**Chapter 1: Introduction**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Topic** | **Question Type** | **Remember the Facts** | **Understand the Concepts** | **Apply What You Know** |
| **Introduction and Foundations of Behavioral Neuroscience** | **Multiple Choice** | **1-3,5,6,13,17,20,21,23,24,28,29,32,34,40,42,44-52** | **4,7,8,9,15,19,22,25-27,30,31,33,35-39,41,43**  | **10-12,14,16,18** |
| **Fill-In** | **98-103,105-107** | **104,108** |  |
| **Essay** | **118** | **119,12123** | **120** |
| **Natural Selection and Evolution** | **Multiple Choice** | **63,67-70,72-74** | **53-57,60-62,64-66,71** | **58,59** |
| **Fill-In** | **109-113** |  |  |
| **Essay** | **126** | **125** | **124** |
| **Ethical Issues in Research with Humans and Other Animals** | **Multiple Choice** | **75-82,84-86,88-91** | **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. The key deficit suffered by Jeremiah (the boy described in the chapter opening 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 Level: Easy

Topic: Introduction

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: D

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

2. To improve his deficit after experiencing a stroke, Jeremiah (the boy described in the chapter opening vignette) had his non-affected limb constrained, forcing him to use the affected limb. This approach to therapy is called

a. constraint-applied therapy.

b. constraint-induced movement therapy.

c. restraint therapy.

d. restraint-applied therapy.

e. forced movement therapy.

Difficulty Level: Easy

Topic: Introduction

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: B

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

3. Constraint-induced movement therapy for stroke victims involves

a. coordinating limb movements to perform complex tasks.

b. constraining a patient’s stroke-affected limb to promote plasticity in the brain.

c. constraining a patient’s non-affected limbs to promote plasticity in the brain.

d. engaging in whole body movements that increase in difficulty over time.

e. applying repeated physical therapy to both affected and non-affected limbs.

Difficulty Level: Easy

Topic: Introduction

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: B

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

4. Most neuroscientists have long assumed that neurons could not be created 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 Level: Moderate

Topic: Introduction

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: A

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

5. The author of the first psychology textbook was \_\_\_\_\_\_\_\_ and the text was entitled \_\_\_\_\_\_\_\_.

a. Florian Schneider; *A Primer of Psychology*

b. Sigmund Freud; *Psychoanalytic* *Dream Interpretation*

c. Otto Stumpf; *Theory of Physiologik Actions*

d. Luigi Galvani; *Psychologic Function of Biological Mechanisms*

e. Wilhelm Wundt; *Principles of Physiological Psychology*

Difficulty Level: Moderate

Topic: Foundations of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: E

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

6. The primary function of the brain is to

a. integrate sensations.

b. form memories.

c. control movement.

d. engage in logical reasoning.

e. regulate internal biological processes.

Difficulty Level: Moderate

Topic: Foundations of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: C

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

7. \_\_\_\_\_\_\_\_ refers to a form of explanation based on general laws.

a. Generalization

b. Falsification

c. Verificationism

d. Syllogism

e. Rationalization

Difficulty Level: Easy

Topic: The Goals of Research

Skill Level: Understand the Concepts
Learning Objective: 1.1 Compare the roles of generalization and reduction in behavioral neuroscience research.

Answer: A

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

8. Generalization is to \_\_\_\_\_\_\_\_\_\_, whereas reduction is to \_\_\_\_\_\_\_\_\_\_.

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

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

c. organizing data in terms of general rules; identifying the smallest components of a neuron

d. identifying the smallest components of a neuron; organizing data in terms of general rules

e. ignoring data that don’t fit with previous explanations; identifying general rules that govern behavior across specific organisms

Difficulty Level: Moderate

Topic: The Goals of Research

Skill Level: Understand the Concepts
Learning Objective: 1.1 Compare the roles of generalization and reduction in behavioral neuroscience research.

Answer: A

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

9. Which statement best describes the explanatory goals of researchers in behavioral neuroscience?

a. Both generalization and reduction should be embraced when reaching conclusions.

b. Understanding the design of a biological structure is more important than understanding the function of that structure.

c. Reduction of psychological processes to underlying biological mechanisms is the most important concern.

d. Explanations should be offered at a philosophical, biological, and psychological level.

e. Behavior should always be explained at the highest levels of generality.

Difficulty Level: Difficult

Topic: The Goals of Research

Skill Level: Understand the Concepts
Learning Objective: 1.1 Compare the roles of generalization and reduction in behavioral neuroscience research.

Answer: A

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

10. Jerry dons a suede jacket before going out with his friends. “Ah, you must be cold,” says his roommate. “Nope,” Jerry replied, “I just want to look hip in front of my friends.” Which explanatory principle does this scenario best represent?

a. General laws govern most human actions.

b. The same observable behavior can occur for different underlying reasons.

c. Explanation generally precedes observation.

d. Reducing behavior to physiological mechanisms is a flawed strategy.

e. The meaning of a behavior reveals the evolutionary basis of that behavior.

Difficulty Level: Moderate

Topic: The Goals of Research

Skill Level: Apply What You Know

Learning Objective: 1.1 Compare the roles of generalization and reduction in behavioral neuroscience research.

Answer: B

APA Learning Objective: 1.3 Describe applications of psychology.

11. Dr. Sardonicus proposes that mating behavior across species follows the same pattern, guided by evolutionary forces. Her explanation for this behavior is consistent with the \_\_\_\_\_\_\_\_\_\_ approach.

a. generalization

b. reduction

c. separatist

d. functionalist

e. validity.

Difficulty Level: Moderate
Topic: The Goals of Research
Skill Level: Apply What You Know
Learning Objective: 1.1 Compare the roles of generalization and reduction in behavioral neuroscience research.
Answer: A
APA Learning Objective: 1.3 Describe applications of psychology.

12. Ranjan has such an overly strong fear of dogs that she refuses to leave her house for fear of encountering a dog. A learning theorist attributes her fear to past classical conditioning, in which the sight and sound of a dog became associated with some aversive experience. This type of explanation would involve the process of

a. rationalization.

b. pseudoscience.

c. reduction.

d. generalization.

e. dualism.

Difficulty Level: Moderate
Topic: The Goals of Research
Skill Level: Apply What You Know
Learning Objective: 1.1 Compare the roles of generalization and reduction in behavioral neuroscience research.
Answer: C

APA Learning Objective: 1.3 Describe applications of psychology.

13. A scientific explanation of a complex phenomenon that is stated in terms of simpler processes involves the application of

a. rationalization.

b. falsification.

c. generalization.

d. deduction.

e. reduction.

Difficulty Level: Easy

Topic: The Goals of Research
Skill Level: Remember the Facts
Learning Objective: 1.1 Compare the roles of generalization and reduction in behavioral neuroscience research.

Answer: E

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

14. Otto notices that his roommate has difficulty sleeping after consuming caffeinated drinks. Otto knows that caffeine can stimulate neurons that produce arousal, and that such arousal disturbs sleep. Otto tells his roommate that insomnia reflects the action of caffeine on brain function, thereby offering an explanation based on

a. reduction.

b. superordinate causality.

c. generalization.

d. induction.

e. falsification.

Difficulty Level: Moderate

Topic: The Goals of Research
Skill Level: Apply What You Know
Learning Objective: 1.1 Compare the roles of generalization and reduction in behavioral neuroscience research.

Answer: A

APA Learning Objective: 1.3 Describe applications of psychology.

15. Which statement is correct?

a. Reduction invokes complex processes to explain simple ones.

b. The goal of reduction is to predict the future occurrence of a phenomenon.

c. Generalization and reduction are important tools in the scientific process.

d. Scientists only use reductionistic explanations.

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

Difficulty Level: Difficult

Topic: The Goals of Research

Skill Level: Understand the Concepts
Learning Objective: 1.1 Compare the roles of generalization and reduction in behavioral neuroscience research.

Answer: C

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

16. A scientist who holds a monistic philosophy would endorse 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 Level: Difficult

Topic: Roots of Behavioral Neuroscience

Skill Level: Apply What You Know
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: D

APA Learning Objective: 1.3 Describe applications of psychology.

17. \_\_\_\_\_\_\_\_ refers to the belief that the mind and body are separate entities.

a. Contralateral neglect

b. Monism

c. Blindsight

d. Dualism

e. Animism

Difficulty Level: Easy

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: D

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

18. Which statement 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, whereas the body is made of matter.

d. The mind can exist apart from the body.

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

Difficulty Level: Difficult

Topic: Roots of Behavioral Neuroscience

Skill Level: Apply What You Know
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: E

APA Learning Objective: 1.3 Describe applications of psychology.

19. 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 Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: A

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

20. Ancient Egyptian, Chinese, and Indian cultures considered the \_\_\_\_\_\_\_\_ to be the seat of thought and emotion.

a. gut

b. heart

c. brain

d. pineal gland

e. eyes

Difficulty Level: Easy

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: B

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

21. The ancient Greek scholar \_\_\_\_\_\_\_\_ attributed thought and emotion to the brain, whereas \_\_\_\_\_\_\_\_ considered the function of the brain as important for cooling the excitement of the heart.

a. Aristotle; Plato

b. Anaximander; Aristotle

c. Hippocrates; Aristotle

d. Parmenides; Galen

e. Heraclitus; Plato

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: C

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

22. Which comment 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 Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: B

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

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 devices controlled by environmental stimuli.

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

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: D

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

24. The French philosopher René Descartes, who first described and studied reflexes, was a

a. monist.

b. reductionist.

c. pluralist.

d. dualist.

e. functionalist.

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: D

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

25. René Descartes argued that the mind was the same thing as the

a. brain.

b. body.

c. environment.

d. soul.

e. will.

Difficulty Level: Difficult

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: D

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

26. Descartes’s view of dualism was unique because 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 Level: Difficult

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: E

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

27. René Descartes proposed that

a. the heart is the organ that controls thoughts.

b. the muscles are activated by electrical nerve signals.

c. human reflexes are under conscious mental control.

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

e. the mind is produced by the brain.

Difficulty Level: Difficult

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: D

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

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 Level: Difficult

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: E

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

29. Luigi Galvani demonstrated that \_\_\_\_\_\_\_\_\_\_, thereby providing a challenge to Descartes’s view of the mind and body.

a. the mind controls the body through the action of the hippocampus

b. electrical stimulation of a dissected nerve was sufficient to cause muscle contraction

c. placing nerve fibers in a chemical solution caused the fibers to regenerate themselves

d. applying mechanical pressure to a rat’s leg caused the animal’s mouth to open

e. monism is the basis for modern conceptions of dualism

Difficulty Level: Difficult

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: B

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

30. Luigi Galvani’s experiment involving a frog leg demonstrated that

a. the body cannot function without the control of the mind.

b. muscles are activated by electrical nerve signals.

c. reflexes in the lower body take longer to appear than reflexes in the upper body.

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

e. the pineal gland absorbs excess fluid produced by the muscles.

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: B

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

31. Which statement 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 produces contraction of a muscle.

e. The pineal body controls the body’s muscles.

Difficulty Level: Difficult

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: E

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

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

a. Johannes Müller

b. Paul Broca

c. Pierre Flourens

d. Hermann von Helmholtz

e. Wilhelm Wundt

Difficulty Level: Easy

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: A

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

33. Which statement is consistent with the doctrine of specific nerve energies?

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

b. Different nerves carry different electrical messages.

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

d. Nerves can be activated by psychological stimulation.

e. Information from all the sense organs travels to the same location in the brain.

Difficulty Level: Difficult

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: A

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.34. Which scientist was among the first to advocate supplementing observational techniques with experimental procedures in the study of physiology?

a. Paul Broca

b. Gustav Fritsch

c. Luigi Galvani

d. Johannes Müller

e. Pierre Flourens

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: D

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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 Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: C

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

36. Pierre Flourens is best known

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

b. as the father of modern philosophy.

c. for proposing an early formulation of the theory of evolution.

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

e. as a dualist philosopher.

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: A

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

37. The technique of experimental ablation involves

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

b. measurements of conduction speed 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 intentional damage to a portion of the brain.

Difficulty Level: Difficult

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: E

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

38. The doctrine of specific nerve energies was proposed by

a. Eduard Hitzig.

b. Hermann von Helmholtz.

c. Pierre Flourens.

d. Johannes Müller.

e. Jan Purkinje.

Difficulty Level: Difficult

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: D

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

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 Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: A

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

40. \_\_\_\_\_\_\_\_\_ conducted experimental ablation in animals, whereas \_\_\_\_\_\_\_\_ applied the general concept of functional disruption to humans.

a. Pierre Flourens; Paul Broca

b. Paul Broca; Pierre Flourens

c. Johannes Müller; Pierre Flourens

d. Johannes Müller; Paul Broca

e. Paul Broca; Johannes Müller

Difficulty Level: Difficult

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: A

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

41. In 1870, Gustav Fritsch and Eduard 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 Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: D

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

42. Hermann von Helmholtz is known for

a. his contributions to the study of philosophy.

b. compiling an accurate textbook of anatomy.

c. advancing the technique of experimental ablation.

d. identifying the chemical composition of nerve fluids.

e. his measurements of nerve cell conduction speed.

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: E

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

43. In his studies of nerve conduction speed, Hermann von Helmholtz noted that

a. electrical signal speeds differ from nerve to nerve.

b. nerve conduction occurs at the speed of light.

c. nerves conduct signals faster than do electrical wires.

d. the speed of nerve conduction is slower than conduction in electrical wires.

e. different sensory systems have different conduction speeds.

Difficulty Level: Difficult

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: D

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

44. Which is the correct match between theorist and idea?

a. Paul Broca; doctrine of specific nerve energies

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

c. Gustav Fritsch and Eduard Hitzig; language is localized in the left hemisphere

d. Luigi Galvani; doctrine of specific nerve energies

e. Hermann von Helmholtz; use of ablation to study brain-behavior relations

Difficulty Level: Difficult

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: B

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

45. Hermann von Helmholtz estimated that nerve conduction speed is about

a. 2.7 meters/second.

b. 27 meters/second.

c. 270 meters/second.

d. 2700 meters/second.

e. 27,000 meters/second.

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: B

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

46. \_\_\_\_\_\_\_\_\_\_\_ 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. Santiago Ramón y Cajal

e. Pierre Flourens

Difficulty Level: Easy

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: A

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

47. Purkinje cells can be found in the \_\_\_\_\_\_\_\_\_\_ of the human brain.

a. medulla

b. cerebral cortex

c. corpus callosum

d. cerebellum

e. amygdala

Difficulty Level: Easy

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: D

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

48. Neurons that terminate on cardiac cells that are 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 Level: Easy

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: C

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

49. \_\_\_\_\_\_\_\_\_\_\_\_ used the Golgi staining technique to examine the structure of individual neurons in the brain.

a. Camillo Golgi

b. Jan Purkinje

c. Hermann von Helmholtz

d. Luigi Galvani

e. Santiago Ramón y Cajal

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: E

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

a. Paul Broca

b. Santiago Ramón y Cajal

c. Edvard Moser

d. Camillo Golgi

e. Hermann von Helmholtz

Difficulty Level: Easy

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: B

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

a. developing amplifiers to detect weak electrical signals.

b. developing neurochemical techniques to analyze changes within cells.

c. identifying mirror neurons.

d. discovering a spatial positioning system in the brain.

e. treating depression with deep brain stimulation.

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: D

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

52. CRISPR-Cas9 is a promising new technique that allows researchers to

a. visualize chemical changes in a cell as they are taking place.

b. change the reflective angle of mirror neurons.

c. remove arrays of neurons in the brain.

d. precisely edit genetic material.

e. selectively activate single neurons using light rays.

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: D

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

53. \_\_\_\_\_\_\_\_\_\_\_\_\_ refers to a situation in which a particular characteristic allows an organism to be more reproductively successful, causing the characteristic to become more prevalent in that organism’s species.

a. Darwinism

b. Natural selection

c. Artificial selection

d. Mutation

e. Selective advantage

Difficulty Level: Moderate

Topic: Functionalism and the Inheritance of Traits

Skill Level: Understand the Concepts
Learning Objective: 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: B

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

54. The principle that the natural characteristics of an organism exert useful effects is known as

a. reduction.

b. positivism.

c. functionalism.

d. consolidation.

e. adaptation.

Difficulty Level: Moderate

Topic: Functionalism and the Inheritance of Traits

Skill Level: Understand the Concepts
Learning Objective: 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: C

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

55. Which set of circumstances best illustrates functionalism?

a. There are no structural brain differences across different songbird species.

b. Spatial reasoning areas in the brains of animals that primarily hunt are the same as those in animals that do not hunt.

c. Brain structures in an aggressive species show more activation than similar structures in a non-aggressive species.

d. Limb length across species shows the same ratio to overall body proportions.

e. The degree of development of the cerebral cortex of dolphins and snakes is the same.

Difficulty Level: Difficult

Topic: Functionalism and the Inheritance of Traits

Skill Level: Understand the Concepts
Learning Objective: 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: C

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

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 forces.

e. are present at birth and do not require environmental stimulation for their emergence.

Difficulty Level: Difficult

Topic: Functionalism and the Inheritance of Traits

Skill Level: Understand the Concepts
Learning Objective: 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: B

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

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 Level: Difficult

Topic: Functionalism and the Inheritance of Traits

Skill Level: Understand the Concepts
Learning Objective: 1.3 Describe the role of natural selection in the evolution of behavioral traits.
Answer: C

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

58. Over successive generations, moths develop spots that resemble eyes on their wings; the spots scare off predators. This characteristic is a

a. selective advantage.

b. genetic susceptibility.

c. general advantage.

d. selective disadvantage.

e. genetic abnormality.

Difficulty Level: Moderate

Topic: Functionalism and the Inheritance of Traits

Skill Level: Apply What You Know
Learning Objective: 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: A

APA Learning Objective: 1.3 Describe applications of psychology.

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 in their environment. This change, although not advantageous for the mantis, could happen naturally through the process of

a. mutation.

b. gene splicing.

c. genetic alteration.

d. natural selection.

e. genetic predisposition.

Difficulty Level: Moderate

Topic: Functionalism and the Inheritance of Traits

Skill Level: Apply What You Know
Learning Objective: 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: A

APA Learning Objective: 1.3 Describe applications of psychology.

60. Mutations are caused by

a. adverse neural development due to drug ingestion in adulthood.

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

c. poor adaptation to the environment.

d. improved reproductive success within an entire species.

e. beneficial changes in the characteristics of a single organism.

Difficulty Level: Difficult

Topic: Functionalism and the Inheritance of Traits

Skill Level: Understand the Concepts
Learning Objective: 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: B

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

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 offspring.

Difficulty Level: Difficult

Topic: Functionalism and the Inheritance of Traits

Skill Level: Understand the Concepts
Learning Objective: 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: D

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

62. The key benefit of genetic variety for a species is that

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

b. mutations are kept to a minimum.

c. it promotes neural development species-wide.

d. it reduces reproductive success.

e. harmful mutations are increased in the species.

Difficulty Level: Difficult

Topic: Functionalism and the Inheritance of Traits

Skill Level: Understand the Concepts
Learning Objective: 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: A

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

63. Traits that can be altered by genetic mutations

a. are beneficial.

b. are unobservable.

c. are physical.

d. exert direct actions on behavior.

e. mostly involve psychological functions.

Difficulty Level: Moderate

Topic: Functionalism and the Inheritance of Traits

Skill Level: Remember the Facts
Learning Objective: 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: C

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

64. The process of evolution

a. does not involve genetic mutations.

b. can occur in the absence of natural selection.

c. is based on the doctrine of specific nerve energies.

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

e. was demonstrated through experimental ablation experiments.

Difficulty Level: Difficult

Topic: Evolution of Human Brains

Skill Level: Understand the Concepts

Learning Objective: 1.4 Identify factors involved in the evolution of human brains.

Answer: D

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

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

a. The capacity to breed at night

b. The ability to move through the forest at night

c. The ability to discriminate ripe from unripe fruit

d. The capacity to communicate using symbols

e. Rapid nerve conduction

Difficulty Level: Difficult

Topic: Evolution of Human Brains

Skill Level: Understand the Concepts

Learning Objective: 1.4 Identify factors involved in the evolution of human brains.

Answer: C

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

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

a. It allowed the ability to breed at night.

b. It enhanced night vision.

c. It allowed for visual differentiation of ripe fruits from green leaves.

d. It enabled bipedalism to occur rapidly.

e. It allowed for contrast detection of rocks versus gullies.

Difficulty Level: Difficult

Topic: Evolution of Human Brains

Skill Level: Understand the Concepts

Learning Objective: 1.4 Identify factors involved in the evolution of human brains.

Answer: C

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

67. Which key characteristic of early humans allowed them to effectively out-compete other species?

a. Color vision allowed for the detection of ripe fruit and edible 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 behaviors to be enacted.

Difficulty Level: Moderate

Topic: Evolution of Human Brains

Skill Level: Remember the Facts
Learning Objective: 1.4 Identify factors involved in the evolution of human brains.

Answer: E

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

68. Humans and chimpanzees share approximately \_\_\_\_\_\_\_\_\_ of their DNA in common.

a. 99 percent

b. 90 percent

c. 75 percent

d. 50 percent

e. 10 percent

Difficulty Level: Moderate

Topic: Evolution of Human Brains

Skill Level: Remember the Facts
Learning Objective: 1.4 Identify factors involved in the evolution of human brains.

Answer: A

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

69. Which statement about the hominid species is correct?

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 Level: Difficult

Topic: Evolution of Human Brains

Skill Level: Remember the Facts

Learning Objective: 1.4 Identify factors involved in the evolution of human brains.

Answer: D

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

70. Which statement comparing mammalian brains is correct?

a. Human brains contain more neurons per gram compared to the brains of other mammals.

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

c. The human brain comprises more than 5 percent of total body weight.

d. Chimpanzee brains and human brains contain about the same number of neurons overall.

e. Density of brain neurons per gram is a constant function across body size.

Difficulty Level: Moderate

Topic: Evolution of Human Brains

Skill Level: Remember the Facts

Learning Objective: 1.4 Identify factors involved in the evolution of human brains.

Answer: A

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

71. In terms of brain size and neuron density, which evolutionary attribute contributes the most to intellectual ability?

a. having a large number of neurons not dedicated to specific functions, such as walking or digestion

b. the ratio of neurons at the rear of the brain to those at the front of the brain

c. being born with a fully developed brain

d. having a larger body size in comparison to brain size

e. establishing connections between neurons early in life, that remain stable and do not change over the course of development

Difficulty Level: Difficult

Topic: Evolution of Human Brains

Skill Level: Understand the Concepts
Learning Objective: 1.4 Identify factors involved in the evolution of human brains.

Answer: A

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

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. Synchrony

d. Neoteny

e. Conductive trend

Difficulty Level: Moderate

Topic: Evolution of Human Brains

Skill Level: Remember the Facts

Learning Objective: 1.4 Identify factors involved in the evolution of human brains.

Answer: D

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

73. An adult human brain is approximately \_\_\_\_\_\_\_ the weight of a newborn brain.

a. two times

b. four times

c. half

d. six times

e. eight times

Difficulty Level: Moderate

Topic: Evolution of Human Brains

Skill Level: Remember the Facts

Learning Objective: 1.4 Identify factors involved in the evolution of human brains.

Answer: B

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

74. In humans, the brain reaches adult size by

a. adolescence.

b. infancy.

c. early childhood.

d. middle childhood.

e. old age.

Difficulty Level: Moderate

Topic: Evolution of Human Brains

Skill Level: Remember the Facts

Learning Objective: 1.4 Identify factors involved in the evolution of human brains.

Answer: A

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

75. Which conclusion regarding the use of animals by humans is correctly stated?

a. Owning a pet requires permission from a veterinarian, whereas research requires no such oversight.

b. Animals used for industrial purposes are treated more humanely than animals studied by scientists.

c. Pet ownership potentially causes more harm to animals than does research use.

d. In the United States, more animals are housed in research facilities than are kept as household pets.

e. Very little animal research has been useful for understanding and treating human disease.

Difficulty Level: Moderate

Topic: Research with Animals

Skill Level: Remember the Facts
Learning Objective: 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: C

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

76. Animal rights activists tend to show a disproportionate amount of concern with

a. the hunting and trapping of animals.

b. eating animals as food.

c. the use of animals as companions to humans.

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

e. the use of animals as subjects for research.

Difficulty Level: Moderate

Topic: Research with Animals

Skill Level: Remember the Facts
Learning Objective: 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: E

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

77. Which statement 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 conducted using animals.

Difficulty Level: Moderate

Page Topic: Research with Animals

Skill Level: Understand the Concepts
Learning Objective: 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: C

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

78. Compared to the others, \_\_\_\_\_\_\_\_ is an indispensable use of animals.

a. research for the treatment of human disease

b. serving as a source of food

c. providing companionship to humans

d. serving as a source of fur

e. their entertainment value

Difficulty Level: Moderate

Topic: Research with Animals

Skill Level: Remember the Facts
Learning Objective: 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: A

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

79. 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 Level: Moderate

Topic: Research with Animals

Skill Level: Remember the Facts
Learning Objective: 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: B

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

80. Why are computer simulations insufficient to address the needs of neuroscience researchers?

a. Computer simulations have proven unreliable for research purposes.

b. Maintaining a suite of computers is prohibitively expensive compared to maintaining a colony of research animals.

c. Studying phenomena in computer simulations cannot substitute for studying the same phenomena in complex, living organisms.

d. Simulations can only be applied to behavior in healthy humans, not people with specific neurological disorders.

e. Computers are not fast enough to mimic the action of nerve transmission and other biological processes.

Difficulty Level: Moderate

Topic: Research with Animals

Skill Level: Remember the Facts
Learning Objective: 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: C

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

81. Research with animals is

a. highly regulated at local, state, and federal levels.

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

c. only partially regulated, with chimpanzees having the greatest protections.

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

e. only partially regulated, with rodents having the greatest protections.

Difficulty Level: Easy

Topic: Research with Animals

Skill Level: Remember the Facts
Learning Objective: 1.6 Identify mechanisms for oversight of animal research.

Answer: A

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

82. What is IACUC an abbreviation of?

a. Internal Action Committee Under Counties

b. International Assembly of Caution for Unintended Consequences

c. Institutional Animal Care and Use Committee

d. Intended Activity Causes Undue Concern

e. Institute of Animal Compassion and Unconditional Care

Difficulty Level: Easy

Skill Level: Remember the Facts
Topic: Research with Animals

Learning Objective: 1.6 Identify mechanisms for oversight of animal research.

Answer: C

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

83. Reggie was asked to take part in a study investigating the effects of a pain reliever on muscle tears. In order to test the drug, he will need to engage in physical activity that results in small tears in the muscles of his forearm. Reggie should know beforehand that all studies involving human participants 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 Level: Easy

Topic: Research with Humans

Skill Level: Apply What You Know
Learning Objective: 1.7 Discuss ethical considerations in research with human participants.

Answer: C

APA Learning Objective: 1.3 Describe applications of psychology.

84. A statement in which a 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. tacit cooperation.

c. research agreement.

d. informed consent.

e. educated agreement.

Difficulty Level: Easy

Topic: Research with Humans

Skill Level: Remember the Facts
Learning Objective: 1.7 Discuss ethical considerations in research with human participants.

Answer: D

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

85. A research participant should not sign an informed consent form if it is missing

a. a clear statement of the researcher’s hypothesis.

b. supporting research citations related to the study.

c. a statement regarding the anticipated benefits and costs of participation.

d. a summary of the researcher’s previous contributions to the question under investigation.

e. a notarized seal from an attorney.

Difficulty Level: Easy

Topic: Research with Humans

Skill Level: Remember the Facts
Learning Objective: 1.7 Discuss ethical considerations in research with human participants.

Answer: C

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

a. Institutional Research Group.

b. University Research Panel.

c. Institutional Review Board.

d. Institutional Research Review Commission.

e. University Review Committee.

Difficulty Level: Easy

Topic: Research with Humans

Skill Level: Remember the Facts
Learning Objective: 1.8 Identify mechanisms for oversight of human research.

Answer: C

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

87. Which research proposal would have to undergo IRB review?

a. recording whether men make remarks to a woman who is walking down the street

b. watching people at a shopping mall to see if they smile when passing each other

c. providing an untested depression medication to hospital inpatients

d. unobtrusively timing how long it takes preschool children to count to 10

e. observing whether individuals hold open a door for others

Difficulty Level: Easy

Topic: Research with Humans

Skill Level: Understand the Concepts
Learning Objective: 1.8 Identify mechanisms for oversight of human research.

Answer: C

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

88. In 2010, a case of vague and incomplete 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. New Mexico 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 Level: Easy

Topic: Research with Humans

Skill Level: Remember the Facts
Learning Objective: 1.7 Discuss ethical considerations in research with human participants.

Answer: A

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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 Level: Easy

Topic: Research with Humans

Skill Level: Remember the Facts
Learning Objective: 1.7 Discuss ethical considerations in research with human participants. Answer: C

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

90. An emerging interdisciplinary field called \_\_\_\_\_\_\_\_\_\_\_\_\_\_is devoted to better understanding the implications of and developing best practices in ethics for neuroscience research with human participants.

a. neuromorality

b. bioethics

c. biological integrity

d. neuroethics

e. morals for behavioral neuroscience

Difficulty Level: Easy

Topic: Research with Humans

Skill Level: Remember the Facts
Learning Objective: Learning Objective: 1.7 Discuss ethical considerations in research with human participants.

Answer: D

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

91. Which topic area would be addressed by neuroethics?

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

b. maintaining the privacy of brain imaging information

c. inspecting informed consent statements that include detailed information on the hypothesis being tested

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

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

Difficulty Level: Easy

Topic: Research with Humans

Skill Level: Remember the Facts
Learning Objective: Learning Objective: 1.7 Discuss ethical considerations in research with human participants.

Answer: B

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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 Level: Easy

Topic: Careers in Neuroscience

Skill Level: Remember the Facts
Learning Objective: Learning Objective: 1.9 Identify careers in behavioral neuroscience.

Answer: D

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

a. Behavioral neuroscience

b. Biopsychology

c. Psychobiology

d. Physiological psychology

e. Biological pseudoscience

Difficulty Level: Easy

Topic: Careers in Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.9 Identify careers in behavioral neuroscience.

Answer: A

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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 Level: Moderate

Topic: Careers in Neuroscience

Skill Level: Remember the Facts
Learning Objective: Learning Objective: 1.9 Identify careers in behavioral neuroscience.

Answer: B

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

95. Being a professional neuroscientist typically requires a

a. Ph.D. degree.

b. master’s degree.

c. technical degree.

d. bachelor’s degree.

e. high school diploma.

Difficulty Level: Easy

Topic: Careers in Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.9 Identify careers in behavioral neuroscience.

Answer: A

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

96. Professionals in behavioral 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 Level: Easy

Topic: Careers in Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.9 Identify careers in behavioral neuroscience.

Answer: E

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

97. Research on the effectiveness of study habits consistently reveals that the best approach to studying is to

a. master all the content right before an assessment takes place, to maximize recall.

b. highlight every other word in a sentence, rather than the entire sentence itself.

c. spread out study sessions rather than cramming information in one sitting.

d. read silently and contemplate the meaning of information, almost in a meditative state.

e. learn material while engaged in another activity, to activate both the left and right hemispheres.

Difficulty Level: Easy

Topic: Strategies for Learning

Skill Level: Remember the Facts
Learning Objective: 1.10 Describe effective learning strategies for studying behavioral neuroscience.

Answer: C

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

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

Difficulty Level: Easy

Topic: Introduction

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: movement

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: Dualism

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

Difficulty Level: Moderate

Topic: The Goals of Research

Skill Level: Remember the Facts
Learning Objective: 1.1 Compare the roles of generalization and reduction in behavioral neuroscience research.

Answer: Generalizations

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: Johannes Müller

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: Pierre Flourens

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

Difficulty Level: Moderate

Topic: Foundations of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: Wilhelm Wundt

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

Difficulty Level: Moderate

Topic: The Goals of Research

Skill Level: Understand the Concepts
Learning Objective: Learning Objective: 1.1 Compare the roles of generalization and reduction in behavioral neuroscience research.

Answer: Reduction

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

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

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: Aristotle

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

106. \_\_\_\_\_\_\_\_\_\_\_\_\_ performed an autopsy of the brain of a patient who had been unable to speak after suffering a stroke, thereby identifying an important brain region related to speech.

Difficulty Level: Difficult

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: Paul Broca

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: primary motor

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

108. \_\_\_\_\_\_\_\_ involves the measurement of changes in behavior following intentional damage to portions of an animal’s brain.

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Answer: Experimental ablation

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

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

Difficulty Level: Easy

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Topic: Natural Selection and Evolution

Skill Level: Remember the Facts
Learning Objective: 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: Charles Darwin

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

Difficulty Level: Moderate

Topic: Functionalism and the Inheritance of Traits

Skill Level: Remember the Facts
Learning Objective: 1.3 Describe the role of natural selection in the evolution of behavioral traits.

Answer: Mutations

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

Difficulty Level: Easy

Topic: Evolution of Human Brains

Skill Level: Remember the Facts
Learning Objective: 1.4 Identify factors involved in the evolution of human brains.

Answer: *Homo sapiens*

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

Difficulty Level: Difficult

Topic: Evolution of Human Brains

Skill Level: Remember the Facts
Learning Objective: 1.4 Identify factors involved in the evolution of human brains.

Answer: hominid

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

113. The prolongation of brain maturation in young humans is known as \_\_\_\_\_\_\_\_.

Difficulty Level: Moderate

Topic: Evolution of Human Brains

Skill Level: Remember the Facts

Learning Objective: 1.4 Identify factors involved in the evolution of human brains.

Answer: neoteny

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

114. \_\_\_\_\_\_\_\_ has the potential to produce greater animal suffering than does research.

Difficulty Level: Moderate

Topic: Research with Animals

Skill Level: Remember the Facts
Learning Objective: 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: Pet ownership

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

Difficulty Level: Moderate

Topic: Research with Animals

Skill Level: Remember the Facts
Learning Objective: 1.5 Outline reasons for the use of animals in behavioral neuroscience research.

Answer: stroke

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

Difficulty Level: Moderate

Topic: Careers in Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.9 Identify careers in behavioral neuroscience.

Answer: Physiological psychology

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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

Difficulty Level: Difficult

Topic: Careers in Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.9 Identify careers in behavioral neuroscience.

Answer: Neurologists

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

**Essay Questions**

118. Contrast the philosophical positions of dualism and monism.

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Remember the Facts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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.

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

Difficulty Level: Difficult

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

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 was the seat of thought. Aristotle believed that the brain functioned to cool the passions of the heart. Galen conducted several animal dissections and concluded that Aristotle’s beliefs were “utterly absurd,” in his words.

120. Discuss the difference between generalization and reduction as explanatory systems. Provide an example of each.

Difficulty Level: Difficult

Topic: The Goals of Research

Skill Level: Apply What You Know
Learning Objective: 1.1 Compare the roles of generalization and reduction in behavioral neuroscience research.

APA Learning Objective: 1.3 Describe applications of psychology.

Answer: Generalization is a type of scientific explanation involving a general conclusion based on observation of many similar phenomena. General laws are used to describe many instances of behavior. Reduction is a type of scientific explanation involving decomposing a complex situation into simpler processes, such as explaining psychological phenomena in terms of the underlying biological processes that produce those phenomena Examples will vary.

121. Describe the research technique of experimental ablation and identify the researcher who was responsible for its initial use.

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

Answer: Ablation involves the physical manipulation of the brain and allows for an assessment of a change in function after the manipulation. An example would be excising the frontal lobe from a cat and then observing the animal’s subsequent behavior. Experimental ablation was advanced as a technique of study by Pierre Flourens in the 1800s.

122. Identify two early key contributors to the development of physiology and discuss the implications that their work had for behavioral neuroscience.

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts
Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

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. Fritsch and Hitzig used electrical stimulation of the brain to identify changes in behavior.

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

Difficulty Level: Moderate

Topic: Roots of Behavioral Neuroscience

Skill Level: Understand the Concepts

Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

Answer: Galvani was able to contract a frog’s 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, as proposed by Descartes.

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

Difficulty Level: Moderate

Topic: Functionalism and the Inheritance of Traits

Skill Level: Apply What You Know
Learning Objective: 1.3 Describe the role of natural selection in the evolution of behavioral traits.

APA Learning Objective: 1.3 Describe applications of psychology.

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.

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

Difficulty Level: Difficult

Topic: Functionalism and the Inheritance of Traits

Skill Level: Understand the Concepts
Learning Objective: 1.3 Describe the role of natural selection in the evolution of behavioral traits.

APA Learning Objective: 1.2 Develop a working knowledge of psychology’s content domains.

Answer: Mutations modify the range of features or behaviors seen in an 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 eventual genetic makeup of the species.

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

Difficulty Level: Difficult

Topic: Functionalism and the Inheritance of Traits

Skill Level: Remember the Facts
Learning Objective: 1.3 Describe the role of natural selection in the evolution of behavioral traits.

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

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.

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

Difficulty Level: Difficult

Topic: Ethical Issues in Research with Animals

Skill Level: Understand the Concepts
Learning Objective: 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 advances in knowledge produced by the research. An argument FOR might focus on the fact that such research may produce benefits that are substantial for humans and that cannot be realized in any other way. An argument AGAINST might propose that humans and animals are so different that results from animals are not useful for understanding humans.

128. Discuss the components of informed consent.

Difficulty Level: Moderate

Topic: Research with Humans

Skill Level: Remember the Facts
Learning Objective: 1.7 Discuss ethical considerations in research with human participants.

APA Learning Objective: 1.1 Describe key concepts, principles, and overarching themes in psychology.

Answer: Research with human participants must include informed consent, which describes the process by which researchers tell potential participants about the nature of the study, how the data will be collected and stored, and what the anticipated benefits and risks will be.

**Revel Quizzes**

The following questions appear at the end of each module and at the end of the chapter in Revel for *Physiology of Behavior*, 13th Edition.

**Assignment: Quiz: 1.1 Foundations of Behavioral Neuroscience**

**EOM Q1.1**
**Question:** Generalization is to \_\_\_\_\_\_\_\_\_\_ as reductionism is to \_\_\_\_\_\_\_\_\_\_.

1. identifying general rules that govern behavior across multiple organisms; identifying simple causes of complex behaviors
2. identifying simple causes of complex behaviors; identifying general rules that govern behavior across multiple organisms
3. organizing data in terms of general rules; identifying the smallest piece of a neuron
4. identifying the smallest piece of a neuron; organizing data in terms of general rules

Answer: A

Consider This: The term “general” typically means widespread, whereas “reduce” means to make something smaller; LO 1.1: Compare the roles of generalization and reduction in behavioral neuroscience research.

Learning Objective: 1.1: Compare the roles of generalization and reduction in behavioral neuroscience research.

Difficulty Level: Moderate

Skill Level: Analyze It

**EOM Q1.1.2**

**Question:** With respect to research in behavioral neuroscience, reductionism is:

1. neither necessary nor sufficient.
2. necessary, but not sufficient.
3. sufficient, but not necessary.
4. both necessary and sufficient.

Answer: B

Consider This: It is not enough to correlate behaviors with physiological events; LO 1.1: Compare the roles of generalization and reduction in behavioral neuroscience research

Learning Objective: 1.1: Compare the roles of generalization and reduction in behavioral neuroscience research.

Difficulty Level: Moderate

Skill Level: Analyze It

**EOM Q1.1.3**

**Question:** The idea that the mind and body are separate and made up of different matter is called:

Option

1. dualism.
2. monism.
3. separatism.
4. unity.

Answer: A

Consider This: This theory poses that the mind and body are working together as a duo; LO 1.2: Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Learning Objective: 1.2 Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Difficulty Level: Easy

Skill Level: Remember the Facts

**EOM Q1.1.4**

**Question:** Experimental ablations were first performed by:

1. Flourens.
2. Broca.
3. Aristotle.
4. Galen.

Answer: A

Consider This: Experimental ablations began in the nineteenth century and were first performed in animals; LO 1.2: Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Learning Objective: 1.2: Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Difficulty Level: Easy

Skill Level: Remember the Facts

**EOM Q1.1.5**

**Question:** Which individual is matched with the correct historical contribution to behavioral neuroscience?

1. Cajal—examined individual neurons of the brain
2. Galvani—was the first to measure the speed of neural conduction
3. Purkinje—found that electrically stimulating a frog’s nerve contracted the muscle to which it was attached
4. Von Helmholtz—discovered neurons responsible for controlling contractions of the heart

Answer: A

Consider This: By the late nineteenth century, it became clear that the nervous system was composed of discrete cells; LO 1.2: Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Learning Objective: LO 1.2: Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Skill: Remember the Facts

Difficulty: Moderate

**Assignment: Quiz: Natural Selection And Evolution**

**EOM Q1.2.1**

**Question:** A functionalist approach to human emotion would MOST likely emphasize:

1. the roots of emotional experience in the unconscious.
2. the basic elements of emotional experience.
3. the subjective feelings that characterize emotional experience.
4. the role of emotional experiences in maintaining social bonds.

Answer: D

Consider This: Functionalism refers to the extent to which a characteristic or difference in the animal has a purpose; LO 1.3: Describe the role of natural selection in the evolution of behavioral traits.

Learning Objective: 1.3: Describe the role of natural selection in the evolution of behavioral traits.

Difficulty Level: Difficult

Skill Level: Apply What You Know

**EOM Q1.2.2**

**Question:** \_\_\_\_\_\_\_\_\_\_\_\_\_ refers to a situation in which a particular characteristic allows an organism to be more successful reproductively, causing the characteristic to become more prevalent.

1. Natural selection
2. Darwinism
3. Artificial selection
4. Mutation

Answer: A

Consider This: This process allows species to naturally adapt to their changing environments.; LO 1.3: Describe the role of natural selection in the evolution of behavioral traits.

Learning Objective:1.3: Describe the role of natural selection in the evolution of behavioral traits.

Difficulty Level: Easy

Skill Level: Remember the Facts

**EOM Q1.2.3**

**Question:** Mutations:

1. are accidental changes in chromosomes of sperm or eggs that result in new characteristics.
2. are the ultimate cause of a species dying out.
3. are never found in nature.
4. always involve negative changes.

Answer: A

Consider This: Natural selection occurs due to spontaneous mutations; LO 1.3: Describe the role of natural selection in the evolution of behavioral traits.

Learning Objective: 1.3: Describe the role of natural selection in the evolution of behavioral traits.

Difficulty Level: Easy

Skill Level: Remember the Facts

**EOM Q1.2.4**

**Question:** Neoteny refers to:

1. slow brain maturation after birth, making the young of the species in question dependent on others to some extent.
2. small brains.
3. brains that are large compared to body size.
4. animals that are able to walk and fend for themselves after birth.

Answer: A

Consider This: The term “neoteny” means to stretch something out for a longer duration; LO 1.4: Identify factors involved in the evolution of human brains.

Learning Objective: 1.4: Identify factors involved in the evolution of human brains.

Difficulty Level: Easy

Skill Level: Remember the Facts

**EOM Q1.2.5**

**Question:** In humans, the brain reaches adult size by:

1. adolescence.
2. infancy.
3. early childhood.
4. old age.

Answer: A

Consider This: The brain has to nearly quadruple in size from the time an individual is born; LO 1.4: Identify factors involved in the evolution of human brains
Learning Objective: 1.4: Identify factors involved in the evolution of human brains.

Difficulty Level: Easy

Skill Level: Remember the Facts

**Assignment: Quiz: Ethical Issues in Research with Humans and Other Animals**

**EOM Q1.3.1**

**Question:** Which statement is FALSE with respect to the use of animals in research?

1. Animal research is potentially exploitative.
2. Animal research is well-regulated.
3. Animal research can be replaced by tissue cultures or computer simulations.
4. Animal research fuels progress in the treatment of disease.

Answer: C

Consider This: Some research questions must be tested using complex, living organisms; LO 1.5: Outline reasons for the use of animals in behavioral neuroscience research.

Learning Objective: 1.5: Outline reasons for the use of animals in behavioral neuroscience research.

Difficulty Level: Easy

Skill Level: Understand the Concepts

**EOM Q1.3.2**

**Question:** With respect to its oversight, research with animals is:

1. highly regulated.
2. largely unregulated because animals are not viewed as having rights.
3. only partially regulated, with chimpanzees having the greatest protections.
4. only partially regulated, with marine life having the greatest protections.

Answer: A

Consider This: Any institution that uses animals in research needs to have an Institutional Animal Care and Use Committee; LO 1.6: Identify mechanisms for oversight of animal research.

Learning Objective: 1.6: Identify mechanisms for oversight of animal research.

Difficulty Level: Moderate

Skill Level: Understand the Concepts

**EOM Q1.3.3**

**Question:** Which researcher’s project would require IACUC review?

1. Dr. Jackson proposes testing birds for West Nile virus.
2. Dr. Jiminez plans to observe rats’ mating rituals.
3. Dr. Nguyen’s project involves observing monkeys unobtrusively in the wild.
4. Dr. Diamond collects duck feces from a local pond and analyzes its bacteria.

Answer: A

Consider This: Any activity that alters or disturbs the activity of the animals needs IACUC approval; LO 1.6: Identify mechanisms for oversight of animal research.

Learning Objective: 1.6: Identify mechanisms for oversight of animal research.

Difficulty Level: Difficult

Skill Level: Apply What You Know

**EOM Q1.3.4**

Question: A research participant should NOT sign an informed consent form if it is missing:

the researcher’s hypothesis.

background literature about the study.

risks and benefits.

the researcher’s opinions about the literature.

Answer: C

Consider This: Which option would be necessary for a participant to decide whether he/she wanted to be part of the study?; LO 1.7: Discuss ethical considerations in research with human participants.

Learning Objective: 1.7: Discuss ethical considerations in research with human participants.

Difficulty Level: Moderate

Skill Level: Analyze It

**EOM Q1.3.5**

**Question:** IRB review is mandatory for a study that:

1. compares drug effects in mice.
2. consists of reviewing research literature.
3. will provide depression medication to a group of patients.
4. entails teaching sign language to a group of gorillas.

Answer: C

Consider This: Any activity that alters or disturbs the activity of the individual needs IRB approval; LO 1.8: Identify mechanisms for oversight of human research.

Learning Objective: LO 1.8 Identify mechanisms for oversight of human research.

Skill Level: Apply What You Know

Difficulty Level: Moderate

**Assignment: Quiz: The Future of Neuroscience: Careers and Strategies for Learning**

**EOM Q1.4.1**

**Question:** Being a neuroscientist typically requires a \_\_\_\_\_ degree.

1. Ph.D.
2. master’s
3. technical
4. bachelor’s

Answer: A

Consider This: Most neuroscientists work in universities or hospitals that require advanced degrees; LO 1.9: Identify careers in behavioral neuroscience.

Learning Objective: 1.9: Identify careers in behavioral neuroscience.

Difficulty Level: Easy

Skill Level: Remember the Facts

**EOM Q1.4.2**

**Question:** Professionals in neuroscience are LEAST likely to have a background in:

1. biology.
2. psychology.
3. chemistry.
4. anthropology.

Answer: D

Consider This: Although neuroscience is a diverse field, it focuses on the nervous system and behavior of individual organisms; LO 1.9: Identify careers in behavioral neuroscience.
Learning Objective: 1.9: Identify careers in behavioral neuroscience.

Difficulty Level: Moderate

Skill Level: Understand the Concepts

**EOM Q1.4.3**

**Question:** Graduate students in neuroscience:

1. conduct independent research.
2. write literature reviews without conducting independent research.
3. serve as a research assistant, never conducting independent research.
4. work with patients to prescribe appropriate medications.

Answer: A

Consider This: Graduate students are often required to think independently and are given greater responsibility at this level, LO 1.9: Identify careers in behavioral neuroscience.

Learning Objective: LO 1.9: Identify careers in behavioral neuroscience.

Difficulty Level: Moderate

Skill Level: Understand the Concepts

**EOM Q1.4.4**

**Question: Which would be the BEST study technique to learn material in this course?**

1. Reading the chapter
2. Highlighting important information as you read the chapter
3. Underlining important information as you read the chapter
4. Taking notes that organize the important information as you read the chapter

Answer: D

Consider This: Study methods that require you to generate your own material or organize your thoughts are superior when it comes to recall; LO 1.10: Describe effective learning strategies for studying behavioral neuroscience.

Learning Objective: 1.10: Describe effective learning strategies for studying behavioral neuroscience.

Difficulty Level: Moderate

Skill Level: Apply What You Know

**EOM Q1.4.5**

**Question:** When studying for a test in this course, it would be BEST to study:

1. in a single session one hour prior to the exam.
2. in a single session the night before the exam.
3. in several sessions during the weeks preceding the exam.
4. right before going to sleep.

Answer: C

Consider This: Our brains more effectively recall information that is presented repeatedly rather than a single time; LO 1.10: Describe effective learning strategies for studying behavioral neuroscience.

Learning Objective: 1.10: Describe effective learning strategies for studying behavioral neuroscience.

Difficulty Level: Moderate

Skill Level: Apply What You Know

**Chapter Quiz: Introduction**

**EOC Q1.1**

**Question:** A neuropsychologist reports the case of a person who suffered a stroke, damaging a small portion of their occipital lobe. The individual experienced difficulties in perceiving motion. With respect to the elements of scientific explanation in behavioral neuroscience, this case study BEST illustrates:

1. generalization.
2. reductionism.
3. separatism.
4. validity.

Answer: B

Consider This: The term “general” typically means widespread, whereas “reduce” means to make something smaller; LO 1.1: Compare the roles of generalization and reduction in behavioral neuroscience research.

Learning Objective: 1.1: Compare the roles of generalization and reduction in behavioral neuroscience research.
Skill Level: Apply What You Know

Difficulty Level: Moderate

**EOC Q1.2**

**Question:** A researcher explains aspects of posttraumatic stress disorder as an example of broad principles that apply to all people. This situation BEST illustrates:

1. reductionism.
2. generalization.
3. reflexes.
4. functionalism.

Answer: B

Consider This: The term “general” typically means widespread; LO 1.1: Compare the roles of generalization and reduction in behavioral neuroscience research.

Learning Objective: 1.1: Compare the roles of generalization and reduction in behavioral neuroscience research.

Difficulty Level: Easy

Skill Level: Remember the Facts

**EOC Q1.3**

**Question:** Neuroscientists focus on \_\_\_\_\_\_\_\_\_\_\_\_ in their research.

1. generalization, but not reductionism
2. reductionism, but not generalization
3. both reductionism and generalization
4. neither reductionism nor generalization

Answer: C

Consider This: Researchers typically want to find specific causes and ensure they apply to the majority of situations; LO 1.1: Compare the roles of generalization and reduction in behavioral neuroscience research.

Learning Objective: 1.1: Compare the roles of generalization and reduction in behavioral neuroscience research.

Difficulty Level: Moderate

Skill Level: Apply What You Know

**EOC Q1.4**

**Question:** Descartes, who first described and studied reflexes, is BEST described as a:

1. monist.
2. dualist.
3. separatist.
4. revolutionary.

Answer: B

Consider This: Descartes believed each person possessed a mind that was not subject to the laws of the universe; LO 1.2: Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Learning Objective: 1.2: Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.
Difficulty Level: Moderate

Skill Level: Understand the Concepts

**EOC 1.5**

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

1. Flourens; Broca
2. Broca; Flourens
3. Müller; Flourens
4. Müller; Broca

Answer: A

Consider This: Müller was responsible for the doctrine of specific energies; LO 1.2: Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Learning Objective: 1.2: Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.
Skill Level: Analyze It

Difficulty Level: Moderate

**EOC Q1.6**

**Question:** \_\_\_\_\_\_\_\_\_\_\_ developed the doctrine of specific nerve energies.

1. Pierre Flourens
2. Johannes Müller
3. Paul Broca
4. Luigi Galvani

Answer: B

Consider This: The developer is considered one of the most important figures in the development of experimental physiology; LO 1.2: Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.

Learning Objective: 1.2: Summarize historical and contemporary contributions to behavioral neuroscience from various scientific disciplines.
Skill Level: Remember the Facts

Difficulty Level: Easy

**EOC Q1.7**

**Question:** Over successive generations, moths develop spots that resemble eyes on their wings; the spots scare off predators. This characteristic is a:

1. selective advantage.
2. genetic susceptibility.
3. general advantage
4. selective disadvantage.

Answer: A

Consider This: Moths with this adaptation would live to reproduce; LO 1.3: Describe the role of natural selection in the evolution of behavioral traits.

Learning Objective: 1.3: Describe the role of natural selection in the evolution of behavioral traits.

Difficulty Level: Moderate

Skill Level: Understand the Concepts

**EOC Q1.8**

**Question:** 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:

1. mutation.
2. gene splicing.
3. genetic alteration
4. bad luck.

Answer: A

Consider This: Natural changes in characteristics can happen at the level of the egg and sperm; LO 1.3: Describe the role of natural selection in the evolution of behavioral traits.

Learning Objective: 1.3: Describe the role of natural selection in the evolution of behavioral traits.

Difficulty Level: Easy

Skill Level: Understand the Concepts

**EOC Q1.09**

**Question:** Mutations are:

1. either favorable or unfavorable immediately, resulting in automatic advantage or disadvantage.
2. always favorable.
3. always unfavorable.
4. sometimes favorable or unfavorable immediately, ultimately not affecting the species as a whole.

Answer: D

Consider This: Members of different species often have a tremendous amount of diversity – just look at humans; LO 1.3: Describe the role of natural selection in the evolution of behavioral traits.

Learning Objective: 1.3: Describe the role of natural selection in the evolution of behavioral traits.
Difficulty Level: Moderate

Skill Level: Understand the Concepts

**EOC Q1.10**

**Question:** The development of perception allowing for color differentiation was a functional development; not all animals have this ability. What made it functional?

1. It allows for night vision.
2. It allows for differentiation of ripe fruits.
3. It enabled bipedalism.
4. It allows for contrast detection.

Answer: B

Consider This: Functionalism means that the development serves a purpose for humans. Which would be a benefit to humans that depends on color vision?; LO 1.4: Identify factors involved in the evolution of human brains.

Learning Objective: 1.4: Identify factors involved in the evolution of human brains.

Difficulty Level: Moderate

Skill Level: Understand the Concepts

**EOC Q1.11**

**Question:** Recent research has shown that intelligence is dictated by:

1. the number of neurons not dedicated to set functions, like walking.
2. the number of neurons dedicated to movement and other set functions.
3. a larger ratio of brain to body size.
4. a smaller ratio of brain to body size.

Answer: A

Consider This: More “free” neurons would allow for more complex behaviors; LO 1.4: Identify factors involved in the evolution of human brains.

Learning Objective: 1.4: Identify factors involved in the evolution of human brains.

Difficulty Level: Moderate
Skill Level: Apply What You Know

**EOC Q1.12**

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

1. flexibility.
2. rigidity.
3. plasticity.
4. stasis.

Answer: C

Consider This: The brain is capable of change over time; LO 1.5: Outline reasons for the use of animals in behavioral neuroscience research.

Learning Objective: 1.5: Outline reasons for the use of animals in behavioral neuroscience research.

Difficulty Level: Moderate

Skill Level: Apply What You Know

**EOC Q1.13**

**Question:** 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:

1. freedom from risks.
2. monetary benefits for participants.
3. informed consent.
4. parental consent even if over the age of 18 years.

Answer: C

Consider This: What would need to be in place for your friend to fully understand what is being asked of him or her?; LO 1.8: Identify mechanisms for oversight of human research.

Learning Objective: 1.8: Identify mechanisms for oversight of human research.
Difficulty Level: Moderate

Skill Level: Apply What You Know

**EOC Q1.14**

**Question:** In addition to the nervous system, behavioral neuroscientists are especially interested in the \_\_\_\_\_ system.

1. digestive
2. circulatory
3. respiratory
4. endocrine

Answer: D

Consider This: Behavior is controlled not only by neurotransmitters, but also by hormones; LO 1.9: Identify careers in behavioral neuroscience.

Learning Objective: 1.9: Identify careers in behavioral neuroscience.

Difficulty Level: Moderate

Skill Level: Apply What You Know

**EOC Q1.15**

**Question:** All else being equal, which student is LEAST likely to master the material in this course?

1. Deon, who teaches a friend the material
2. Kim, who takes organized notes as she reads the chapter
3. Carlito, who uses mnemonics
4. Dana, who highlights key information in the textbook

Answer: D

Consider This: Engaging with the material rather than passively reading will result in better recall of information; LO 1.10: Describe effective learning strategies for studying behavioral neuroscience.

Learning Objective: 1.10: Describe effective learning strategies for studying behavioral neuroscience.

Difficulty Level: Moderate

Skill Level: Apply What You Know