alcohol may act on GABA receptors and thus reduce anxiety.
- c. An excess of GABA may be involved in depression.
- d. There are many classes of anti-anxiety drugs that increase the sensitivity of GABA receptors.

ANS: B PTS: 1 DIF: Moderate REF: 30
OBJ: LO1 BLM: Recall NOT: WWW

68. Endorphins are “endogenous.” What does this mean?

- a. They decrease most external messaging into the brain.
- b. They increase pain messages to the brain.
- c. They occur naturally in the brain and the bloodstream.
- d. They decrease the functioning of the immune system.

ANS: C PTS: 1 DIF: Moderate REF: 30
OBJ: LO1 BLM: Conceptual

69. Jack just finished a 42 kilometre marathon. In spite of the physical strain, why does he feel euphoric and elated?

- a. because of a release of dopamine
- b. because of a release of endorphins
- c. because of a release of acetylcholine
- d. because of a release of serotonin

ANS: B PTS: 1 DIF: Moderate REF: 30
OBJ: LO1 BLM: Applied

70. Which of the following is linked to pleasure and the alleviation of pain?
- a. acetylcholine
 - b. norepinephrine
 - c. serotonin
 - d. endorphins

ANS: D PTS: 1 DIF: Easy REF: 30
OBJ: LO1 BLM: Recall

71. Julie has just been involved in a serious car accident, causing multiple injuries that will require medical attention. However, Julie later recalls feeling no pain immediately after the accident. What was released into her bloodstream to prevent Julie from feeling pain?
- a. endorphins
 - b. dopamine
 - c. serotonin
 - d. norepinephrine

ANS: A PTS: 1 DIF: Moderate REF: 30
OBJ: LO1 BLM: Applied

72. Endorphins operate in the brain by blocking the receptor sites for chemicals that transmit which of the following?
- a. messages used in memory formation
 - b. messages used in feeling pain
 - c. messages used to move the body
 - d. messages used in feeling sadness

ANS: B PTS: 1 DIF: Moderate REF: 30
OBJ: LO1 BLM: Conceptual

73. Which of the following may increase the functioning of the immune system?
- a. any of the excitatory neurotransmitters
 - b. endorphins
 - c. dopamine
 - d. serotonin

ANS: B PTS: 1 DIF: Moderate REF: 30
OBJ: LO1 BLM: Conceptual

74. What is a nerve?
- a. a cell body
 - b. a bundle of axons
 - c. a soma
 - d. a neuron cell

ANS: B PTS: 1 DIF: Easy REF: 30
OBJ: LO1 BLM: Recall

75. When considering them together as a single unit, the brain and spinal cord make up which of the following?
- a. the central nervous system
 - b. the peripheral nervous system
 - c. the autonomic nervous system
 - d. the sympathetic nervous system

ANS: A PTS: 1 DIF: Easy REF: 30 – 31
OBJ: LO1 BLM: Recall

76. What branch of the nervous system transmits sensory and motor messages that allow you to pick up your pen?
- a. peripheral
 - b. autonomic
 - c. sympathetic
 - d. parasympathetic

ANS: A PTS: 1 DIF: Moderate REF: 32
OBJ: LO1 BLM: Conceptual NOT: WWW

77. What are the two main divisions of the peripheral nervous system?
- a. the somatic nervous system and the motor nervous system
 - b. the autonomic nervous system and the central nervous system
 - c. the sympathetic nervous system and the parasympathetic nervous system
 - d. the autonomic nervous system and the somatic nervous system

ANS: D PTS: 1 DIF: Easy REF: 31
OBJ: LO1 BLM: Recall

78. Which branch of the nervous system transmits messages about sight, sound, smell, taste, and tactile information?
- a. sympathetic
 - b. somatic
 - c. autonomic
 - d. central

ANS: B PTS: 1 DIF: Easy REF: 31
OBJ: LO1 BLM: Recall

79. What does the somatic nervous system control?
- a. the activity of glands and organs
 - b. heartbeat and breathing
 - c. involuntary body movements
 - d. voluntary body movements

ANS: D PTS: 1 DIF: Easy REF: 31
OBJ: LO1 BLM: Recall NOT: WWW

80. What are the two divisions of the autonomic nervous system?
- the peripheral nervous system and the central nervous system
 - the peripheral nervous system and the somatic nervous system
 - the sympathetic nervous system and the parasympathetic nervous system
 - the somatic nervous system and the motor nervous system

ANS: C PTS: 1 DIF: Easy REF: 31
OBJ: LO1 BLM: Recall

81. Jerome has just completely messed up his presentation in front of the class, and he feels very embarrassed and emotional. Which part of Jerome's nervous system is most active?
- the peripheral nervous system
 - the parasympathetic division of the nervous system
 - the autonomic nervous system
 - the central nervous system

ANS: C PTS: 1 DIF: Difficult REF: 31
OBJ: LO1 BLM: Applied

82. Why might a person experience indigestion when he or she is anxious or fearful?
- The sympathetic division of the autonomic nervous system (ANS) predominates when we feel fear or anxiety.
 - The parasympathetic branch inhibits digestion.
 - The sympathetic division of the autonomic nervous system (ANS) stimulates the digestive process.
 - The central nervous system predominates when we feel fear or anxiety.

ANS: A PTS: 1 DIF: Difficult REF: 31
OBJ: LO1 BLM: Applied

83. During a 5-kilometre run, what part of the autonomic system is active?
- the autonomic branch
 - the parasympathetic branch
 - the central nervous branch
 - the sympathetic branch

ANS: D PTS: 1 DIF: Moderate REF: 31
OBJ: LO1 BLM: Conceptual

84. A person highly trained in yoga and meditation is capable of controlling his heart rate and blood pressure (raising and lowering it at will). What controls these functions?
- the somatosensory cortex
 - the autonomic nervous system
 - the motor cortex
 - the motor nervous system

ANS: B PTS: 1 DIF: Moderate REF: 31
OBJ: LO1 BLM: Conceptual

85. Which branch of the autonomic nervous system controls pupil dilation and rapid heartbeat?
- a. the sympathetic nervous system
 - b. the parasympathetic nervous system
 - c. the somatosensory nervous system
 - d. the peripheral nervous system

ANS: A PTS: 1 DIF: Easy REF: 31
OBJ: LO1 BLM: Recall

86. You are studying psychology at the dining room table when you hear something stirring underneath it. You lean over to investigate, and a rat scurries across the floor. Which part of your nervous system would be suddenly active?
- a. the afferent nervous system
 - b. the sympathetic nervous system
 - c. the central nervous system
 - d. the parasympathetic nervous system

ANS: B PTS: 1 DIF: Moderate REF: 31
OBJ: LO1 BLM: Applied

87. What exactly is a spinal reflex?
- a. an unlearned response to a stimulus that possibly involves only two neurons
 - b. a learned response to a stimulus that possibly involves only one neuron
 - c. an acquired response to a stimulus that possibly involves only one neuron
 - d. a voluntary response to a stimulus that possibly involves only two neurons

ANS: A PTS: 1 DIF: Moderate REF: 32
OBJ: LO1 BLM: Recall

88. After a serious car accident, Dr. Murray tests the reflexes of an unconscious victim. What does the lack of response indicate about the victim's injuries?
- a. They are in the victim's cerebrum.
 - b. They are in the victim's frontal lobes.
 - c. They are in the victim's spinal cord.
 - d. They are in the victim's limbic system.

ANS: C PTS: 1 DIF: Moderate REF: 32
OBJ: LO1 BLM: Applied

89. What is the relationship between brain damage and the associated loss of sensation or control within the body?
- a. Damage towards the back of the brain results in a loss of sensation or control on the front side of the body.
 - b. Damage towards the front of the brain results in a loss of sensation or control on the back of the body.
 - c. Damage on one side of the brain results in a loss of sensation or control on the opposite side of the body.
 - d. Damage on one side of the brain results in a loss of sensation or control on the same side of the body.

ANS: C PTS: 1 DIF: Easy REF: 33
OBJ: LO2 BLM: Recall NOT: WWW

90. You are taking part in a sleep study. Which of the following brain study techniques is most likely to be used by the researcher?
- the magnetic resonance imaging (MRI) method
 - the electroencephalograph (EEG) method
 - a positron emission tomography (PET) scan
 - a computerized axial tomography (CAT) scan

ANS: B PTS: 1 DIF: Easy REF: 34
OBJ: LO2 BLM: Applied

91. What exactly is an electroencephalograph (EEG)?
- a technique that creates an image of the area of the brain that responds to a flashing light
 - a technique that traces the amount of glucose in the brain
 - a technique that passes x-rays through a certain area of the brain
 - a technique that detects very small amounts of electrical activity in the brain

ANS: D PTS: 1 DIF: Moderate REF: 34
OBJ: LO2 BLM: Conceptual

92. Which brain imaging technique uses a computer to integrate measurements of radiation passing through the brain at multiple angles?
- the magnetic resonance imaging (MRI) technique
 - the video imaging procedure
 - the computerized axial tomography (CAT) scan
 - the electroencephalograph (EEG) technique

ANS: C PTS: 1 DIF: Moderate REF: 35
OBJ: LO2 BLM: Recall

93. You are told that a neurologist would like to get some images of your brain, which involves a technique where an x-ray beam will be passed through your head. What brain study technique is the neurologist suggesting?
- the computerized axial tomography (CAT) scan
 - the electroencephalograph (EEG) technique
 - the magnetic resonance imaging (MRI) technique
 - the **positron emission tomography (PET) scan**

ANS: A PTS: 1 DIF: Difficult REF: 35
OBJ: LO2 BLM: Applied

94. What is the method by which the positron emission tomography (PET) scan makes a computer-generated image of one's brain activity?
- by measuring the amount of blood flow shifts in the brain
 - by measuring the amount of glucose metabolized in areas of the brain
 - by measuring the amount of electrical activity on the surface of the brain
 - by measuring the amount of radiation passing through areas of the brain

ANS: B PTS: 1 DIF: Moderate REF: 35
OBJ: LO2 BLM: Recall

95. A neurologist tells you that you need a procedure where you receive an injection of a mild radioactive substance mixed with glucose (which is a “tracer”). What brain study technique is the neurologist suggesting?
- the magnetic resonance imaging (MRI) technique
 - the electroencephalograph (EEG) technique
 - the **positron emission tomography (PET) scan**
 - the computerized axial tomography (CAT) scan

ANS: C PTS: 1 DIF: Moderate REF: 35
OBJ: LO2 BLM: Applied

96. In what brain study technique does a person lie in a powerful magnetic field, while being exposed to radio waves that cause part of the brain to emit signals?
- the computerized axial tomography (CAT) scan
 - the electroencephalograph (EEG) technique
 - the **positron emission tomography (PET) scan**
 - the magnetic resonance imaging (MRI) technique

ANS: D PTS: 1 DIF: Moderate REF: 35
OBJ: LO2 BLM: Recall

97. While the **positron emission tomography (PET) scan** assesses brain activity in terms of *glucose* metabolism, what does the magnetic resonance imaging (MRI) technique assess?
- multiple angles of radiation
 - subtle shifts in blood flow
 - tracers
 - electrical activity

ANS: B PTS: 1 DIF: Moderate REF: 35
OBJ: LO2 BLM: Recall

98. What brain imaging technique includes repeated scans that allow researchers to see the brain at work?
- the **positron emission tomography (PET) scan**
 - the functional magnetic resonance imaging (fMRI) technique
 - the computerized axial tomography (CAT) scan
 - the magnetic resonance imaging (MRI) technique

ANS: B PTS: 1 DIF: Moderate REF: 35
OBJ: LO2 BLM: Recall

99. What is the structure in the hindbrain that regulates heart rate, blood pressure, and breathing?
- the medulla
 - the limbic system
 - the pons
 - the thalamus

ANS: A PTS: 1 DIF: Easy REF: 36
OBJ: LO2 BLM: Recall NOT: WWW

100. What brain structure transmits information about body movements, attention, sleep, and respiration?
- a. the pons
 - b. the medulla
 - c. the hypothalamus
 - d. the cerebellum

ANS: A PTS: 1 DIF: Easy REF: 36
OBJ: LO2 BLM: Recall NOT: WWW

101. An injury to what part of the brain can lead to stumbling, a lack of motor coordination, and loss of muscle tone?
- a. the cerebrum
 - b. the hypothalamus
 - c. the cerebellum
 - d. the thalamus

ANS: C PTS: 1 DIF: Moderate REF: 36
OBJ: LO2 BLM: Applied

102. After her stroke, Cathy was no longer able to coordinate her dance movements. What area was most likely damaged?
- a. the cerebellum
 - b. the amygdala
 - c. the thalamus
 - d. the medulla

ANS: A PTS: 1 DIF: Moderate REF: 36
OBJ: LO2 BLM: Applied

103. Damage to which of the following can prevent an individual from being aroused and possibly lead to a coma?
- a. the thalamus
 - b. the septum
 - c. the reticular activation system (RAS)
 - d. the hypothalamus

ANS: C PTS: 1 DIF: Moderate REF: 36
OBJ: LO2 BLM: Applied

104. What part of the brain is significantly affected by drinking alcohol?
- a. the reticular activating system (RAS)
 - b. the hippocampus
 - c. the amygdala
 - d. the cerebellum

ANS: A PTS: 1 DIF: Moderate REF: 36
OBJ: LO2 BLM: Applied

105. What structure serves as a relay station for incoming sensory stimulation and then directs this information to another area of the brain?
- the reticular activating system (RAS)
 - the pons
 - the thalamus
 - the septum

ANS: C PTS: 1 DIF: Easy REF: 37
OBJ: LO2 BLM: Recall

106. Sensory information from the eyes gets transmitted to the visual cortex via which brain structure?
- the reticular activating system (RAS)
 - the thalamus
 - the hypothalamus
 - the amygdala

ANS: B PTS: 1 DIF: Moderate REF: 37
OBJ: LO2 BLM: Conceptual NOT: WWW

107. In which process does the hypothalamus play a role?
- sensation and perception
 - self-regulating behaviours
 - balance and coordination
 - sexual behaviour

ANS: D PTS: 1 DIF: Moderate REF: 37
OBJ: LO2 BLM: Recall NOT: WWW

108. Tom is unable to sweat. What area of his brain is most likely damaged?
- the reticular activating system (RAS)
 - the hypothalamus
 - the thalamus
 - the hippocampus

ANS: B PTS: 1 DIF: Difficult REF: 37
OBJ: LO2 BLM: Conceptual

109. You are studying electrical stimulation of the brain, and the rats are exhibiting compulsive eating and drinking behaviours. Where is the electrode most likely implanted in the rats?
- the amygdala
 - the septum
 - the hypothalamus
 - the pituitary gland

ANS: C PTS: 1 DIF: Difficult REF: 37
OBJ: LO2 BLM: Conceptual

110. Which of the following is involved in regulating basic drives such as hunger, sex, aggression, as well as memory and emotion?
- the limbic system
 - the lymph system
 - the somatic system
 - the endocrine system

ANS: A PTS: 1 DIF: Easy REF: 38
OBJ: LO2 BLM: Recall NOT: WWW

111. If a person has a damaged hippocampus, which of the following would most likely take place?
- a lack of motor coordination
 - an ability to recall old memories, but no ability to form new ones
 - an inability to sweat
 - a lack of response when reflexes are tested

ANS: B PTS: 1 DIF: Moderate REF: 38
OBJ: LO2 BLM: Recall

112. After a gunshot wound to the head, a patient is unable to form new memories, but can recall old memories. Where will the wound most likely be found?
- the hippocampus
 - the thalamus
 - the cerebrum
 - the cerebellum

ANS: A PTS: 1 DIF: Moderate REF: 38
OBJ: LO2 BLM: Conceptual

113. What type of behaviour does the amygdala make more likely to happen in monkeys, cats, and other animals?
- aggressive behaviour
 - courting behaviour
 - sexual behaviour
 - eating behaviour

ANS: A PTS: 1 DIF: Moderate REF: 38
OBJ: LO2 BLM: Recall

114. Which of the following does the amygdala make more likely to happen?
- body temperature regulation
 - Fear
 - hunger and thirst
 - Balance

ANS: B PTS: 1 DIF: Moderate REF: 38
OBJ: LO2 BLM: Recall

115. What might be the result of destroying the amygdala in an animal?
- a. an aggressive or fearful response
 - b. a hyperactive response
 - c. no response
 - d. a non-aggressive or docile response

ANS: D PTS: 1 DIF: Moderate REF: 38
OBJ: LO2 BLM: Conceptual

116. Which of the following composes a large proportion of the human brain relative to the brain's other parts?
- a. the cerebellum
 - b. the cerebrum
 - c. the medulla
 - d. the limbic system

ANS: B PTS: 1 DIF: Moderate REF: 39
OBJ: LO2 BLM: Recall

117. What is the name of the "wrinkles" in the cerebral cortex?
- a. crevices
 - b. cerebrals
 - c. fissures
 - d. callosums

ANS: C PTS: 1 DIF: Easy REF: 39
OBJ: LO2 BLM: Recall NOT: WWW

118. What is the structure that connects the hemispheres of the cerebral cortex?
- a. the cerebrum
 - b. the thalamus
 - c. the corpus callosum
 - d. the cerebellum

ANS: C PTS: 1 DIF: Easy REF: 39
OBJ: LO2 BLM: Recall

119. The cerebral cortex is best described by which of the following statements?
- a. Areas of the cerebral cortex that are not primarily involved in sensation or motor activity are called association areas.
 - b. The cerebral cortex has a single hemisphere.
 - c. The cerebral cortex is the inner coating of the cerebrum.
 - d. The cerebral cortex is involved in very few of our bodily activities.

ANS: A PTS: 1 DIF: Moderate REF: 39
OBJ: LO2 BLM: Recall

120. A patient comes to his eye doctor complaining of visual difficulties. After a thorough examination, the doctor finds no anatomical problem in the patient's eyes. The doctor therefore refers the patient to a neurologist to investigate possible damage to which of the following areas of the brain?
- a. the occipital lobe
 - b. the frontal lobe
 - c. the parietal lobe
 - d. the temporal lobe

ANS: A PTS: 1 DIF: Moderate REF: 40
OBJ: LO2 BLM: Applied

121. Rick was playing around with a friend when he fell and hit his head. Soon after, he was having difficulty with his vision. In what lobe did he likely sustain injury?
- a. the parietal lobe
 - b. the temporal lobe
 - c. the frontal lobe
 - d. the occipital lobe

ANS: D PTS: 1 DIF: Moderate REF: 40
OBJ: LO2 BLM: Recall

122. Where is the visual area of the cortex located?
- a. the frontal lobe
 - b. the occipital lobe
 - c. the parietal lobe
 - d. the temporal lobe

ANS: B PTS: 1 DIF: Easy REF: 40
OBJ: LO2 BLM: Recall NOT: WWW

123. The auditory cortex lies in what lobe?
- a. the temporal lobe
 - b. the occipital lobe
 - c. the frontal lobe
 - d. the parietal lobe

ANS: A PTS: 1 DIF: Easy REF: 40
OBJ: LO2 BLM: Recall

124. Andy was in a car accident and hit his head. Later, he had trouble hearing. In which lobe did he likely sustain damage?
- a. the occipital lobe
 - b. the parietal lobe
 - c. the temporal lobe
 - d. the frontal lobe

ANS: C PTS: 1 DIF: Moderate REF: 40
OBJ: LO2 BLM: Applied

125. If a neurosurgeon stimulated a specific area of your brain and you felt heat in your left leg, what did the neurosurgeon likely stimulate?
- a. the motor cortex
 - b. the somatosensory cortex
 - c. the hypothalamus
 - d. the thalamus

ANS: B PTS: 1 DIF: Moderate REF: 40
OBJ: LO2 BLM: Applied

126. In what lobe is the somatosensory cortex located?
- a. the temporal lobe
 - b. the frontal lobe
 - c. the occipital lobe
 - d. the parietal lobe

ANS: D PTS: 1 DIF: Easy REF: 40
OBJ: LO2 BLM: Recall

127. In what lobe is the motor cortex located?
- a. the occipital lobe
 - b. the temporal lobe
 - c. the parietal lobe
 - d. the frontal lobe

ANS: D PTS: 1 DIF: Easy REF: 40
OBJ: LO2 BLM: Recall

128. In order to have you raise an arm or move a finger, which of the following areas would a neurosurgeon stimulate?
- a. the visual cortex
 - b. the somatosensory cortex
 - c. the auditory cortex
 - d. the motor cortex

ANS: D PTS: 1 DIF: Difficult REF: 40
OBJ: LO2 BLM: Applied

129. The association areas of the brain are primarily involved in which of the following?
- a. motor action
 - b. learning, thought, and language
 - c. sensation
 - d. somatosensory functions

ANS: B PTS: 1 DIF: Moderate REF: 40
OBJ: LO2 BLM: Recall

130. Which of the following involves the prefrontal region of the brain?
- a. heartbeat and breathing
 - b. sleep and dreaming
 - c. sensations and perceptions
 - d. decision making and problem solving

ANS: D PTS: 1 DIF: Moderate REF: 40
OBJ: LO2 BLM: Recall NOT: WWW

131. What would damage to either the Broca's area or Wernicke's area likely cause?
- a. amnesia
 - b. anger
 - c. aphasia
 - d. hearing loss

ANS: C PTS: 1 DIF: Moderate REF: 41
OBJ: LO2 BLM: Recall

132. What neurological problem is caused by Wernicke's aphasia?
- a. a serious impairment in reading
 - b. an inability to properly segment the sounds within words while reading
 - c. an impairment of the ability to understand and produce speech
 - d. slow and laborious speech

ANS: C PTS: 1 DIF: Moderate REF: 41
OBJ: LO2 BLM: Applied

133. If a patient has damage to Broca's area, he or she usually has which of the following results?
- a. The patient will be able to understand language, but will have difficulty speaking.
 - b. The patient will neither comprehend nor properly produce language.
 - c. The patient will speak much more slowly than before the brain damage.
 - d. The patient will have impaired understanding and difficulty producing of speech.

ANS: A PTS: 1 DIF: Moderate REF: 41
OBJ: LO2 BLM: Conceptual NOT: WWW

134. Which of the following brain areas is/are involved in language processing?
- a. Broca's and Wernicke's areas
 - b. Limbic's area
 - c. the cerebellum
 - d. the angular gyrus

ANS: A PTS: 1 DIF: Moderate REF: 41
OBJ: LO2 BLM: Conceptual NOT: WWW

135. For a right-handed person, which of the following is processed within the left hemisphere of the brain?

- a. visual-spatial functions
- b. logical analysis
- c. mathematical computation
- d. emotion

ANS: B PTS: 1 DIF: Moderate REF: 41
OBJ: LO2 BLM: Conceptual

136. What cognitive function is involved in the left hemisphere of the brain?

- a. mathematical computation
- b. emotion
- c. logical analysis
- d. visual-spatial functioning

ANS: C PTS: 1 DIF: Moderate REF: 41
OBJ: LO2 BLM: Conceptual

137. If an individual has surgery in order to control epilepsy, what will likely happen?

- a. He or she will have the corpus callosum severed.
- b. He or she will lose the ability to retrieve visual and auditory memories.
- c. He or she will lose their cerebral cortex.
- d. He or she will have their hypothalamus removed.

ANS: A PTS: 1 DIF: Difficult REF: 42
OBJ: LO2 BLM: Applied

138. During split-brain operations, what must surgeons do?

- a. Surgeons must cut an incision between the frontal and parietal lobes.
- b. Surgeons must cut both the right and left hemispheres in half.
- c. Surgeons must cut the frontal lobes in half.
- d. Surgeons must sever the corpus callosum.

ANS: D PTS: 1 DIF: Moderate REF: 42
OBJ: LO2 BLM: Recall

139. With epileptic patients, what is the purpose of severing the corpus callosum?

- a. to rid the patient of brain seizures
- b. to confine the seizures to one hemisphere
- c. to minimize seizure activity in both hemispheres
- d. to reduce severe depression

ANS: B PTS: 1 DIF: Difficult REF: 42
OBJ: LO2 BLM: Recall

140. When a patient undergoes a split-brain operation, which of the following is most likely to happen?
- a. The patient's behaviour changes drastically in various areas of both physical and mental functioning.
 - b. If the patient's eyes are closed, he or she can verbally describe an object when holding it in one hand, but not when holding the same object in the opposite hand.
 - c. Generally, the two hemispheres will work together even when the person is playing the piano or solving math problems.
 - d. Although it depends on which area of the brain is severed, only minor aspects of behaviour will change.

ANS: B PTS: 1 DIF: Difficult REF: 42 – 43
OBJ: LO2 BLM: Conceptual

141. How do endocrine glands regulate various bodily functions?
- a. by secreting hormones
 - b. by secreting endorphins
 - c. by secreting neurotransmitters
 - d. by secreting saliva

ANS: A PTS: 1 DIF: Easy REF: 43
OBJ: LO3 BLM: Recall NOT: WWW

142. What gland is often referred to as the “master gland”?
- a. the adrenal glands
 - b. the hypothalamus
 - c. the thyroid gland
 - d. the pituitary gland

ANS: D PTS: 1 DIF: Easy REF: 44
OBJ: LO3 BLM: Recall

143. What gland produces growth hormones?
- a. the hypothalamus
 - b. the adrenal gland
 - c. the pancreas
 - d. the pituitary gland

ANS: D PTS: 1 DIF: Easy REF: 44
OBJ: LO3 BLM: Recall

144. What does the hormone prolactin stimulate?
- a. the production of ova
 - b. the onset of labour
 - c. the production of sperm
 - d. the production of milk

ANS: D PTS: 1 DIF: Moderate REF: 44
OBJ: LO3 BLM: Recall

145. What does the hormone oxytocin stimulate?

- a. the production of ova
- b. the onset of labour.
- c. the production of milk
- d. the production of sperm

ANS: B PTS: 1 DIF: Moderate REF: 44
OBJ: LO3 BLM: Recall

146. Physical growth, maternal behaviour, and the production of urine are influenced by which of the following?

- a. the thyroid gland, which lies above the hypothalamus
- b. the pituitary, which is also known as the “master gland”
- c. the pituitary gland, which secretes a single type of hormone
- d. the hypothalamus, which regulates much of the thyroid activity

ANS: B PTS: 1 DIF: Moderate REF: 44
OBJ: LO3 BLM: Conceptual

147. Although Bobby is only ten years old, he is nearly six feet tall. Tests will likely reveal a problem with which of the following?

- a. the pituitary gland
- b. the adrenal gland
- c. the thyroid gland
- d. the pancreas

ANS: A PTS: 1 DIF: Difficult REF: 44
OBJ: LO3 BLM: Applied

148. Bonny is 16 years old, yet is only four feet tall. Tests will likely reveal deficiencies in hormones produced by which gland?

- a. the pituitary gland
- b. the hippocampus
- c. the adrenal gland
- d. the thyroid gland

ANS: A PTS: 1 DIF: Moderate REF: 44
OBJ: LO3 BLM: Applied

149. What does the hormone vasopressin do?

- a. In humans, it involves monogamy and attachment between men and women.
- b. It stimulates labour in pregnant women.
- c. As an anti-diuretic, it inhibits urine production when bodily fluids are low.
- d. It stimulates the production of milk in women.

ANS: C PTS: 1 DIF: Difficult REF: 44
OBJ: LO3 BLM: Recall NOT: WWW

150. Which of the following regulates the pituitary gland?

- a. the hippocampus
- b. the hormone center
- c. the hypothalamus
- d. the thyroid

ANS: C PTS: 1 DIF: Easy REF: 44
OBJ: LO3 BLM: Recall

151. What does the hormone melatonin influence?

- a. vision
- b. intellectual growth
- c. sleep and waking
- d. hearing

ANS: C PTS: 1 DIF: Moderate REF: 44
OBJ: LO3 BLM: Recall NOT: WWW

152. Which hormone will a person likely take if he or she is having trouble sleeping?

- a. melatonin
- b. prolactin
- c. corticosteroids
- d. thyroxin

ANS: A PTS: 1 DIF: Moderate REF: 44
OBJ: LO3 BLM: Applied

153. Which of the following conditions causes some people to be overweight?

- a. hypothyroidism
- b. hypoglycemia
- c. hyperglycemia
- d. hyperthyroidism

ANS: A PTS: 1 DIF: Difficult REF: 44
OBJ: LO3 BLM: Applied

154. Which of the following results from low secretions of thyroxin?

- a. hypoglycemia
- b. hyperthyroidism
- c. being overweight
- d. anorexia

ANS: C PTS: 1 DIF: Moderate REF: 44
OBJ: LO3 BLM: Recall

155. Bobby's growth is stunted and he exhibits mental retardation. From what does he likely suffer?
- a. too much thyroxin
 - b. cretinism
 - c. hypothyroidism
 - d. hyperthyroidism

ANS: B PTS: 1 DIF: Easy REF: 44
OBJ: LO3 BLM: Applied

156. What is the result of cretinism in children?
- a. a deficiency in thyroxin
 - b. hyperthyroidism
 - c. too much thyroxin
 - d. hyperglycemia

ANS: A PTS: 1 DIF: Moderate REF: 44
OBJ: LO3 BLM: Applied

157. Which glands are located above the kidneys?
- a. the sebaceous glands
 - b. the pituitary glands
 - c. the adrenal glands
 - d. the thyroid glands

ANS: C PTS: 1 DIF: Easy REF: 44
OBJ: LO3 BLM: Recall NOT: WWW

158. What does the adrenal cortex secrete?
- a. oxytocin
 - b. corticosteroids
 - c. thyroxin
 - d. tyrosine

ANS: B PTS: 1 DIF: Moderate REF: 44
OBJ: LO3 BLM: Recall

159. Which of the following produces testosterone?
- a. testes, ovaries, and adrenal glands
 - b. testes only
 - c. ovaries only
 - d. testes and ovaries

ANS: A PTS: 1 DIF: Difficult REF: 45
OBJ: LO3 BLM: Recall

160. Which of the following sex characteristics are involved in reproduction?
- secondary sex characteristics
 - primary sex characteristics
 - anterior sex characteristics
 - inferior sex characteristics

ANS: B PTS: 1 DIF: Moderate REF: 45
OBJ: LO3 BLM: Recall

161. Which of the following produces estrogen?
- only ovaries
 - the hypothalamus
 - testes and ovaries
 - only testes

ANS: C PTS: 1 DIF: Moderate REF: 45
OBJ: LO3 BLM: Recall

162. Which of the following hormones promotes the growth of female reproductive organs and helps maintain pregnancy?
- luteinizing hormone
 - progesterone
 - oxytocin
 - estrogen

ANS: B PTS: 1 DIF: Easy REF: 45
OBJ: LO3 BLM: Recall

163. If you take anabolic steroids, what is likely to happen?
- a decreased resistance to stress
 - an increase in the body's energy supply
 - a decrease in muscle mass
 - serious brain damage

ANS: B PTS: 1 DIF: Moderate REF: 45
OBJ: LO3 BLM: Applied

164. Which of the following concepts proposes that species that are better able to adapt to the environment are more likely to survive and reproduce?
- natural selection
 - struggle for existence
 - mutation
 - maturity

ANS: A PTS: 1 DIF: Easy REF: 46
OBJ: LO4 BLM: Recall

165. Which of the following are small genetic variations that lead to certain physical differences among individuals?
- decoders
 - mutations
 - systematic changes
 - random codes

ANS: B PTS: 1 DIF: Easy REF: 46
OBJ: LO4 BLM: Recall

166. Which of the following is a basic tenet of the theory of evolution?
- Species that have mutations rarely manage to survive.
 - Species that naturally select are less likely to reproduce.
 - Species that survive do not transmit their traits to future generations.
 - Species that do not adapt decrease in numbers and may become extinct.

ANS: D PTS: 1 DIF: Moderate REF: 46
OBJ: LO4 BLM: Conceptual NOT: WWW

167. Evolutionary psychology is most consistent with which of the following statements?
- Social behaviour evolves and can be transmitted from one generation to the next.
 - Creatures that have selected for various environmental challenges have seen their overall numbers decrease.
 - Species that are better mutated to their environment are less likely to survive and reproduce.
 - Mutations are a key process within evolution, as they involve cognitive growth.

ANS: A PTS: 1 DIF: Difficult REF: 46
OBJ: LO4 BLM: Conceptual NOT: WWW

168. Which of the following statements is consistent with the theory of evolutionary psychology?
- Behaviour patterns are termed species-specific because they evolve within all species.
 - Psychologists have found no human behaviours that are instinctive.
 - Social behaviour does not evolve, yet it is transmitted from generation to generation.
 - Instinctive behaviour can be modified by learning.

ANS: D PTS: 1 DIF: Moderate REF: 46
OBJ: LO4 BLM: Conceptual

169. Which of the following is a reason why dogs have a better sense of smell than humans?
- training
 - experience
 - environment
 - heredity

ANS: D PTS: 1 DIF: Moderate REF: 47
OBJ: LO4 BLM: Conceptual NOT: WWW

170. What relationship are behavioural geneticists attempting to understand?
- a. the relationship between heredity and environmental influences
 - b. the relationship between heredity and nutrition
 - c. the relationship between heredity and behaviour
 - d. the relationship between heredity and nature

ANS: A PTS: 1 DIF: Moderate REF: 47
OBJ: LO4 BLM: Conceptual

171. Dr. Barnes is researching the brains of individuals who are alcoholic and have a history of alcoholism in their families. What is Dr. Barnes's most likely profession?
- a. behavioural geneticist
 - b. neurosurgeon
 - c. substance abuse counsellor
 - d. brain surgeon

ANS: A PTS: 1 DIF: Moderate REF: 47
OBJ: LO4 BLM: Applied

172. Which of the following are the fundamental building blocks of heredity?
- a. alleles
 - b. ova and sperm
 - c. genes
 - d. zygotes

ANS: C PTS: 1 DIF: Easy REF: 47
OBJ: LO4 BLM: Recall

173. How many chromosome pairs are in the human body?
- a. 21
 - b. 23
 - c. 42
 - d. 46

ANS: B PTS: 1 DIF: Easy REF: 48
OBJ: LO4 BLM: Recall

174. Which of the following contain approximately 10 to 20 genes?
- a. chromosomes
 - b. sex chromosomes
 - c. neurons
 - d. X chromosomes

ANS: A PTS: 1 DIF: Moderate REF: 48
OBJ: LO4 BLM: Conceptual

175. Our outer, physical appearance is based on which aspect of our genetic makeup?
- a. genotype
 - b. genotype
 - c. sex-type
 - d. phenotype

ANS: D PTS: 1 DIF: Moderate REF: 49
OBJ: LO4 BLM: Conceptual

176. How many chromosomes do we inherit from our mother?
- a. 16
 - b. 23
 - c. 26
 - d. 46

ANS: B PTS: 1 DIF: Easy REF: 49
OBJ: LO4 BLM: Recall

177. What is the result of an extra chromosome on the 21st pair of chromosomes?
- a. dizygotic twins
 - b. Down syndrome
 - c. developmental delay
 - d. monozygotic twins

ANS: B PTS: 1 DIF: Moderate REF: 49 – 50
OBJ: LO4 BLM: Recall

178. Which of the following factors will result in the development of Down syndrome?
- a. one less chromosome on the 23rd pair
 - b. one extra chromosome on the 23rd pair
 - c. one less chromosome on the 21st pair
 - d. one extra chromosome on the 21st pair

ANS: D PTS: 1 DIF: Moderate REF: 49
OBJ: LO4 BLM: Recall

179. Which of the following most accurately describes the research method called kinship studies?
- a. Kinship studies are used to determine the degree of environmental influence on traits and behaviour patterns.
 - b. Kinship studies analyze traits and behaviour patterns of those who are biologically related and biologically unrelated.
 - c. Kinship studies are conducted with adopted individuals.
 - d. Kinship studies analyze traits and behaviour patterns in people who are in the same family.

ANS: B PTS: 1 DIF: Moderate REF: 49
OBJ: LO4 BLM: Conceptual NOT: WWW

180. Jerry and his nephew exhibit the same musical talent, yet Jerry's brother, who is the child's biological father, does *not* demonstrate this skill. Why is this possible from a genetic standpoint?
- a. Parents and children share 100 percent overlap in genetic endowment.
 - b. Siblings share 50 percent genetic endowment with their uncles.
 - c. Aunts and uncles, who are related by blood to their nieces and nephews, have a 25 percent overlap in genetic endowment.
 - d. Siblings share a 100 percent overlap in genetic endowment.

ANS: C PTS: 1 DIF: Difficult REF: 49
OBJ: LO4 BLM: Conceptual

181. Jane's parents are both left-handed. What are the chances that Jane will also be left-handed?
- a. 10 percent
 - b. 40 percent
 - c. 50 percent
 - d. 100 percent

ANS: C PTS: 1 DIF: Difficult REF: 49
OBJ: LO4 BLM: Applied

182. Under what circumstance may certain behaviours between people have a genetic component?
- a. if the people share a similar environment early in their lives
 - b. if a first cousin also shares the same behavioural trait
 - c. if the people are part of the same adopted family
 - d. if the people are close blood relatives

ANS: D PTS: 1 DIF: Moderate REF: 49
OBJ: LO4 BLM: Conceptual

183. What will happen when a zygote divides into two separate cells?
- a. A Down syndrome baby will result.
 - b. The pregnancy will end.
 - c. Dizygotic twins will result.
 - d. Monozygotic twins will result.

ANS: D PTS: 1 DIF: Moderate REF: 49 – 50
OBJ: LO4 BLM: Recall

184. Which of the following statements best describes dizygotic twins?
- a. Dizygotic twins are also referred to as identical twins.
 - b. Dizygotic twins develop when two ova are fertilized.
 - c. Dizygotic twins demonstrate differences that are the result of nurture.
 - d. Dizygotic twins share 100 percent of their genes.

ANS: B PTS: 1 DIF: Moderate REF: 50
OBJ: LO4 BLM: Applied NOT: WWW

185. What type of twins develops when two ova are fertilized?

- a. identical twins
- b. zygotic twins
- c. dizygotic twins
- d. monozygotic twins

ANS: C PTS: 1 DIF: Easy REF: 50
OBJ: LO4 BLM: Recall NOT: WWW

186. For behavioural geneticists who are studying schizophrenia, which of the following is an effective research method?

- a. studying dizygotic twins reared together, whose biological mother is schizophrenic
- b. studying monozygotic twins reared together, whose biological mother is schizophrenic
- c. studying dizygotic twins reared apart, whose biological mother is schizophrenic
- d. studying monozygotic twins reared apart, whose biological mother is schizophrenic

ANS: D PTS: 1 DIF: Difficult REF: 50
OBJ: LO4 BLM: Conceptual

187. What are researchers attempting to do when they study twins raised in adoptive homes?

- a. sort out the effects of nature versus genetics
- b. determine evidence for a genetic role in the appearance of a trait
- c. determine the parenting skills of the adoptive parents
- d. assess the degree of environmental similarity between the twins

ANS: B PTS: 1 DIF: Moderate REF: 50 – 51
OBJ: LO4 BLM: Conceptual

TRUE/FALSE

1. Inhibitory neurons cause other neurons to fire.

ANS: F PTS: 1 DIF: Easy REF: 30
OBJ: LO1 BLM: Recall

2. Dopamine is a neurotransmitter involved in voluntary movements.

ANS: T PTS: 1 DIF: Moderate REF: 28
OBJ: LO1 BLM: Recall

3. Deficiencies in norepinephrine can impair memory formation.

ANS: T PTS: 1 DIF: Moderate REF: 29
OBJ: LO1 BLM: Recall

4. Stimulants like cocaine and amphetamines increase the release of norepinephrine.

ANS: T PTS: 1 DIF: Easy REF: 29
OBJ: LO1 BLM: Recall

5. The sympathetic nervous system is primarily calming.

ANS: F PTS: 1 DIF: Moderate REF: 31
OBJ: LO1 BLM: Conceptual

6. The somatic nervous system controls the automatic functions of the internal organs and glands.

ANS: F PTS: 1 DIF: Easy REF: 31
OBJ: LO1 BLM: Recall NOT: WWW

7. The central nervous system consists of only the spinal cord.

ANS: F PTS: 1 DIF: Easy REF: 33
OBJ: LO1 BLM: Recall

8. Reflexes are inborn behaviour patterns that help individuals adapt to the environment.

ANS: T PTS: 1 DIF: Moderate REF: 32
OBJ: LO1 BLM: Recall

9. The EEG uses X-rays to form images of brain structures.

ANS: F PTS: 1 DIF: Easy REF: 34
OBJ: LO2 BLM: Recall NOT: WWW

10. The limbic system is fully evolved only in mammals.

ANS: T PTS: 1 DIF: Difficult REF: 37
OBJ: LO2 BLM: Recall NOT: WWW

11. The left side of the brain controls the right side of the body.

ANS: T PTS: 1 DIF: Easy REF: 40
OBJ: LO2 BLM: Recall

12. In most individuals, most of their language processing occurs in the right hemisphere.

ANS: F PTS: 1 DIF: Easy REF: 41
OBJ: LO2 BLM: Recall NOT: WWW

13. A large majority of humans are truly left-brained or right-brained.

ANS: F PTS: 1 DIF: Easy REF: 41
OBJ: LO2 BLM: Recall

14. Epinephrine and norepinephrine are secreted by the adrenal medulla.

ANS: T PTS: 1 DIF: Easy REF: 44
OBJ: LO3 BLM: Recall NOT: WWW

15. Charles Darwin's book that made the case for the theory of evolution was titled *The Descent of Man*.

ANS: T PTS: 1 DIF: Easy REF: 46
OBJ: LO4 BLM: Recall

16. A behavioural geneticist studies inborn reasons why individuals may differ in their behaviour and mental processes.

ANS: T PTS: 1 DIF: Easy REF: 47
OBJ: LO4 BLM: Conceptual

17. If a psychological trait is thought to be polygenic, it is influenced by only one gene.

ANS: F PTS: 1 DIF: Easy REF: 49
OBJ: LO4 BLM: Conceptual

COMPLETION

1. The parts of neuron that extend like roots from the cell body, to receive incoming messages from thousands of adjoining neurons, are called _____.

ANS: dendrites

PTS: 1 DIF: Moderate REF: 24 OBJ: LO1
BLM: Recall

2. When fluid on the inside of the neuron is negatively charged, relative to the outside of the neuron, the neuron is in a state called the _____.

ANS: resting state

PTS: 1 DIF: Moderate REF: 26 OBJ: LO1
BLM: Applied

3. Following a neuron's firing, during which a neuron's action potential cannot be triggered, is a phase called the _____.

ANS: refractory period

PTS: 1 DIF: Moderate REF: 27 OBJ: LO1
BLM: Recall

4. Messages travel from neurons to other neurons, muscles, and glands, via chemical messengers called _____.

ANS: neurotransmitters

PTS: 1 DIF: Easy REF: 27 OBJ: LO1
BLM: Recall

5. The process of having unused neurotransmitters be reabsorbed by the axon terminal of the sending neuron is called_____.

ANS: reuptake

PTS: 1 DIF: Moderate REF: 28 OBJ: LO1
BLM: Recall

6. Dopamine deficiencies are linked to _____ disease.

ANS: Parkinson's

PTS: 1 DIF: Easy REF: 28 OBJ: LO1
BLM: Recall

7. The division of the peripheral nervous system that transmits messages about sights, sounds, smells, temperature, and body positions, to the central nervous system, is called the _____.

ANS: somatic nervous system

PTS: 1 DIF: Moderate REF: 31 OBJ: LO1
BLM: Recall

8. If a test is being given that requires an injection of a mild radioactive substance mixed with glucose or a tracer, the neurologist has ordered a _____.

ANS: PET scan

PTS: 1 DIF: Moderate REF: 35 OBJ: LO2
BLM: Applied

9. With an MRI, two things cause parts of the brain to emit signals, a powerful magnetic field and _____.

ANS: radio waves

PTS: 1 DIF: Moderate REF: 35 OBJ: LO2
BLM: Recall

10. Heart rate, blood pressure, and respiration are controlled by an area within the brain called the _____.

ANS: medulla

PTS: 1 DIF: Easy REF: 35 OBJ: LO2
BLM: Recall

11. Located just forward of the medulla, and transmitting information about body movement, this area of the brain is called the _____.

ANS: pons

PTS: 1 DIF: Moderate REF: 36 OBJ: LO2
BLM: Recall

12. The area of the brain that, if injured, could result in impaired motor coordination, is called the _____.

ANS: cerebellum

PTS: 1 DIF: Moderate REF: 36 OBJ: LO2
BLM: Conceptual

13. The visual cortex is in the _____.

ANS: occipital lobe

PTS: 1 DIF: Easy REF: 40 OBJ: LO2
BLM: Recall

14. Language areas of the cortex (for the majority of people) are found in the _____ hemisphere.

ANS: left

PTS: 1 DIF: Easy REF: 40 OBJ: LO2
BLM: Recall

15. The endocrine system consists of _____ that secrete hormones.

ANS: ductless glands

PTS: 1 DIF: Moderate REF: 44 OBJ: LO3
BLM: Recall

16. Often referred to as the “master gland,” this area of the brain is called the _____.

ANS: pituitary

PTS: 1 DIF: Easy REF: 44 OBJ: LO3
BLM: Recall

17. Regulating the sleep-wake cycle, the pineal gland secretes a hormone called _____.

ANS: melatonin

PTS: 1 DIF: Moderate REF: 44 OBJ: LO3
BLM: Recall

18. Influencing the body's metabolism, this gland is called the _____.

ANS: thyroid

PTS: 1 DIF: Easy REF: 44 OBJ: LO3
BLM: Recall

19. The adrenal medulla secretes epinephrine and _____.

ANS: norepinephrine

PTS: 1 DIF: Easy REF: 44 OBJ: LO3
BLM: Recall

20. Within evolutionary psychology, two key concepts are natural selection and _____.

ANS: adaptation

PTS: 1 DIF: Easy REF: 46 OBJ: LO4
BLM: Recall

21. A stereotyped pattern of behaviour that is triggered in a specific situation is called a(n) _____.

ANS: instinct

PTS: 1 DIF: Easy REF: 47 OBJ: LO4
BLM: Recall

22. Genes are segments of chromosomes, which consist of molecules of _____.

ANS: DNA

PTS: 1 DIF: Easy REF: 48 OBJ: LO4
BLM: Recall

23. As they determine whether a person will become male or female, the 23rd pair of chromosomes are called _____.

ANS: sex chromosomes

PTS: 1 DIF: Moderate REF: 49 OBJ: LO4
BLM: Recall

24. Studies of the distribution of traits or behaviour patterns among related people are known as _____ studies.

ANS: kinship

PTS: 1 DIF: Easy REF: 49 OBJ: LO4
BLM: Recall

25. The fertilized egg cell that carries genetic messages from both parents is called a(n) _____.

ANS: zygote

PTS: 1 DIF: Easy REF: 49 OBJ: LO4
BLM: Recall

ESSAY

1. How do neurons communicate?
Describe how a neural impulse travels from a sending neuron to a receiving neuron. In your description, be sure to include the parts of a neuron and what happens at the synapse.

ANS:

Essay should include:

Neural impulse: Dendrites—receive messages from other neurons>Cell body- contains nucleus of the cell >Axon (myelin sheath insulates, speeding transmission)>Terminal button of axon>Synapse>Receiving neuron. Synapse: gap between sending neuron and receiving neuron. As impulse reaches axon terminal of sending neuron, neurotransmitters (chemical messengers) are released and travel across synapse; they fit into specific receptor sites on receiving neuron—completing the transmission.

PTS: 1

2. Discuss two neurological/psychological disorders that have been linked to neurotransmitters. For each disorder:
- Describe the symptoms.
 - Discuss what researchers have learned about the role of neurotransmitters in the disorder.

ANS:

Essay should include:

Two of the following:

Alzheimer's disease:

- Formation of new memories is impaired.
- ACh is abundant in Hippocampus—a structure involved in the formation of new memories. ACh deficiency is connected to Alzheimer's. Evidence found in memory loss of maze learning rats.

Parkinson's disease:

- Progressive loss of muscle control; muscle tremors, jerky uncoordinated movements.
- Dopamine deficiency is connected to Parkinson's. It acts on the brain affecting voluntary movements.

Schizophrenia:

- Confusion and false perceptions.
- Schizophrenics may have more receptors for dopamine in brain areas associated with emotional responding, resulting in overuse of dopamine. Treatment inhibits these receptors.

PTS: 1

3. a) Describe the functions of the Sympathetic and Parasympathetic divisions of the autonomic nervous system.
- b) Provide a real-life example that demonstrates the effects of these two systems in humans.

ANS:

Essay should include:

- The two divisions of the autonomic nervous system have opposing effects. Sympathetic: involved in flight or fight response; increase in heart rate & breathing, increasing glucose, inhibits digestion and salivation. Parasympathetic: calming responses during relaxation; slows heart rate and breathing, stimulated digestion and salivation. When stressed, anxious, or fearful, eating is difficult.
- Any example that involves an arousing or stress inducing situation that is complemented by a calming, restful situation and includes some of the effects described in (a).

PTS: 1

4. Compare and contrast three brain-imaging techniques. Be sure to include what each technique can tell us about a person's brain.

ANS:

Essay should include:

Compare three of the following:

EEG—records electrical activity in the brain (brain waves); can detect certain brain waves associated with sleep, relaxation, or neurological problems.

CT scan—x-rays of the brain; can reveal deformities, blood clots, tumours, other problems.

PET scan—tracing metabolized glucose in the brain by measuring positively charged particles; shows areas of the brain that are most active during different tasks.

MRI—person lies in magnetic field and is exposed to radio waves; measures signals from the brain; allows for repeated observations of changes in blood flow while patient is involved in different tasks.

fMRI—observe brain while it works with repeated scans of the brain. Contrast: could include differences in what is measured in each scan (i.e., CT—x-rays, PET—glucose).

PTS: 1

5. a) Discuss why psychologists are interested in studying identical twins that have been raised in different environments.
b) What is the main conclusion of these studies?

ANS:

Essay should include:

a) Identical twins have almost identical genetics. Studying identical twins reared in different environments can provide a clearer picture of the contribution of genetics. Identical twins in the same family also share the similar environments—making it difficult to evaluate the relative contribution of genetics and environment.

b) Results of the Minnesota study of identical twins reared apart show that they are about as similar as identical twins living together on measures of: intelligence, personality, temperament, interests, and social attitudes. Therefore these traits are likely to be genetically influenced.

PTS: 1

6. Imagine meeting four people who have sustained injury to different sections of their brain. Person A has irreversible damage to her frontal lobe. Person B has irreversible damage to his parietal lobe. Person C has irreversible damage to her temporal lobe and person D has irreversible damage to his occipital lobe. In general, what would the effects of each of these injuries be?

ANS:

Essay should include:

Frontal Lobe A: problems any of the following: speech, problem solving, planning, decision making, emotional responses, personality changes, motor skills.

Parietal Lobe B: sensory problems.

Temporal Lobe C: auditory deficits, problems comprehending speech, or problems finding the right words.

Occipital Lobe D: visual problems.

PTS: 1

7. What is the advantage of knowing that a mental illness is caused by a neurochemical problem? How might a better understanding of brain chemistry help psychologists develop a better definition of mental illness?

ANS:

Essay should include:

Advantages: it may be easier to focus in on treatment options.

The essay should discuss: understanding the role of neurotransmitters in the brain helps psychologists examine what happens when these neurotransmitters are out of balance (too much or too little). This understanding can help in defining the causes of mental illnesses.

PTS: 1

8. Design experiments using each of the following methods to learn something about the brain:
- MRI
 - PET
 - CAT
 - fMRI

In each case, think about what your research question would be and how you would go about answering it. Specify your subject population, your research question and the design of your experiment. How would the information gained from each study differ from the others?

ANS:

Essays should include:

Well designed experiments for each that demonstrate an understanding of what each of these techniques measures: (See answer for essay #233).

PTS: 1

9. You are asked to determine whether schizophrenia is strongly genetically based. Design a study (or studies) to try and address this question. Explain how you would use the results to arrive at an answer to the research question.

ANS:

Essay should include:

A study of twins to examine genetic link. The essay should include a hypothesis and a discussion of an experimental and control group. The essay should also clearly explain how schizophrenia would be measured.

PTS: 1