**Chapter 1: Introduction**

**Total Assessment Guide (T.A.G.)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Topic** | **Question Type** | **Factual** | **Conceptual** | **Applied** |
| **Foundations of Behavioral Neuroscience** | **Multiple Choice** | **1-3,6,9,10,13,17,20,21,23,24,28,29,32,34,40,42,44-51** | **4,8,11,12,19,22,25-27,30,31,33,35-39,41,43**  | **5,7,14-16,18** |
| **Fill-In** | **98-103,105-107** | **104,108** |  |
| **Essay** | **118** | **119,121-123** | **120** |
| **Natural Selection and Evolution** | **Multiple Choice** | **52,53,63,67-70,72-74** | **54-57,60-62,64-66,71** | **58,59** |
| **Fill-In** | **109-113** |  |  |
| **Essay** | **126** | **125** | **124** |
| **Ethical Issues in Research with Humans and Other Animals** | **Multiple Choice** | **75,76,78-82,84-86,88-91** | **77,87** | **83** |
| **Fill-In** | **114-115** |  |  |
| **Essay** | **128** | **127** |  |
| **The Future of Neuroscience: Careers and Strategies for Learning** | **Multiple Choice** | **92-97** |  |  |
| **Fill-In** | **116-117** |  |  |
| **Essay** |  |  |  |

**Multiple-Choice Questions**

1-1. The key deficit suffered by Jeremiah in the chapter vignette was \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ caused by \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. excessive movements; seizures

b. impaired movements; seizures

c. excessive movements; stroke

d. impaired movements; stroke

e. visual difficulties; stroke

Difficulty: 1

Page Ref: 2

Topic: Opening Vignette

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: d. impaired movements; stroke

1-2. To improve his deficit, Jeremiah’s non-affected limb was constrained, forcing him to use the affected limb. This therapy is called

a. constraint-applied therapy.

b. constraint-induced movement therapy.

c. restraint therapy.

d. restraint-applied therapy.

e. forced movement therapy.

Difficulty: 1

Page Ref: 2

Topic: Opening Vignette

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: b. constraint-induced movement therapy

1-3. Constraint-induced movement therapy involves

a. using both limbs to perform complex tasks.

b. constraining the patient’s stroke-affected limb to promote rewiring of the brain.

c. constraining the patient’s non-affected limb to promote rewiring of the brain.

d. engaging in whole body movements.

e. repeated physical therapy on both limbs.

Difficulty: 1

Page Ref: 2

Topic: Opening Vignette

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: b. constraining the patient’s stroke-affected limb to promote rewiring of the brain.

1-4. “You can’t teach an old dog new tricks” was commonly believed, since it was assumed that neurons cannot be generated past a certain age. Recent research, however, suggests that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is less limited than previously thought.

a. neurogenesis

b. brain grafting

c. connectionism

d. collateral sprouting

e. neural migration

Difficulty: 2

Page Ref: 2

Topic: Introduction

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: a. neurogenesis

1-5. A scientist who holds a monistic philosophy would be comfortable with which of the following statements?

a. The universe is a mental construction.

b. The left hemisphere of the brain is the location of the mind.

c. The mind is not composed of matter.

d. Everything is made of matter and energy.

e. The body is physical whereas the mind is spiritual.

Difficulty: 3

Page Ref: 5

Topic: Biological Roots of Behavioral Neuroscience

Skill: Applied
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: d. Everything is made of matter and energy.

1-6. \_\_\_\_\_\_\_\_ is the belief that the mind and body are separate entities.

a. Contralateral neglect

b. Monism

c. Blindsight

d. Dualism

e. Animism

Difficulty: 1

Page Ref: 5

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: d. Dualism

1-7. Which of the following statements is consistent with the monistic view of the mind-body question?

a. Mind and body are separate.

b. The body can influence the mind through the actions of the pineal gland.

c. The mind is spiritual, while the body is made from matter.

d. The mind can exist apart from the body.

e. The mind is generated through the physical actions of the brain.

Difficulty: 3

Page Ref: 5

Topic: Biological Roots of Behavioral Neuroscience

Skill: Applied
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: e. The mind is generated through the physical actions of the brain.

1-8. The mind-body question

a. asks about the nature of the mind and the body.

b. was originally posed by neuroscientists.

c. has been solved.

d. usually involves choosing a dualistic view.

e. is no longer relevant to behavioral neuroscience.

Difficulty: 2

Page Ref: 5

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: a. asks about the nature of the mind and the body.

1-9. The author of the first psychology text was \_\_\_\_\_\_\_\_ and the text was entitled \_\_\_\_\_\_\_\_.

a. Rene Descartes; *A Primer of Psychology*

b. Sigmund Freud; *Dream Interpretation After Cocaine Ingestion*

c. Neil Carlson; *Foundations of Physiological Psychology*

d. Luigi Galvani; *Frog Legs and Psychologic Function*

e. Wilhelm Wundt; *Principles of Physiological Psychology*

Difficulty: 2

Page Ref: 3

Topic: Foundations of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: e. Wilhelm Wundt; *Principles of Physiological Psychology*

1-10. Your textbook author asserts that the primary function of the brain is to

a. allow us to appreciate art and music.

b. allow for the experience of emotions.

c. control movement.

d. create memories of our experiences.

e. interpret our sensory experiences.

Difficulty: 2

Page Ref: 3

Topic: Foundations of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: c. control movement.

1-11. \_\_\_\_\_\_\_\_ represent explanations used by all scientists.

a. Generalizations

b. Falsifications

c. Hallucinations

d. Syllogisms

e. Rationalizations

Difficulty: 1

Page Ref: 4

Topic: The Goals of Research

Skill: Conceptual
LO 1.1 Explain the importance of generalization and reduction in behavioral neuroscience research.

Answer: a. Generalizations

1-12. Generalization is to \_\_\_\_\_\_\_\_\_\_, whereas reductionism is to \_\_\_\_\_\_\_\_\_\_.

a. identify general rules that govern behavior across multiple organisms; identify simple causes of complex behaviors

b. identify simple causes of complex behaviors; identify general rules that govern behavior across multiple organisms

c. organize data in terms of general rules; identify the smallest piece of a neuron

d. identify the smallest piece of a neuron; organize data in terms of general rules

e. organize data in terms of general rules; identify general rules that govern behavior across multiple organisms

Difficulty: 2

Page Ref: 4

Topic: The Goals of Research

Skill: Conceptual
LO 1.1 Explain the importance of generalization and reduction in behavioral neuroscience research.

Answer: a. identify general rules that govern behavior across multiple organisms; identify simple causes of complex behaviors

1-13. Research in neuroscience should focus on

a. reductionism, generalization, and functionalism.

b. reductionism.

c. generalization.

d. functionism.

e. evolution.

Difficulty: 1

Page Ref: 4

Topic: The Goals of Research

Skill: Factual
LO 1.1 Explain the importance of generalization and reduction in behavioral neuroscience research.

Answer: a. reductionism, generalization, and functionalism.

1-14. A neuroscientist removes the eyes of a frog to determine if the frog will still respond to light and dark in the environment. This experiment would be an example of

a. generalization.

b. reductionism.

c. separatism.

d. functionalism.

e. validity.

Difficulty: 2

Page Ref: 4

Topic: The Goals of Research

Skill: Applied

LO 1.1 Explain the importance of generalization and reduction in behavioral neuroscience research.

Answer: b. reductionism.

1-15. A researcher explains aspects of post-traumatic stress disorder as an example of general laws that apply to all people. This situation fits

a. generalization.

b. reductionism.

c. separatism.

d. functionalism.

e. validity.

Difficulty: 2
Page Ref: 4
Topic: The Goals of Research
Skill: Applied
LO 1.1 Explain the importance of generalization and reduction in behavioral neuroscience research.
Answer: a. generalization.

1-16. Imagine that you now experience such an overly strong fear of dogs that you refuse to leave your house for fear of encountering a dog. A learning theorist would suggest that the roots of your fear can be attributed to past classical conditioning, in which you associated the sight and sound of a dog with some aversive experience. This type of explanation would involve the process of

a. rationalization.

b. pseudoscience.

c. reductionism.

d. generalization.

e. dualism.

Difficulty: 2
Page Ref: 4
Topic: The Goals of Research
Skill: Applied
LO 1.1 Explain the importance of generalization and reduction in behavioral neuroscience research.
Answer: c. reductionism.

1-17. A scientific explanation of a complex phenomenon that is cast in terms of a simpler one involves the process of

a. rationalization.

b. falsification.

c. generalization.

d. deduction.

e. reduction.

Difficulty: 2

Page Ref: 4

Topic: The Goals of Research
Skill: Factual
LO 1.1 Explain the importance of generalization and reduction in behavioral neuroscience research.

Answer: e. reduction.

1-18. You notice that your roommate has difficulty sleeping after consuming heavily caffeinated drinks. You know from your courses that caffeine can stimulate brain neurons that produce arousal (and that such arousal disturbs sleep function). If you suggest to your roommate that his/her insomnia reflects the action of caffeine on brain function, your explanation would involve the process of

a. reduction.

b. superordinate causality.

c. generalization.

d. induction.

e. falsification.

Difficulty: 3

Page Ref: 4

Topic: The Goals of Research
Skill: Applied
LO 1.1 Explain the importance of generalization and reduction in behavioral neuroscience research.

Answer: a. reduction.

1-19. Which of the following statements is correct?

a. Reduction uses complicated processes to explain simple ones.

b. The goal of reduction is to predict a phenomenon under study.

c. Generalization and reduction are important tools in science.

d. Scientists only use reductionistic explanations.

e. Most scientific studies use on-human experimental subjects.

Difficulty: 3

Page Ref: 4

Topic: The Goals of Research

Skill: Conceptual
LO 1.1 Explain the importance of generalization and reduction in behavioral neuroscience research.

Answer: c. Generalization and reduction are important tools in science.

1-20. Ancient Greek culture before Hippocrates considered the \_\_\_\_\_\_\_\_ to be the seat of thought and emotion.

a. gut

b. heart

c. brain

d. pineal gland

e. stomach

Difficulty: 1

Page Ref: 5

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: b. heart

1-21. The philosopher \_\_\_\_\_\_\_\_ attributed thought and emotion to the brain, whereas \_\_\_\_\_\_\_\_ considered the function of the brain as important for cooling the heart.

a. Aristotle; Hippocrates

b. Galen; Aristotle

c. Hippocrates; Aristotle

d. Plato; Galen

e. Hippocrates; Plato

Difficulty: 2

Page Ref: 5

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: c. Hippocrates; Aristotle

1-22. Which of the following comments on brain function would be most likely to be made by Aristotle?

a. The mind acts through the pineal body to control the body.

b. The brain serves to cool the passions of the heart.

c. The brain is the seat of emotion, but not thought.

d. The brain routes sensory information to the heart

e. Injury to the brain alters emotion and thought.

Difficulty: 2

Page Ref: 5

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: b. The brain serves to cool the passions of the heart.

1-23. René Descartes asserted that

a. humans cannot understand the nature of the real world.

b. the heart is the seat of thought and emotion.

c. the brain acts to cool the passions of the heart.

d. animals are mechanical creatures controlled by environmental stimuli.

e. the mind is an emergent property of the brain.

Difficulty: 2

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: d. animals are mechanical creatures controlled by environmental stimuli.

1-24. Descartes, who first described and studied reflexes, was a

a. monist.

b. reductionist.

c. pluralist.

d. dualist.

e. animist.

Difficulty: 2

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: d. dualist.

1-25. René Descartes would be considered to hold a \_\_\_\_\_\_\_\_ view of the mind-body problem.

a. monist

b. reductionist

c. pluralist

d. dualist

e. animist

Difficulty: 2

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: d. dualist

1-26. Descartes’s view of the mind-body was unique in that he argued that

a. the heart is the organ that controls emotions.

b. the muscles are activated by electrical nerve signals.

c. unlike animals, human bodies do not show reflexes.

d. a reflex is a process controlled by the mind.

e. the mind controls the movements of the body.

Difficulty: 3

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: e. the mind controls the movements of the body.

1-27. Descartes argued that

a. the heart is the organ that controls emotions.

b. the muscles are activated by electrical nerve signals.

c. unlike animals, human bodies do not show reflexes.

d. nerves produce bodily movements by inflating muscles with fluid.

e. the mind is not linked to the brain.

Difficulty: 3

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: d. nerves produce bodily movements by inflating muscles with fluid.

1-28. According to Descartes, the \_\_\_\_\_\_\_\_ was the point of interaction in the brain where the mind controlled the physical body.

a. hypothalamus

b. corpus callosum

c. amygdala

d. hippocampus

e. pineal body

Difficulty: 3

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: e. pineal body

1-29. In a simple experiment, Galvani disproved the hydraulic nerve-muscle model proposed by Descartes. Galvani removed a nerve and its attached muscle fibers from a frog and showed that \_\_\_\_\_\_\_\_ of the nerve caused \_\_\_\_\_\_\_\_ of the muscle.

a. electrical stimulation; relaxation

b. electrical stimulation; contraction

c. chemical stimulation; contraction

d. pressurization; relaxation

e. chemical stimulation; relaxation

Difficulty: 2

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: b. electrical stimulation; contraction

1-30. Galvani’s experiment involving a frog leg proved that

a. the heart is the organ that controls emotions.

b. the muscles are activated by electrical nerve signals.

c. unlike animals, human bodies do not possess reflexes.

d. a reflex is a process controlled by the mind.

e. the pineal gland pushes fluid through nerves into the muscles.

Difficulty: 2

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: b. the muscles are activated by electrical nerve signals.

1-31. Which of the following statements is consistent with Descartes’s explanation of the mind-body question?

a. The brain contains air-filled chambers.

b. Nerves are filled with air and are under minimal pressure.

c. Muscle activation requires no input from the brain.

d. Electrical stimulation of a nerve evokes contraction of a detached muscle.

e. The pineal body controls the body muscles.

Difficulty: 3

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: e. The pineal body controls the body muscles.

1-32. \_\_\_\_\_\_\_\_ was a physiologist who proposed the doctrine of specific nerve energies.

a. Johannes Müller

b. Paul Broca

c. Rene Descartes

d. Ivan Pavlov

e. Wilhelm Wundt

Difficulty: 1

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: a. Johannes Müller

1-33. Which of the following is consistent with the doctrine of specific nerve energies?

a. Electrical stimulation of a sensory nerve can evoke a specific sensation.

b. All nerves carry dissimilar electrical messages.

c. Exerting pressure on the eyeball can evoke the sensation of sound.

d. Nerves can be activated by psychological stimuli.

e. The height of the action potential depends on which sensory system has been activated.

Difficulty: 3

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: a. Electrical stimulation of a sensory nerve can evoke a specific sensation.

1-34. Which scientist was among the first to advocate the use of experimental techniques in the study of physiology?

a. John Watson

b. Rene Descartes

c. Aristotle

d. Johannes Müller

e. Charles Darwin

Difficulty: 2

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: d. Johannes Müller

1-35. Johannes Müller proposed

a. an important role for natural selection in the evolution of behavior.

b. that language is a function of the right hemisphere.

c. that the brain is divided into different functional areas with each receiving signals from a different set of nerves.

d. that the pineal body allows the brain to control the mind.

e. that the heart is the seat of thought and emotion.

Difficulty: 2

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: c. that the brain is divided into different functional areas with each receiving signals from a different set of nerves.

1-36. Pierre Flourens is known

a. for his use of the experimental ablation technique to examine brain function.

b. as the father of modern philosophy.

c. for proposing the theory of evolution.

d. for his study of language abilities in stroke victims.

e. as a dualist philosopher.

Difficulty: 2

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: a. for his use of the experimental ablation technique to examine brain function.

1-37. The technique of experimental ablation involves

a. comparing the relative size of brains across different species.

b. measurements of conduction velocity rates in damaged and intact nerves.

c. chronic chemical stimulation of the brain.

d. low-level electrical stimulation of the brain.

e. assessment of behavioral changes after the intentional damage to a portion of the brain.

Difficulty: 3

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: e. assessment of behavioral changes after the intentional damage to a portion of the brain

1-38. The doctrine of specific nerve energies was proposed by

a. Rene Descartes.

b. Sigmund Freud.

c. Pierre Flourens.

d. Johannes Müller.

e. Paul Broca.

Difficulty: 3

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: d. Johannes Müller

1-39. Paul Broca performed an autopsy of the brain of a patient who had been unable to speak after suffering a stroke. Broca concluded that

a. the control of speech is a function of the left hemisphere.

b. the pineal body controls speech production.

c. damage to the right hemisphere impairs speech.

d. muscle atrophy after a stroke is the result of a fluid pressure drop in the ventricles.

e. the corpus callosum is critical for speech production.

Difficulty: 2

Page Ref: 7

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: a. the control of speech is a function of the left hemisphere.

1-40. \_\_\_\_\_\_\_\_\_ conducted experimental ablation in animals, whereas \_\_\_\_\_\_\_\_ applied the concept experimental ablation to humans.

a. Flourens; Broca

b. Broca; Flourens

c. Müller; Flourens

d. Müller; Broca

e. Broca; Müller

Difficulty: 2

Page Ref: 6-7

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: a. Flourens; Broca

1-41. In 1870, Fritsch and Hitzig reported that electrical stimulation of the \_\_\_\_\_\_\_\_ in dogs resulted in muscle contractions of \_\_\_\_\_\_\_\_.

a. pineal gland; the facial muscles

b. parietal cortex; the opposite side of the body

c. corpus callosum; both hind legs

d. primary motor cortex; the opposite side of the body

e. globus pallidus; the same side of the body

Difficulty: 2

Page Ref: 7

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: d. primary motor cortex; the opposite side of the body

1-42. Hermann von Helmholtz is known for

a. his contributions to the study of philosophy.

b. his contributions to the study of learning and memory.

c. his invention of the electroencephalograph.

d. measuring the speed of light.

e. his measurements of nerve cell conduction velocity.

Difficulty: 2

Page Ref: 7

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: e. his measurements of nerve cell conduction velocity.

1-43. In his studies of nerve conduction velocity, Hermann von Helmholtz noted that

a. electrical signal speeds differ from nerve to nerve.

b. nerve conduction velocity is at the speed of light.

c. nerves conduct signals faster than do electrical wires.

d. the velocity of nerve conduction is slower in nerves than in wires.

e. different sensory systems use different conduction speeds.

Difficulty: 3

Page Ref: 7

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: d. the velocity of nerve conduction is slower in nerves than in wires.

1-44. Which is the correct match between scientist and idea?

a. Paul Broca; doctrine of specific nerve energies

b. Pierre Flourens; use of ablation to study brain-behavior relations

c. Fritsch and Hitzig; language is localized within the left hemisphere

d. Rene Descartes; doctrine of specific nerve energies

e. Sigmund Freud; use of ablation to study brain-behavior relations

Difficulty: 3

Page Ref: 7

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: b. Pierre Flourens; use of ablation to study brain-behavior relations

1-45. Hermann von Helmholtz estimated that nerve conduction velocity is about

a. 9 feet/second.

b. 90 feet/second.

c. 900 feet/second.

d. 9000 feet/second.

e. 90,000 feet/second.

Difficulty: 2

Page Ref: 7

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: b. 90 feet/second.

1-46. This scientist discovered neurons that terminated on cardiac cells that were responsible for controlling contractions of the heart.

a. Jan Purkinje

b. Hermann von Helmholtz

c. Luigi Galvani

d. Johannes Müller

e. Pierre Flourens

Difficulty: 1

Page Ref: 7

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: a. Jan Purkinje

1-47. Purkinje cells can be found in the

a. medulla.

b. cerebral cortex.

c. tegmentum.

d. cerebellum.

e. amygdala.

Difficulty: 1

Page Ref: 7

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: d. cerebellum

1-48. Neurons that terminated on cardiac cells that were responsible for controlling contractions of the heart are known as

a. cardiac cells.

b. neurofibrillary cells.

c. Purkinje fibers.

d. myocardium fibers.

e. cardiac fibers.

Difficulty: 1

Page Ref: 7

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: c. Purkinje fibers

1-49. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ used the Golgi staining technique to examine individual neurons in the brain.

a. Camillo Golgi

b. Jan Purkinje

c. Hermann von Helmholtz

d. Luigi Galvani

e. Santiago y Cajal

Difficulty: 1

Page Ref: 7

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: e. Santiago y Cajal

1-50. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ won a Nobel Prize in 1906 for his work in describing the structure of the nervous system.

a. Camillo Golgi

b. Jan Purkinje

c. Hermann von Helmholtz

d. Luigi Galvani

e. Santiago y Cajal

Difficulty: 1

Page Ref: 7

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: e. Santiago y Cajal

1-51. John O’Keefe, May-Britt Moser, and Edvard Moser were awarded the 2014 Nobel Prize for

a. developing amplifiers to detect weak electrical signals.

b. developing neurochemical techniques to analyze chemical changes within cells.

c. discovering mirror neurons.

d. discovering a spatial positioning system in the brain.

e. treating depression with deep brain stimulation.

Difficulty: 2

Page Ref: 8

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: d. discovering a spatial positioning system in the brain.

1-52. Charles Darwin proposed the principle of

a. specific nerve energy.

b. primary motor cortex.

c. experimental ablation.

d. natural selection.

e. functionalism.

Difficulty: 1

Page Ref: 10

Topic: Functionalism and the Inheritance of Traits

Skill: Factual
LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: d. natural selection.

1-53. \_\_\_\_\_\_\_\_\_\_\_\_\_ refers to a situation when a particular characteristic allows an organism to be more reproductively successful, causing the characteristic to become more prevalent.

a. Darwinism

b. Natural selection

c. Artificial selection

d. Mutation

e. Selective advantage

Difficulty: 1

Page Ref: 10

Topic: Functionalism and the Inheritance of Traits

Skill: Factual
LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: b. Natural selection

1-54. The belief that the natural characteristics of an organism exert useful effects is termed

a. reductionism.

b. positivism.

c. functionalism.

d. consolidation.

e. adaptation.

Difficulty: 2

Page Ref: 9

Topic: Functionalism and the Inheritance of Traits

Skill: Conceptual
LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: c. functionalism.

1-55. Functionalism is demonstrated by

a. no brain differences between different songbird species.

b. same-sized spatial reasoning areas in the brains in a species that primarily hunts and one that does not.

c. more activity in the amygdala in an aggressive species.

d. equal levels of activity in the amygdala for calm and aggressive species.

e. no differences in degree of development of the cerebral cortex between dolphins and snakes.

Difficulty: 1

Page Ref: 9

Topic: Functionalism and the Inheritance of Traits

Skill: Conceptual
LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: c. more activity in the amygdala in an aggressive species.

1-56. The physiological mechanisms of an organism that give rise to certain behaviors

a. can be said to have purpose.

b. can be understood in terms of whether the behaviors produce useful functions.

c. are thought to be different from species to species.

d. are not subject to evolutionary principles.

e. are present at birth and do not require environmental stimulation for complete expression.

Difficulty: 3

Page Ref: 9

Topic: Functionalism and the Inheritance of Traits

Skill: Conceptual
LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: b. can be understood in terms of whether the behaviors produce useful functions.

1-57. The principle of natural selection proposes that certain characteristics that \_\_\_\_\_\_\_\_ will become more prevalent in a species.

a. are associated with multiple genetic mutations

b. inhibit reproductive behaviors

c. increase reproductive success

d. impair adaption to the local environment

e. reduce reproductive success

Difficulty: 3

Page Ref: 10

Topic: Functionalism and the Inheritance of Traits

Skill: Conceptual
LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.
Answer: c. increase reproductive success

1-58. Over successive generations, moths develop spots that resemble eyes on their wings that scare off predators. This characteristic would be a \_\_\_\_\_\_\_\_\_\_\_.

a. selective advantage

b. genetic susceptibility

c. general advantage

d. selective disadvantage

e. genetic predisposition

Difficulty: 2

Page Ref: 10

Topic: Functionalism and the Inheritance of Traits

Skill: Applied
LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: a. selective advantage

1-59. Praying mantises are typically green or brown in color to allow them to blend into their surroundings. If a group of praying mantises were born a different color, they would be at a disadvantage. This change, although not advantageous for the mantis, could happen naturally through

a. mutation.

b. gene splicing.

c. genetic alteration.

d. natural selection.

e. genetic predisposition.

Difficulty: 2

Page Ref: 10

Topic: Functionalism and the Inheritance of Traits

Skill: Applied
LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: a. mutation.

1-60. Mutations involve

a. adverse neural development caused by drug ingestion in adulthood.

b. accidental changes in the genetic information of the chromosomes.

c. poor adaptation to the environment.

d. improved reproductive success.

e. only beneficial changes in the characteristics of an organism.

Difficulty: 3

Page Ref: 10

Topic: Functionalism and the Inheritance of Traits

Skill: Conceptual
LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: b. accidental changes in the genetic information of the chromosomes.

1-61. Genetic mutations

a. have mostly beneficial effects.

b. usually increase the survivability of offspring.

c. rarely result in problems for the offspring.

d. are usually deleterious.

e. always confer selective advantages to the offspring.

Difficulty: 3

Page Ref: 10

Topic: Functionalism and the Inheritance of Traits

Skill: Conceptual
LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: d. are usually deleterious.

1-62. The key benefit of genetic diversity for a species is that

a. diversity allows the species to adapt to different environments.

b. mutations are kept to a minimum.

c. diversity promotes neural development.

d. diversity reduces reproductive success.

e. harmful mutations are increased in the species.

Difficulty: 3

Page Ref: 10-11

Topic: Functionalism and the Inheritance of Traits

Skill: Conceptual
LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: a. diversity allows the species to adapt to different environments.

1-63. Traits that can be altered via genetic mutations

a. are beneficial.

b. are unobservable.

c. are physical.

d. exert direct actions on behavior.

e. mostly involve psychological function.

Difficulty: 2

Page Ref: 10

Topic: Functionalism and the Inheritance of Traits

Skill: Factual
LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: c. are physical.

1-64. The process of evolution

a. does not involve genetic mutations.

b. can occur in the absence of natural selection.

c. rests on the doctrine of specific nerve energies.

d. refers to a gradual change in the structure and function of a species.

e. was proven correct by experimental ablation experiments.

Difficulty: 3

Page Ref: 11

Topic: Evolution of Large Brains

Skill: Conceptual

LO 1.4 Identify factors involved in the evolution of large brains in humans.

Answer: d. refers to a gradual change in the structure and function of a species.

1-65. \_\_\_\_\_\_\_\_ is thought to be an advantage associated with the development of color vision in primates.

a. The ability to breed at night

b. The ability to move in the forest at night

c. The capacity to discriminate ripe from unripe fruit

d. The capacity to communicate using symbols

e. Rapid nerve conduction

Difficulty: 3

Page Ref: 11

Topic: Evolution of Large Brains

Skill: Conceptual

LO 1.4 Identify factors involved in the evolution of large brains in humans.

Answer: c. The capacity to discriminate ripe from unripe fruit

1-66. The development of perception that allowed for color differentiation was a functional development; not all animals have this ability. What made it functional?

a. It allowed the ability to breed at night.

b. It allowed for night vision.

c. It allowed for differentiation of ripe fruits.

d. It enabled bipedalism.

e. It allowed for contrast detection.

Difficulty: 3

Page Ref: 11

Topic: Evolution of Large Brains

Skill: Conceptual

LO 1.4 Identify factors involved in the evolution of large brains in humans.

Answer: c. It allowed for differentiation of ripe fruits.

1-67. Which of the following was the key characteristic of early humans that allowed them to effectively out-compete other species?

a. Color vision allowed for the detection of ripe fruit and game.

b. Mastery of fire allowed for provision of warmth in shelters.

c. Agile hands allowed for the creation and use of tools.

d. Mastery of fire allowed food to be cooked.

e. A larger brain allowed for more complicated behavior.

Difficulty: 1

Page Ref: 11

Topic: Evolution of Large Brains

Skill: Factual
LO 1.4 Identify factors involved in the evolution of large brains in humans.

Answer: e. A larger brain allowed for more complicated behavior.

1-68. With regard to the surviving members of the primate family tree,

a. members of the family tree share 78.8% of their DNA.

b. members of the family tree share 98.8% of their DNA.

c. chimpanzees and gorillas share 50% of their genes.

d. humans share only 1.2% of their genes with other members of the family tree.

e. there is little genetic similarity between primate groups.

Difficulty: 2

Page Ref: 11

Topic: Evolution of Large Brains

Skill: Factual
LO 1.4 Identify factors involved in the evolution of large brains in humans.

Answer: b. members of the family tree share 98.8% of their DNA.

1-69. Which of the following is true of the hominid species?

a. Homo sapiens left Africa around 1.7 million years ago.

b. Homo erectus made tools from stone.

c. Homo sapiens eventually killed off Homo neanderthalis through armed conflicts.

d. Modern humans are known as Homo sapiens.

e. Homo sapiens evolved directly from Homo neanderthalis.

Difficulty: 3

Page Ref: 11

Topic: Evolution of Large Brains

Skill: Factual

LO 1.4 Identify factors involved in the evolution of large brains in humans.

Answer: d. Modern humans are known as Homo sapiens.

1-70. Which of the following is correct with regard to the relation between brain size and body size?

a. Human brains are larger than other species when expressed relative to total body weight.

b. Human brains are larger than elephant brains in terms of absolute size.

c. The human brain is more than 5% of total body weight.

d. The elephant brain is larger than the human brain in terms of percent of body weight.

e. Larger brains require smaller bodies.

Difficulty: 2

Page Ref: 13

Topic: Evolution of Large Brains

Skill: Factual

LO 1.4 Identify factors involved in the evolution of large brains in humans.

Answer: a. Human brains are larger than other species when expressed relative to total body weight.

1-71. Recent research has shown that intelligence is dictated by

a. the number of neurons not dedicated to set functions, like walking.

b. the number of neurons dedicated to movement and other set functions.

c. ratio of larger brain to body size.

d. ratio of smaller brain to body size.

e. degree of connections between neurons.

Difficulty: 2

Page Ref: 13

Topic: Evolution of Large Brains

Skill: Conceptual
LO 1.4 Identify factors involved in the evolution of large brains in humans.

Answer: a. the number of neurons not dedicated to set functions, like walking.

1-72. \_\_\_\_\_\_\_\_ refers to the concept that human brain maturation takes a long time relative to that of other species.

a. Adaptation

b. Mutational drift

c. Schizotemy

d. Neoteny

e. Maladaptation

Difficulty: 2

Page Ref: 13

Topic: Evolution of Large Brains

Skill: Factual

LO 1.4 Identify factors involved in the evolution of large brains in humans.

Answer: d. Neoteny

1-73. An adult human brain undergoes a \_\_\_\_\_\_-fold increase in weight relative to that of the newborn brain.

a. two

b. four

c. six

d. eight

e. ten

Difficulty: 2

Page Ref: 13

Topic: Evolution of Large Brains

Skill: Factual

LO 1.4 Identify factors involved in the evolution of large brains in humans.

Answer: b. four

1-74. In humans, the brain reaches adult size by

a. adolescence.

b. infancy.

c. early childhood.

d. middle childhood.

e. old age.

Difficulty: 2

Page Ref: 13

Topic: Evolution of Large Brains

Skill: Factual

LO 1.4 Identify factors involved in the evolution of large brains in humans.

Answer: a. adolescence

1-75. Which of the following is an argument made by the text author regarding the use of animals by humans?

a. Owning a pet requires permission from a veterinarian.

b. Pet homes are regularly inspected by the government.

c. More suffering occurs with pet owning than with research.

d. More animals die in research projects than when used as pets.

e. No animal research has been useful for understanding and treating human disease.

Difficulty: 2

Page Ref: 14

Topic: Research with Animals

Skill: Factual
LO 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: c. More suffering occurs with pet owning than with research.

1-76. Animal rights activists are most concerned with the

a. issue of hunting and trapping of animals.

b. eating of animals as food.

c. use of animals as companions to humans.

d. use of animals as a source of fur for human clothing.

e. use of animals as subjects for research.

Difficulty: 2

Page Ref: 15
Topic: Research with Animals

Skill: Factual
LO 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: e. use of animals as subjects for research.

1-77. Which of the following statements would LEAST likely be made by an animal rights activist?

a. Animal research is unethical.

b. Animals have the same degree of rights as do humans.

c. The use of animals in research can be justified by the benefits of such research.

d. Animal research must be supervised by veterinarians.

e. There should be limits to the types of studies that are done using animals.

Difficulty: 2

Page Ref: 15

Page Topic: Research with Animals

Skill: Conceptual
LO 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: c. The use of animals in research can be justified by the benefits of such research.

1-78. Your textbook author views \_\_\_\_\_\_\_\_ as an indispensable use of animals.

a. research for the treatment of human disease

b. use as a source of food

c. use as companions to humans

d. use as a source of fur

e. value as entertainment

Difficulty: 2

Page Ref: 15

Topic: Research with Animals

Skill: Factual
LO 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: a. research for the treatment of human disease

1-79. A benefit of using animals for research purposes includes

a. the ability of the researcher to mistreat the research animals.

b. the ability to test hypotheses in a non-controlled environment.

c. the ability to control the history of the animals.

d. the ability to experimentally produce ailments in humans.

Difficulty: 1

Page Ref: 15

Topic: Research with Animals

Skill: Factual
LO 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: c. the ability to control the history of the animals.

1-80. Research with animals is

a. highly regulated.

b. largely unregulated because animals are not viewed as having rights.

c. only partially regulated with chimpanzees having greatest protections.

d. only partially regulated with marine life having greatest protections.

e. only partially regulated with rodents having greatest protections.

Difficulty: 1

Page Ref: 15

Topic: Research with Animals

Skill: Factual
LO 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: a. highly regulated.

1-81. A stroke induces brain damage because of

a. compression of glial cells.

b. reduced blood flow to a region of the brain.

c. increased cranial pressure.

d. increased nutrient flow to brain tissue.

e. increased blood flow to a region of the brain.

Difficulty: 2

Page Ref: 15

Topic: Research with Animals

Skill: Factual
LO 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: b. reduced blood flow to a region of the brain.

1-82. Research with monkeys in the 1990s indicated that damaged nerves could be regenerated over time. This finding supports which concept of brain?

a. flexibility

b. rigidity

c. plasticity

d. stasis

e. transformability

Difficulty: 1

Page Ref: 17

Topic: Research with Animals

Skill: Factual
LO 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: c. plasticity

1-83. A friend of yours was asked to be a research participant for a study investigating the effect of a pain reliever on muscle tears. In order to test the effectiveness of the drug, your friend will need to engage in physical activity that results in small tears in the muscles of the forearm. You caution that all studies involving human subjects must include

a. freedom from risks.

b. monetary benefits for participants.

c. informed consent.

d. parental consent even if over the age of 18 years.

e. freedom from benefits.

Difficulty: 1

Page Ref: 16

Topic: Research with Humans

Skill: Applied
LO 1.6 Discuss ethical considerations in research with human participants.

Answer: c. informed consent.

1-84. A statement in which the researcher informs any potential participant about the nature of the study, how the data will be collected and stored, and what the anticipated benefits and costs will be for participating is called

a. right to withdraw.

b. agreement.

c. research agreement.

d. informed consent.

e. informed agreement.

Difficulty: 1

Page Ref: 16

Topic: Research with Humans

Skill: Factual
LO 1.6 Discuss ethical considerations in research with human participants.

Answer: d. informed consent.

1-85. You should not sign an informed consent if it is missing

a. the researcher’s hypothesis.

b. background literature about the study.

c. risks and benefits.

d. the researcher’s opinion about the literature.

Difficulty: 1

Page Ref: 16

Topic: Research with Humans

Skill: Factual
LO 1.6 Discuss ethical considerations in research with human participants.

Answer: c. risks and benefits.

1-86. The board of scientists and laypeople who review studies with human participants to determine if they protect human rights is called the

a. Institutional Research Board.

b. University Research Board.

c. Institutional Review Board.

d. Institutional Research Review Board.

e. University Review Board.

Difficulty: 1

Page Ref: 15-16

Topic: Research with Humans

Skill: Factual
LO 1.6 Discuss ethical considerations in research with human participants.

Answer: c. Institutional Review Board.

1-87. Which of the following would have to undergo IRB review?

a. recording whether or not men make remarks to a woman who is walking down the street

b. watching people at the mall to see if they are friendly when passing each other

c. providing depression medication to an experimental group

d. unobtrusively timing how long it takes women to urinate

e. observing whether individuals open the door for others

Difficulty: 1

Page Ref: 15-16

Topic: Research with Humans

Skill: Conceptual
LO 1.6 Discuss ethical considerations in research with human participants.

Answer: c. providing depression medication to an experimental group

1-88. In 2010, a case of vague informed consent led to legal and financial consequences for the research group who conducted the study. What was the case?

a. *Havasupai Tribe v. Arizona Board of Regents*

b. *Havasupai Tribe v. Arizona Board of Researchers*

c. *Havasupai Tribe v. University of Minnesota*

d. *GlaxoSmithKline (GSK) v. Havasupai Tribe*

e. *Havasupai Tribe v. Miami Children’s Hospital Research Institute*

Difficulty: 1

Page Ref: 16

Topic: Research with Humans

Skill: Factual
LO 1.6 Discuss ethical considerations in research with human participants.

Answer: a. *Havasupai Tribe v. Arizona Board of Regents*

1-89. In a case of vague informed consent, Havasupai Tribe members gave blood samples for the purposes of research on \_\_\_\_\_\_\_\_\_\_\_\_\_\_ but the blood samples were actually used for contested research involving factors related to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. diabetes; syphilis

b. syphilis; diabetes

c. diabetes; schizophrenia

d. schizophrenia; diabetes

e. syphilis; schizophrenia

Difficulty: 1

Page Ref: 16

Topic: Research with Humans

Skill: Factual
LO 1.6 Discuss ethical considerations in research with human participants.

Answer: c. diabetes; schizophrenia

1-90. An emerging interdisciplinary field, \_\_\_\_\_\_\_\_\_\_\_\_\_\_,is devoted to better understanding the implications of and developing best practices in ethics for neuroscience.

a. neuroscience ethics

b. bioethics

c. biology ethics

d. neuroethics

e. ethics for behavioral neuroscience

Difficulty: 1

Page Ref: 16

Topic: Research with Humans

Skill: Factual
LO 1.6 Discuss ethical considerations in research with human participants.

Answer: d. neuroethics

1-91. Neuroethics is concerned with

a. ensuring that individuals over 18 years of age have parental consent to participate in research.

b. privacy of brain imaging information.

c. informed consent statements that include detailed background information on the study being conducted.

d. ensuring that research participation does not last longer than 1 hour.

e. ensuring that all studies include some form of imaging.

Difficulty: 1

Page Ref: 16

Topic: Research with Humans

Skill: Factual
LO 1.6 Discuss ethical considerations in research with human participants.

Answer: b. privacy of brain imaging information.

1-92. \_\_\_\_\_\_\_\_ is the original name for the field that involves the study of the physiology of behavior.

a. Behavioral neuroscience

b. Biopsychology

c. Psychobiology

d. Physiological psychology

e. Biological pseudoscience

Difficulty: 1

Page Ref: 17

Topic: Careers in Neuroscience

Skill: Factual
LO 1.7 Identify careers in behavioral neuroscience.

Answer: d. Physiological psychology

1-93. \_\_\_\_\_\_\_\_ is the common name used today for the area that involves the study the physiology of behavior.

a. Behavioral neuroscience

b. Biopsychology

c. Psychobiology

d. Physiological psychology

e. Biological pseudoscience

Difficulty: 1

Page Ref: 17

Topic: Careers in Neuroscience

Skill: Factual
LO 1.7 Identify careers in behavioral neuroscience.

Answer: a. Behavioral neuroscience

1-94. \_\_\_\_\_\_\_\_ are physicians trained to diagnose and to treat central nervous system diseases.

a. Psychologists

b. Neurologists

c. Anatomists

d. Behavioral neuroscientists

e. Experimental neuropsychologists

Difficulty: 2

Page Ref: 17

Topic: Careers in Neuroscience

Skill: Factual
LO 1.7 Identify careers in behavioral neuroscience.

Answer: b. Neurologists

1-95. Being a neuroscientist typically requires a

a. PhD degree.

b. Master’s degree.

c. technical degree.

d. Bachelor’s degree.

e. associate degree.

Difficulty: 1

Page Ref: 17

Topic: Careers in Neuroscience

Skill: Factual
LO 1.7 Identify careers in behavioral neuroscience.

Answer: a. PhD degree.

1-96. Professionals in neuroscience can be from which background(s)?

a. biology

b. biology or psychology

c. chemistry or psychology

d. biology, psychology, or chemistry

e. biology, psychology, chemistry, or computer science

Difficulty: 1

Page Ref: 17

Topic: Careers in Neuroscience

Skill: Factual
LO 1.7 Identify careers in behavioral neuroscience.

Answer: e. biology, psychology, chemistry, or computer science

1-97. Individuals with a Ph.D., usually in psychology, who study the behavior of people whose brains have been damaged by natural causes are

a. neurologists.

b. neuroscientists.

c. cognitive neuroscientists.

d. behavioral researchers.

e. physiological psychologists.

Difficulty: 1

Page Ref: 17

Topic: Careers in Neuroscience

Skill: Factual
LO 1.7 Identify careers in behavioral neuroscience.

Answer: c. cognitive neuroscientists.

**Fill-in-the-Blank Questions**

1-98. The key deficit suffered by Jeremiah in the chapter vignette was impaired \_\_\_\_\_\_\_\_.

Difficulty: 1

Page Ref: 2

Topic: Opening vignette

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: movement

1-99. \_\_\_\_\_\_\_\_ is the belief that mind and body are separate entities.

Difficulty: 2

Page Ref: 5

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: Dualism

1-100. \_\_\_\_\_\_\_\_ represent explanations used by all scientists.

Difficulty: 1

Page Ref: 4

Topic: The Goals of Research

Skill: Factual
LO 1.1 Explain the importance of generalization and reduction in behavioral neuroscience research.

Answer: Generalizations

1-101. \_\_\_\_\_\_\_\_ was a physiologist who proposed the doctrine of specific nerve energies.

Difficulty: 1

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: Johannes Müller

1-102. \_\_\_\_\_\_\_\_\_\_\_\_\_ is known for his use of the experimental ablation technique to examine brain function.

Difficulty: 1

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: Pierre Flourens

1-103. The first textbook of physiological psychology was written by \_\_\_\_\_\_\_\_.

Difficulty: 2

Page Ref: 3

Topic: Foundations of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: Wilhelm Wundt

1-104. \_\_\_\_\_\_\_\_ involves the use of simple processes to explain a more complex phenomenon.

Difficulty: 2

Page Ref: 4

Topic: The Goals of Research

Skill: Conceptual
LO 1.1 Explain the importance of generalization and reduction in behavioral neuroscience research.

Answer: Reduction

1-105. \_\_\_\_\_\_\_\_\_\_ argued that the function of the brain was to cool the passions of the heart.

Difficulty: 2

Page Ref: 5

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: Aristotle

1-106. \_\_\_\_\_\_\_\_\_\_\_\_\_ performed an autopsy of the brain of a patient who had been unable to speak after suffering a stroke.

Difficulty: 1

Page Ref: 7

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: Paul Broca

1-107. Stimulation of the \_\_\_\_\_\_\_\_ cortex results in muscle contraction on the opposite side of the body.

Difficulty: 2

Page Ref: 7

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: primary motor

1-108. \_\_\_\_\_\_\_\_ involves the measurement of changes in behavior following damage to portions of the brain.

Difficulty: 2

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: Experimental ablation

1-109. \_\_\_\_\_\_\_\_ proposed the principles of evolution and natural selection.

Difficulty: 1

Page Ref: 9-10

Topic: Natural Selection and Evolution

Skill: Factual
LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: Charles Darwin

1-110. \_\_\_\_\_\_\_\_ are accidental changes in the chromosomal structure of sperm or eggs.

Difficulty: 2

Page Ref: 10

Topic: Functionalism and the Inheritance of Traits

Skill: Factual
LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: Mutations

1-111. Modern humans are known as \_\_\_\_\_\_\_\_.

Difficulty: 1

Page Ref: 11

Topic: Evolution of Large Brains

Skill: Factual
LO 1.4 Identify factors involved in the evolution of large brains in humans.

Answer: Homo sapiens

1-112. The surviving members of the \_\_\_\_\_\_\_\_ family include humans, gorillas, chimpanzees, and orangutans.

Difficulty: 3

Page Ref: 11

Topic: Evolution of Large Brains

Skill: Factual
LO 1.4 Identify factors involved in the evolution of large brains in humans.

Answer: hominid

1-113. The prolongation of brain maturation in the young human is known as \_\_\_\_\_\_\_\_.

Difficulty: 2

Page Ref: 13

Topic: Evolution of Large Brains

Skill: Factual

LO 1.4 Identify factors involved in the evolution of large brains in humans.

Answer: neoteny

1-114. \_\_\_\_\_\_\_\_ results in more animal suffering than does research.

Difficulty: 2

Page Ref: 14

Topic: Research with Animals

Skill: Factual
LO 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: Pet owning

1-115. The neurological disorder involving bleeding in the brain is known as a \_\_\_\_\_\_\_\_.

Difficulty: 2

Page Ref: 15

Topic: Research with Animals

Skill: Factual
LO 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: stroke

1-116. \_\_\_\_\_\_\_\_ is the original name for the field of study now known as behavioral neuroscience.

Difficulty: 2

Page Ref: 17

Topic: Careers in Neuroscience

Skill: Factual
LO 1.7 Identify careers in behavioral neuroscience.

Answer: Physiological psychology

1-117. \_\_\_\_\_\_\_\_\_\_ are physicians trained to diagnose and treat central nervous system diseases.

Difficulty: 3

Page Ref: 17

Topic: Careers in Neuroscience

Skill: Factual
LO 1.7 Identify careers in behavioral neuroscience.

Answer: Neurologists

**Essay Questions**

1-118. Contrast the philosophical positions of dualism, and monism.

Difficulty: 2

Page Ref: 5

Topic: Biological Roots of Behavioral Neuroscience

Skill: Factual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: Dualism is the philosophical view that mind and brain are separate but interacting. Monism is the view that mind is a property of the brain.

1-119. Discuss the early beliefs the Greeks had regarding the distinction between the brain and heart. Who were prominent individuals in this argument and what did they believe?

Difficulty: 3

Page Ref: 5

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: Many ancient cultures viewed the heart as the seat of thought and emotion, in part because of the prominent role of the heart for life and the observation that strong emotional states increase the heartbeat. However, Hippocrates rejected this view, believing that the brain is the seat of thought. Aristotle believed that the brain functioned to cool the passions of the heart.

1-120. Discuss the difference between generalization and reductionism. Provide an example of each.

Difficulty: 3

Page Ref: 4

Topic: The Goals of Research

Skill: Applied
LO 1.1 Explain the importance of generalization and reduction in behavioral neuroscience research.

Answer: Generalization is a type of scientific explanation involving a general conclusion based on observation of many similar phenomena. Reductionism is a type of scientific explanation involving breaking a complex situation into simpler processes. Examples will vary.

1-121. Describe the technique of ablation and identify the researcher who was responsible for its development.

Difficulty: 2

Page Ref: 6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: Ablation involves the physical manipulation of the brain and allows for an assessment of a change in function after the manipulation. Experimental ablation was developed by Pierre Flourens.

1-122. Identify two early key contributors to the development of physiology and discuss the implications that their work had for the science of neurophysiology.

Difficulty: 2

Page Ref: 5-7

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: Two of the following should be discussed. Galvani used electrical current to study muscle contraction in the frog. Müller argued for the use of experimental methods to study physiology. Helmholtz developed methods and techniques to study the physiology of vision and audition. Flourens developed the technique of experimental ablation, which can provide insight into the functions of brain regions.

1-123. Describe the implications of Galvani’s research for Descartes’s view of how nerves control muscle activity.

Difficulty: 2

Page Ref: 5-6

Topic: Biological Roots of Behavioral Neuroscience

Skill: Conceptual
LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

Answer: Galvani was able to contract the frog muscle via electrical stimulation when the muscle was detached from the body—thus it was not pressure exerted from the brain that caused muscle contraction.

1-124. Give examples of structural and behavioral characteristics that might confer selective advantages to an organism.

Difficulty: 2

Page Ref: 10-11

Topic: Functionalism and the Inheritance of Traits

Skill: Applied
LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: Natural selection suggests that certain characteristics of an organism offer an advantage that allows the organism to reproduce and to pass on that characteristic to its offspring. The coloring of an organism may allow it to blend into the background, thus escaping detection by predators. The capacity to remain still (i.e., freeze) may similarly allow an organism to avoid predation.

1-125. Discuss a role that mutations play in the process of natural selection.

Difficulty: 3

Page Ref: 10

Topic: Functionalism and the Inheritance of Traits

Skill: Conceptual
LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: Mutations increase the range of features or behaviors seen in the organism. Most of the time, this is harmful to the organism or to its reproductive fitness. Very rarely, the mutation results in a feature or behavior that increases the fitness of an organism; in these cases, the mutation is likely to become part of the preferred genetic makeup of the species.

1-126. Explain the typical significance of a genetic mutation for an organism.

Difficulty: 3

Page Ref: 10-11

Topic: Functionalism and the Inheritance of Traits

Skill: Factual
LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: A mutation is an accidental change in the chromosomes of sperms or eggs that join together. Most mutations are deleterious, and only a few confer a selective advantage to the offspring.

1-127. Discuss the use of animals in research and the ethical issues associated with such use. Make an argument a) FOR and b) AGAINST their use.

Difficulty: 3

Page Ref: 14-15

Topic: Ethical Issues in Research with Animals

Skill: Conceptual
LO 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: A relatively small percentage of animals are used in neuroscience research, and their use must be justified by the gain in knowledge produced by the research. An argument FOR might focus on the fact that such research may produce benefits that are real and that cannot be realized in any other way. An argument AGAINST might suggest that humans and animals are so different that results from animals are not useful for understanding humans.

1-128. Discuss the components of informed consent.

Difficulty: 2

Page Ref: 17

Topic: Ethical Issues in Research with Animals

Skill: Factual
LO 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: Research with humans must include informed consent, which describes the process in which researchers must inform any potential participant about the nature of the study, how the data will be collected and stored, and what the anticipated benefits and risks will be.

**REVEL QUIZ QUESTIONS**

**EOM Quiz Question 1.1.1**

Generalization is to \_\_\_\_\_\_\_\_\_\_, whereas reductionism is to \_\_\_\_\_\_\_\_\_\_.

a. identify general rules that govern behavior across multiple organisms; identify simple causes of complex behaviors

b. identify simple causes of complex behaviors; identify general rules that govern behavior across multiple organisms

c. organize data in terms of general rules; identify the smallest piece of a neuron

d. identify the smallest piece of a neuron; organize data in terms of general rules

Answer: A

Difficulty: 2

Topic: The Goals of Research

Skill: Understand

LO 1.1 Explain the importance of generalization and reduction in behavioral neuroscience research.

**EOM Quiz Question 1.1.2**

Research in neuroscience should focus on:

a. reductionism and generalization.

b. reductionism.

c. generalization.

d. functionalism.

Answer: A

Difficulty: 2

Topic: The Goals of Research

Skill: Applied

LO 1.1 Explain the importance of generalization and reduction in behavioral neuroscience research.

**EOM Quiz Question 1.1.3**

The idea that the mind and body are separate and made up of different matter is referred to as:

a. dualism.

b. monism.

c. separatism.

d. unity.

Answer: A

Difficulty: 1

Topic: Biological Roots of Behavioral Neuroscience

Skill: Remember

LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

**EOM Quiz Question 1.1.4**

Experimental ablations were first performed by:

a. Flourens.

b. Broca.

c. Aristotle.

d. Galen.

Answer: A

Difficulty: 1

Topic: Biological Roots of Behavioral Neuroscience

Skill: Remember

LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

**EOM Quiz Question 1.1.5**

\_\_\_\_\_\_\_\_\_\_\_\_\_ believed that the body was controlled by the heart.

a. Aristotle

b. Hippocrates

c. Socrates

d. Galen

Answer: A

Difficulty: 1

Topic: Biological Roots of Behavioral Neuroscience

Skill: Remember

LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

**EOM Quiz Question 1.2.1**

Functionalism is demonstrated by:

a. brain differences between different songbird species.

b. larger spatial reasoning areas in the brain in a species that primarily hunts.

c. more activity in the amygdala in an aggressive species.

d. all of these answers would demonstrate functionalism.

Answer: D

Difficulty: 2

Topic: Functionalism and the Inheritance of Traits

Skill: Applied

LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

**EOM Quiz Question 1.2.2**

\_\_\_\_\_\_\_\_\_\_\_\_\_ refers to a situation when a particular characteristic allows an organism to be more reproductively successful, causing the characteristic to become more prevalent.

a. Natural selection

b. Darwinism

c. Artificial selection

d. Mutation

Answer: A

Difficulty: 1

Topic: Functionalism and the Inheritance of Traits

Skill: Remember

LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

**EOM Quiz Question 1.2.3**

Mutations:

a. are accidental changes in chromosomes of sperm or eggs that result in new characteristics.

b. are the ultimate cause of a species dying out.

c. are never found in nature.

d. always involve negative changes.

Answer: A

Difficulty: 1

Topic: Functionalism and the Inheritance of Traits

Skill: Remember

LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

**EOM Quiz Question 1.2.4**

Neoteny refers to:

a. slow brain maturation after birth, making the young of the species in question dependent on others to some extent.

b. small brains.

c. brains that are large compared to body size.

d. animals that are able to walk and fend for themselves after birth.

Answer: A

Difficulty: 1

Topic: Evolution of Large Brains

Skill: Remember

LO 1.4 Identify factors involved in the evolution of large brains in humans.

**EOM Quiz Question 1.2.5**

In humans, the brain reaches adult size by:

a. adolescence.

b. infancy.

c. early childhood.

d. old age.

Answer: A

Difficulty: 1

Topic: Evolution of Large Brains

Skill: Remember

LO 1.4 Identify factors involved in the evolution of large brains in humans.

**EOM Quiz Question 1.3.1**

A benefit of using animals for research purposes includes:

a. the ability of the researcher to mistreat the research animals.

b. the ability to test hypotheses in a non-controlled environment.

c. the ability to control the history of the animals.

d. the ability to experimentally produce ailments in humans.

Answer: C

Difficulty: 1

Topic: Research with Animals

Skill: Remember

LO 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

**EOM Quiz Question 1.3.2**

Research with animals is:

a. highly regulated.

b. largely unregulated because animals are not viewed as having rights.

c. only partially regulated with chimpanzees having greatest protections.

d. only partially regulated with marine life having greatest protections.

Answer: A

Difficulty: 2

Topic: Research with Animals

Skill: Understand

LO 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

**EOM Quiz Question 1.3.3**

Which of the following would have to undergo IACUC review?

a. Birds are tested for West Nile virus.

b. Rats’ mating rituals are observed.

c. Monkeys are unobtrusively observed in the wild.

d. Duck feces from a local pond are collected for analysis of bacteria.

Answer: A

Difficulty: 3

Topic: Research with Animals

Skill: Analyze

LO 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

**EOM Quiz Question 1.3.4**

You should not sign an informed consent if it is missing:

a. the researcher’s hypothesis.

b. background literature about the study.

c. risks and benefits.

d. the researcher’s opinions about the literature.

Answer: C

Difficulty: 2

Topic: Research with Humans

Skill: Applied

LO 1.6 Discuss ethical considerations in research with human participants.

**EOM Quiz Question 1.3.5**

Which of the following would have to undergo IRB review?

a. a study comparing drug effects in mice

b. a study that includes reviewing research literature

c. a study that will provide depression medication to a group of patients

d. a study teaching sign language to a group of gorillas

Answer: C

Difficulty: 2

Topic: Research with Humans

Skill: Applied

LO 1.6 Discuss ethical considerations in research with human participants.

**EOM Quiz Question 1.4.1**

Being a neuroscientist typically requires a:

a. PhD degree.

b. Master degree.

c. technical degree.

d. Bachelor degree.

Answer: A

Difficulty: 1

Topic: Careers in Neuroscience

Skill: Remember

LO 1.7 Identify careers in behavioral neuroscience.

**EOM Quiz Question 1.4.2**

Professionals in neuroscience can be from which background(s)?

a. biology

b. biology or psychology

c. biology, psychology, or chemistry

d. biology, psychology, chemistry, or computer science

Answer: D

Difficulty: 1

Topic: Careers in Neuroscience

Skill: Remember

LO 1.7 Identify careers in behavioral neuroscience.

**EOM Quiz Question 1.4.3**

Graduate students in neuroscience will:

a. conduct independent research.

b. write literature reviews without conducting independent research.

c. will serve as a research assistant, never conducting independent research.

d. work with patients to prescribe appropriate medications.

Answer: A

Difficulty: 2

Topic: Careers in Neuroscience

Skill: Applied

LO 1.7 Identify careers in behavioral neuroscience.

**EOM Quiz Question 1.4.4**

Which would be the best study tool for this material?

a. reading the chapter

b. highlighting important information as you read the chapter

c. underlining important information as you read the chapter

d. taking notes that organize the important information as you read the chapter

Answer: D

Difficulty: 2

Topic: Strategies for Learning

Skill: Understand

LO 1.8 Describe effective learning strategies for studying behavioral neuroscience.

**EOM Quiz Question 1.4.5**

When studying material it would be best to study:

a. in a single session one hour prior to the exam.

b. in a single session the night before the exam.

c. in several sessions the weeks preceding the exam.

d. right before going to sleep.

Answer: C

Difficulty: 2

Topic: Strategies for Learning

Skill: Understand

LO 1.8 Describe effective learning strategies for studying behavioral neuroscience.

**EOC Quiz Question 1.1**

A neuroscientist removes the eyes of a frog to determine if the frog will still respond to light and dark in the environment. This experiment would be an example of:

a. generalization.

b. reductionism.

c. separatism.

d. validity.

Answer: B

Difficulty: 2

Topic: The Goals of Research

Skill: Applied

LO 1.1 Explain the importance of generalization and reduction in behavioral neuroscience research.

**EOC Quiz Question 1.2**

A researcher explains aspects of post-traumatic stress disorder as an example of general laws that apply to all people. This situation fits:

a. reductionism.

b. generalization.

c. reflexes.

d. functionalism.

Answer: B

Difficulty: 1

Topic: The Goals of Research

Skill: Remember

LO 1.1 Explain the importance of generalization and reduction in behavioral neuroscience research.

**EOC Quiz Question 1.3**

Neuroscientists focus on \_\_\_\_\_\_\_\_\_\_\_\_ in their research.

a. generalization

b. reductionism

c. reductionism and generalization

d. separatism

Answer: C

Difficulty: 2

Topic: The Goals of Research

Skill: Applied

LO 1.1 Explain the importance of generalization and reduction in behavioral neuroscience research.

**EOC Quiz Question 1.4**

Descartes, who first described and studied reflexes, was a:

a. monist.

b. dualist.

c. separatist.

d. revolutionary.

Answer: B

Difficulty: 3

Topic: Biological Roots of Behavioral Neuroscience

Skill: Applied

LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

**EOC Quiz Question 1.5**

\_\_\_\_\_\_\_\_\_ conducted experimental ablation in animals whereas \_\_\_\_\_\_\_\_ applied the concept of experimental ablation to humans.

a. Flourens; Broca

b. Broca; Flourens

c. Müller; Flourens

d. Müller; Broca

Answer: A

Difficulty: 1

Topic: Biological Roots of Behavioral Neuroscience

Skill: Remember

LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

**EOC Quiz Question 1.6**

\_\_\_\_\_\_\_\_\_\_\_ developed the doctrine of specific nerve energies.

a. Pierre Flourens

b. Johannes Müller

c. Paul Broca

d. Luigi Galvani

Answer: B

Difficulty: 1

Topic: Biological Roots of Behavioral Neuroscience

Skill: Remember

LO 1.2 Summarize contributions to the modern field of behavioral neuroscience made by individuals involved in philosophy, physiology, or other disciplines.

**EOC Quiz Question 1.7**

Over successive generations, moths develop spots that resemble eyes on their wings that scare off predators. This characteristic would be a:

a. selective advantage.

b. genetic susceptibility.

c. general advantage.

d. selective disadvantage.

Answer: A

Difficulty: 1

Topic: Functionalism and the Inheritance of Traits

Skill: Understand

LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

**EOC Quiz Question 1.8**

Praying mantises are typically green or brown in color to allow them to blend into their surroundings. If a group of praying mantises were born a different color, they would be at a disadvantage. This change, although not advantageous for the mantis, could happen naturally through:

a. mutation.

b. gene splicing.

c. genetic alteration.

d. bad luck.

Answer: A

Difficulty: 1

Topic: Functionalism and the Inheritance of Traits

Skill: Understand

LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

**EOC Quiz Question 1.9**

The development of perception that allowed for color differentiation was a functional development; not all animals have this ability. What made it functional?

a. It allows for night vision.

b. It allows for differentiation of ripe fruits.

c. It enabled bipedalism.

d. It allows for contrast detection.

Answer: B

Difficulty: 2

Topic: Evolution of Large Brains

Skill: Applied

LO 1.4 Identify factors involved in the evolution of large brains in humans.

**EOC Quiz Question 1.10**

Recent research has shown that intelligence is dictated by:

a. the number of neurons not dedicated to set functions, like walking.

b. the number of neurons dedicated to movement and other set functions.

c. ratio of larger brain to body size.

d. ratio of smaller brain to body size.

Answer: A

Difficulty: 2

Topic: Evolution of Large Brains

Skill: Applied

LO 1.4 Identify factors involved in the evolution of large brains in humans.

**EOC Quiz Question 1.11**

Mutations are:

a. either favorable or unfavorable immediately, resulting in automatic advantage or disadvantage.

b. always favorable.

c. always unfavorable.

d. sometimes favorable or unfavorable immediately, ultimately not affecting the species as a whole.

Answer: D

Difficulty: 3

Topic: Functionalism and the Inheritance of Traits

Skill: Analyze

LO 1.3 Describe the role of natural selection in the evolution of behavioral traits.

**EOC Quiz Question 1.12**

Research with monkeys in the 1990s indicated that damaged nerves could be regenerated over time. This finding supports the concept of brain:

a. flexibility.

b. rigidity.

c. plasticity.

d. stasis.

Answer: C

Difficulty: 2

Topic: Research with Animals

Skill: Applied

LO 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

**EOC Quiz Question 1.13**

A friend of yours was asked to be a research participant for a study investigating the effect of a pain reliever on muscle tears. In order to test the effectiveness of the drug, your friend will need to engage in physical activity that results in small tears in the muscles of the forearm. You caution that all studies involving human subjects must include:

a. freedom from risks.

b. monetary benefits for participants.

c. informed consent.

d. parental consent even if over the age of 18 years.

Answer: C

Difficulty: 2

Topic: Research with Humans

Skill: Applied

LO 1.6 Discuss ethical considerations in research with human participants.

**EOC Quiz Question 1.14**

What do neuroscientists study?

a. eating behaviors of women with anorexia

b. daily activity and sleep patterns of hamsters

c. aggressive behaviors in men with anti-social personality disorder

d. all of these answers could be topics of study in neuroscience

Answer: D

Difficulty: 2

Topic: Careers in Neuroscience

Skill: Applied

LO 1.7 Identify careers in behavioral neuroscience.

**EOC Quiz Question 1.15**

Which of the following methods would best help you learn the material in this book?

a. teaching another person the material

b. taking organized notes as you read the chapters

c. using mnemonics

d. all of these answers would be beneficial study methods

Answer: D

Difficulty: 2

Topic: Strategies for Learning

Skill: Understand

LO 1.8 Describe effective learning strategies for studying behavioral neuroscience.