

CHAPTER 1

BIOPSYCHOLOGY AS A NEUROSCIENCE: WHAT IS BIOPSYCHOLOGY, ANYWAY?

MULTIPLE CHOICE QUESTIONS

1. The human brain weighs about
 - a. 0.3 kilograms (0.7 pounds).
 - b. 0.8 kilograms (1.8 pounds).
 - c. 1.0 kilograms (2.2 pounds).
 - d. 1.3 kilograms (2.9 pounds).
 - e. 2.3 kilograms (5.1 pounds).

Answer: D

Diff: 2

Page Ref: 2

Topic: Introduction

Type: Factual

2. The human brain is composed of various cells, including about 100 billion that are specialized to receive and transmit electrochemical signals. These specialized cells are called
 - a. glial cells.
 - b. axons.
 - c. neurons.
 - d. oligodendroglia.
 - e. sulci.

Answer: C

Diff: 1

Page Ref: 2

Topic: Introduction

Type: Factual

3. The study of the nervous system is called
- a. neuroscience.
 - b. psychology.
 - c. biopsychology.
 - d. neurochemistry.
 - e. neurophysiology.

Answer: A

Diff: 1

Page Ref: 2

Topic: Introduction

Type: Factual

4. Jimmie G., the man frozen in time, had a severe problem with his
- a. memory.
 - b. temperature regulation.
 - c. IQ.
 - d. attention.
 - e. ability to tell time.

Answer: A

Diff: 1

Page Ref: 3

Topic: Introduction

Type: Factual

5. Which of the following is a major theme of your text?
- a. thinking creatively about biopsychology
 - b. clinical implications
 - c. the evolutionary perspective
 - d. neuroplasticity
 - e. all of the above

Answer: E

Diff: 1

Page Ref: 3

Topic: Introduction

Type: Factual

6. Research has now established that the brain is
- a. static.
 - b. immutable.
 - c. plastic.
 - d. white.
 - e. gray.

Answer: C

Diff: 1

Page Ref: 4

Topic: What Is Biopsychology?

Type: Factual

7. Biopsychology is the scientific study of the
- a. biology of behavior.
 - b. brain.
 - c. chemistry of the brain.
 - d. biology of the brain.
 - e. biology of cognition.

Answer: A

Diff: 1

Page Ref: 4

Topic: What Is Biopsychology?

Type: Factual

8. Psychobiology, behavioral biology, and behavioral neuroscience are all approximate synonyms for
- a. cognitive behavior.
 - b. behavioral psychology.
 - c. biopsychology.
 - d. neurophysiology.
 - e. neuroscience.

Answer: C

Diff: 2

Page Ref: 4

Topic: What Is Biopsychology?

Type: Factual

9. Psychology is often defined as the scientific study of
- psychophysics.
 - behavior.
 - biopsychology.
 - the brain.
 - conditioning.

Answer: B

Diff: 1

Page Ref: 4

Topic: What Is Biopsychology?

Type: Factual

10. The man who played a key role in the emergence of biopsychology as a discipline by writing “The Organization of Behavior” is
- Sperry.
 - Hebb.
 - Lashley.
 - Milner.
 - Pinel.

Answer: B

Diff: 2

Page Ref: 4

Topic: What Is Biopsychology?

Type: Factual

11. According to the textbook, the science of biopsychology as it is practiced today emerged as a discipline in about
- 1549.
 - 1649.
 - 1749.
 - 1849.
 - 1949.

Answer: E

Diff: 2

Page Ref: 4

Topic: What Is Biopsychology?

Type: Conceptual

Rationale: Although this question appears to be factual, the choices are so diverse that the student only has to have a general concept of when biopsychology emerged to correctly answer the question.

12. Which of the following is the youngest scientific discipline?
- a. physics
 - b. astrology
 - c. biology
 - d. biopsychology
 - e. chemistry

Answer: D

Diff: 1

Page Ref: 4

Topic: What Is Biopsychology?

Type: Conceptual

Rationale: To answer this question correctly, the student needs only a general concept of the relative birth dates of the various disciplines. Astrology, of course, is not a science.

13. Biopsychology is a branch or division of
- a. neuropsychology.
 - b. psychophysiology.
 - c. neuroscience.
 - d. all of the above
 - e. both A and B

Answer: C

Diff: 2

Page Ref: 5

Topic: What Is Biopsychology?

Type: Factual

14. What distinguishes biopsychology from the other subdisciplines of neuroscience?
- a. its focus on the study of behavior
 - b. its focus on animal subjects
 - c. its focus on psychiatric disorders
 - d. its focus on psychoactive drugs
 - e. both C and D

Answer: A

Diff: 2

Page Ref: 5

Topic: What Is Biopsychology?

Type: Conceptual

Rationale: All of the options characterize biopsychology, but only A distinguishes it from the other subdisciplines of neuroscience.

15. Which subdiscipline of neuroscience focuses on the study of brain disorders?
- ethoexperimental psychology
 - biopsychology
 - developmental neurobiology
 - neuropathology
 - neuroendocrinology

Answer: D

Diff: 2

Page Ref: 5

Topic: What Is Biopsychology?

Type: Factual

16. Structure of the nervous system is to function of the nervous system as
- biopsychology is to psychology.
 - neuroanatomy is to neurophysiology.
 - neuropathology is to clinical psychology.
 - neuroscience is to biopsychology.
 - biopsychology is to neuroscience.

Answer: B

Diff: 3

Page Ref: 5

Topic: What Is Biopsychology?

Type: Factual

17. Which of the following animals are currently the most common subjects of biopsychological research?
- monkeys
 - chimpanzees
 - dogs
 - rats and mice
 - cats

Answer: D

Diff: 2

Page Ref: 5

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

18. The main difference between human brains and the brains of their mammalian relatives is that human brains tend to be bigger and
- a. whiter.
 - b. all gray.
 - c. have more cortex.
 - d. have two hemispheres.
 - e. both C and D

Answer: C

Diff: 2

Page Ref: 6

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

19. The comparison of brain-behavior relations in different species is called
- a. the comparative approach.
 - b. ethology.
 - c. biopsychology.
 - d. evolutionary biology.
 - e. none of the above

Answer: A

Diff: 1

Page Ref: 6

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

20. An advantage of biopsychological research on nonhuman animals as opposed to humans is that
- a. the brains of nonhumans are simpler.
 - b. there are fewer ethical constraints in studying nonhumans.
 - c. research in several species makes it possible to use the comparative approach.
 - d. all of the above
 - e. none of the above

Answer: D

Diff: 2

Page Ref: 6

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

21. The advantage of humans over other primates as subjects in biopsychological research is that they
- a. are often cheaper.
 - b. can report their subjective experiences.
 - c. can follow verbal directions.
 - d. all of the above
 - e. none of the above

Answer: D

Diff: 2

Page Ref: 5

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

22. The term “within-subjects design” refers to experiments in which
- a. each subject is exposed to each condition of the experiment.
 - b. a different group of subjects is tested in each condition of the experiment.
 - c. some groups of subjects receive drug injections.
 - d. invasive procedures are used, that is, those in which the internal physiology of the subjects is manipulated.
 - e. either C or D

Answer: A

Diff: 2

Page Ref: 6

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

23. In a successful experiment, the independent variable affects the
- a. confounded variable.
 - b. dependent variable.
 - c. correlated variable.
 - d. all of the above
 - e. none of the above

Answer: B

Diff: 2

Page Ref: 6

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

24. In a well-designed experiment, there is only one systematic difference between the conditions. This difference is manipulated by the experimenter and is called the
- between-subject variable.
 - within-subject variable.
 - dependent variable.
 - independent variable.
 - confounded variable.

Answer: D

Diff: 1

Page Ref: 6

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

25. Which of the following makes it difficult to make causal interpretations of experimental results?
- independent variables
 - dependent variables
 - constant variables
 - confounded variables
 - none of the above

Answer: D

Diff: 2

Page Ref: 7

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

26. The Coolidge effect refers to the fact that
- rats often gorge on alcohol after sex.
 - a sexually-fatigued animal will often resume sexual activity if its current partner is replaced with a new one.
 - the members of some species do not become sexually fatigued.
 - male animals tend to become sexually fatigued.
 - prolonged copulation is more difficult for males.

Answer: B

Diff: 2

Page Ref: 7

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

27. The experiment of Lester and Gorzalka (1988 is significant because it constitutes the first strong evidence of a Coolidge effect) in
- females.
 - humans.
 - nonhumans.
 - hamsters.
 - rats.

Answer: A

Diff: 2

Page Ref: 7

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

28. The posture of lordosis in a female rodent indicates that she
- is looking for food.
 - will attack if provoked.
 - is defending a litter of pups.
 - is sexually receptive.
 - is sexually fatigued.

Answer: D

Diff: 2

Page Ref: 7

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

29. In some studies, subjects are not assigned to particular conditions; instead subjects are selected because they are already living under these conditions (e.g., alcohol consumers and alcohol nonconsumers). Such studies are
- quasiexperiments.
 - case studies.
 - true experiments.
 - randomized experiments.
 - unethical.

Answer: A

Diff: 2

Page Ref: 8

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

30. A major shortcoming of case-study research is that
- it is always done on sick people.
 - it cannot be applied to laboratory animals.
 - it is too general.
 - the degree to which the results can be generalized is unclear.
 - both A and B

Answer: D

Diff: 2

Page Ref: 8

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

31. Research that tries to discover how pure research can best be applied to the solution of practical human problems is called
- applied.
 - pure.
 - translational.
 - confounded.
 - quasiexperimental.

Answer: C

Diff: 2

Page Ref: 9

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

Rationale: This questions requires the understanding of the concept of translational research.

32. Research that is intended to bring about direct benefit to humankind is
- biopsychological research.
 - pure research.
 - case-study research.
 - applied research.
 - correlational research.

Answer: D

Diff: 1

Page Ref: 8

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Applied

Rationale: This question requires students to understand the meaning of applied research.

33. The corpus callosum is a
- large medical dictionary.
 - source of hypothalamic hormones.
 - membership directory of the Society for Neuroscience.
 - part of the neocortex.
 - neural pathway that connects the left and right hemispheres.

Answer: E

Diff: 3

Page Ref: 9

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

34. What do Hubel, Sperry, Axelrod, Moniz, Pavlov, and Golgi have in common? They are all
- biopsychologists.
 - neuroanatomists.
 - neuropsychologists.
 - psychologists.
 - Nobel Prize winners.

Answer: E

Diff: 3

Page Ref: 9

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

35. Which of the following is NOT regarded as one of the major divisions of biopsychology?
- physiological psychology
 - clinical psychology
 - neuropsychology
 - psychophysiology
 - psychopharmacology

Answer: B

Diff: 2

Page Ref: 9

Topic: What Are the Divisions of Biopsychology?

Type: Factual

36. The division of biopsychology that studies the neural mechanisms of behavior through the direct manipulation of the brains of laboratory animals in controlled experiments is
- physiological psychology.
 - psychophysiology.
 - neuropsychology.
 - cognitive neuroscience.
 - both A and B

Answer: A

Diff: 3

Page Ref: 10

Topic: What Are the Divisions of Biopsychology?

Type: Factual

37. The research of a biopsychologist working for a drug company would likely be
- largely pure.
 - completely pure.
 - psychopharmacological.
 - applied.
 - both C and D

Answer: E

Diff: 3

Page Ref: 10

Topic: What Are the Divisions of Biopsychology?

Type: Conceptual

Rationale: The answer is not in the text; the student must infer the correct answer from concepts of applied research and psychopharmacology.

38. Which subdivision of biopsychology is most likely to be identified with an experiment in which the effects of the drug fluoxetine on the ability of mice to learn a maze is studied?
- experimental psychology
 - psychopharmacology
 - psychophysiology
 - physiological psychology
 - neuropsychology

Answer: B

Diff: 2

Page Ref: 10

Topic: What Are the Divisions of Biopsychology?

Type: Conceptual

Rationale: The answer is not in the text; the student must infer the correct answer from a concept of psychopharmacology.

39. Which subdiscipline of biopsychology is most likely to be identified with the assessment of the memory deficits of patients with damage to the frontal portions of the neocortex?
- neuropsychology
 - physiological psychology
 - psychopharmacology
 - experimental psychology
 - psychophysiology

Answer: A

Diff: 2

Page Ref: 10

Topic: What Are the Divisions of Biopsychology?

Type: Factual

40. The cerebral cortex is the outermost layer of the
- brain.
 - cerebellum.
 - great cerebral commissure.
 - cerebral hemispheres.
 - all of the above

Answer: D

Diff: 1

Page Ref: 10

Topic: What Are the Divisions of Biopsychology?

Type: Factual

41. Which subdiscipline of biopsychology is identified with the measurement of scalp EEG activity and ANS activity in humans?
- a. psychophysiology
 - b. experimental psychology
 - c. physiological psychology
 - d. neuropsychology
 - e. psychopharmacology

Answer: A

Diff: 2

Page Ref: 11

Topic: What Are the Divisions of Biopsychology?

Type: Factual

42. In psychophysiology, the usual measure of brain activity is the
- a. EKG.
 - b. ANS.
 - c. EEG.
 - d. electroencephalogram.
 - e. both C and D

Answer: E

Diff: 2

Page Ref: 11

Topic: What Are the Divisions of Biopsychology?

Type: Conceptual

Rationale: The student must understand that C and D are equivalent to identify the correct answer.

43. Many individuals with schizophrenia have
- a. regular EEG waves.
 - b. irregular heartbeats.
 - c. difficulty in the smooth visual tracking of regularly moving objects.
 - d. both A and B
 - e. none of the above

Answer: C

Diff: 2

Page Ref: 11

Topic: What Are the Divisions of Biopsychology?

Type: Factual

44. A term that refers to higher intellectual processes such as thought, memory, and attention is
- a. “cognition.”
 - b. “motivation.”
 - c. “emotions.”
 - d. “prosody.”
 - e. “IQ.”

Answer: A

Diff: 1

Page Ref: 11

Topic: What Are the Divisions of Biopsychology?

Type: Factual

45. The major method of cognitive neuroscience is
- a. single cell recording.
 - b. the electrocardiogram.
 - c. the ethological approach.
 - d. the electrooculogram.
 - e. none of the above

Answer: E

Diff: 3

Page Ref: 11

Topic: What Are the Divisions of Biopsychology?

Type: Factual

Rationale: The correct answer is functional brain imaging, which is not one of the choices.

46. The major method of cognitive neuroscience is
- a. functional brain imaging.
 - b. structural brain imaging.
 - c. autonomic nervous system recording.
 - d. the ethological approach.
 - e. the intelligence test.

Answer: A

Diff: 2

Page Ref: 11

Topic: What Are the Divisions of Biopsychology?

Type: Factual

47. Common participants in the conduct of cognitive neuroscientific research are
- cognitive psychologists.
 - computer experts.
 - biopsychologists.
 - mathematicians.
 - all of the above

Answer: E

Diff: 2

Page Ref: 12

Topic: What Are the Divisions of Biopsychology?

Type: Factual

48. According to the text, the division of biopsychology that deals generally with the biology of behavior, rather than specifically with the neural mechanisms of behavior, is
- physiological psychology.
 - psychobiology.
 - neural biology.
 - comparative psychology.
 - none of the above

Answer: D

Diff: 3

Page Ref: 12

Topic: What Are the Divisions of Biopsychology?

Type: Factual

49. Some comparative psychologists study behavior in the laboratory, whereas others conduct
- ethological research.
 - case studies.
 - experiments.
 - applied research.
 - converging operations.

Answer: A

Diff: 3

Page Ref: 12

Topic: What Are the Divisions of Biopsychology?

Type: Factual

50. Scientific progress is most likely when different approaches are focused on a single problem, particularly when the strengths of one approach compensate for the weaknesses of the others. This is called
- a. converging operations.
 - b. comparative analysis.
 - c. critical thinking.
 - d. scientific inference.
 - e. functional imaging.

Answer: A

Diff: 2

Page Ref: 13

Topic: How Do Biopsychologists Conduct Their Work?

Type: Factual

51. The primary symptom of Korsakoff's syndrome is
- a. severe memory loss.
 - b. epilepsy.
 - c. insomnia.
 - d. dehydration.
 - e. obesity.

Answer: A

Diff: 1

Page Ref: 14

Topic: How Do Biopsychologists Conduct Their Work?

Type: Factual

52. Experimental evidence suggests that the brain damage commonly observed in people who consume a lot of alcohol is caused by
- a. the direct toxic effects of alcohol on the brain.
 - b. thiamine deficiency.
 - c. vitamin B₁ deficiency.
 - d. all of the above
 - e. both A and B

Answer: D

Diff: 3

Page Ref: 14

Topic: How Do Biopsychologists Conduct Their Work?

Type: Factual

Rationale: If the student understands that B and C are identical, only D is a reasonable answer.

53. Scientists in many fields study the unobservable
- a. with electron microscopes.
 - b. with microelectrodes.
 - c. by scientific inference.
 - d. by direct observation.
 - e. by direct measurement.

Answer: C

Diff: 2

Page Ref: 14

Topic: How Do Biopsychologists Conduct Their Work?

Type: Factual

Rationale: C is by far the best answer because A and C are not used in many fields.

54. Scientists study past ice ages, evolution, neural inhibition, gravity, evaporation, and thinking by
- a. neuroscience.
 - b. scientific inference.
 - c. generalization.
 - d. operational sets.
 - e. direct observation.

Answer: B

Diff: 1

Page Ref: 14

Topic: How Do Biopsychologists Conduct Their Work?

Type: Factual

55. If an object is moving to the left at a constant speed and you are rotating your eyes to the left at twice the speed, you will see the object moving
- a. to the right at the same speed.
 - b. to the right at twice the speed.
 - c. to the right at half the speed.
 - d. to the left.
 - e. back and forth.

Answer: D

Diff: 3

Page Ref: 15

Topic: How Do Biopsychologists Conduct Their Work?

Type: Conceptual

Rationale: The student could answer correctly from rote memory or from a concept of the relation between eye movement and the visual perception of motion. The participant would see the object as it actually moves (i.e. to the left), independent of eye movement.

56. The visual system bases its perception of motion on a comparison between movement of the image on the
- a. retina and the neural commands sent from the brain to the eye muscles.
 - b. cornea and its movement on the retina.
 - c. retina and contractions of the eye muscles.
 - d. retina and movement of the eyes.
 - e. two retinas.

Answer: A

Diff: 3

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Topic: How Do Biopsychologists Conduct Their Work?

Type: Factual

57. A volunteer with curarized eye muscles, who viewed a stationary target, saw the target move
- a. in the direction opposite to the direction in which his eyes drifted.
 - b. in the direction opposite to the direction in which he attempted to move his eyes.
 - c. in the same direction as he attempted to move his eyes.
 - d. rapidly back and forth.
 - e. rapidly up and down.

Answer: C

Diff: 3

Page Ref: 15

Topic: How Do Biopsychologists Conduct Their Work?

Type: Conceptual

Rationale: The student could answer correctly from rote memory or from a concept of the relation between eye movement and the visual perception of motion. A and B can be ruled out because "curarized eyes" do not move.

58. The principle that precedence should be given to the simplest interpretation of a behavior when more than one interpretation is possible is called
- a. the principle of precedence.
 - b. the principle of simplicity.
 - c. Delgado's canon.
 - d. the principle of convergence.
 - e. Morgan's canon.

Answer: E

Diff: 2

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Topic: Critical Thinking about Biopsychological Claims

Type: Factual

59. Morgan's canon is
- a. a weapon used by Morgan.
 - b. a surgical instrument used by Moniz.
 - c. a method used to tame bulls.
 - d. a brain operation.
 - e. none of the above

Answer: E

Diff: 2

Page Ref: 16

Topic: Critical Thinking about Biopsychological Claims

Type: Factual

Rationale: Morgan's canon is the scientific principle that precedence should be given to simple explanations.

60. The first prefrontal lobotomy performed on a human was
- a. performed by Lima.
 - b. based on the study of Becky.
 - c. performed with a leucotome.
 - d. all of the above
 - e. none of the above

Answer: D

Diff: 3

Page Ref: 17

Topic: Critical Thinking about Biopsychological Claims

Type: Factual

61. Which part of the brain is illustrated (the shaded area) in the accompanying drawing?



- a. prefrontal cortex
- b. occipital cortex
- c. corpus callosum
- d. caudate
- e. hypothalamus

Answer: A

Diff: 1

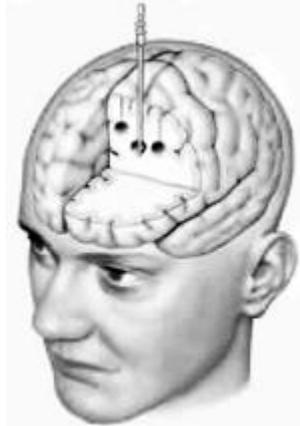
Page Ref: 17

Topic: Critical Thinking about Biopsychological Claims

Type: Factual

Rationale: Only A is clearly visible in this diagram.

62. Which prefrontal lobotomy procedure is illustrated by this drawing?



- a. the procedure later used by Freeman in Canada
- b. the procedure introduced by Moniz and Lima
- c. the improved prefrontal lobotomy procedure developed in Sweden
- d. the transorbital prefrontal lobotomy
- e. both B and C

Answer: B

Diff: 2

Page Ref: 17

Topic: Critical Thinking about Biopsychological Claims

Type: Factual

63. In 1949, Egas Moniz was awarded the Nobel Prize for

- a. demonstrating that the two cerebral hemispheres have different functions.
- b. writing *The Organization of Behavior*.
- c. research on the visual system.
- d. studies of hormone production by the brain.
- e. none of the above

Answer: E

Diff: 2

Page Ref: 17

Topic: Critical Thinking about Biopsychological Claims

Type: Factual

Rationale: He received the Nobel Prize for introducing frontal lobotomy as a treatment for mental illness.

64. This drawing illustrates



- a. Lima's original prefrontal lobotomy.
- b. Moniz's original prefrontal lobotomy.
- c. a transorbital prefrontal lobotomy.
- d. both A and B
- e. both B and C

Answer: C

Diff: 1

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Topic: Critical Thinking about Biopsychological Claims

Type: Factual

65. In the U.S. alone, more than _____ psychiatric patients have received a prefrontal lobotomy.

- a. 40
- b. 400
- c. 4,000
- d. 40,000
- e. 400,000

Answer: D

Diff: 2

Page Ref: 18

Topic: Critical Thinking about Biopsychological Claims

Type: Factual

FILL-IN-THE-BLANK QUESTIONS

1. According to the text, _____ played a key role in the emergence of the field of biopsychology by writing a book published in 1949.

Answer: Hebb

Diff: 2

Page Ref: 4

Topic: What Is Biopsychology?

Type: Factual

2. The study of nervous system disorders is called _____.

Answer: neuropathology

Diff: 3

Page Ref: 5

Topic: What Is Biopsychology?

Type: Factual

3. A _____-subjects design is an experimental design that involves testing a different group of subjects under each condition of the experiment.

Answer: between

Diff: 2

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Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

4. The _____ effect refers to the fact that a copulating male that becomes incapable of continuing to copulate with one sex partner can often recommence copulating with a new sex partner.

Answer: Coolidge

Diff: 2

Page Ref: 7

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

5. _____ research is research intended to bring about a direct benefit to humankind.

Answer: Applied

Diff: 1

Page Ref: 8

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Applied

6. The largest neural pathway that connects the left and right halves of the brain is called the _____.

Answer: corpus callosum

Diff: 3

Page Ref: 9

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Factual

7. Biopsychologists who use drugs to manipulate the brains and behavior of their subjects are called _____.

Answer: psychopharmacologists

Diff: 2

Page Ref: 10

Topic: What Are the Divisions of Biopsychology?

Type: Factual

8. _____ are the biopsychologists who focus on the study of human patients with brain damage.

Answer: Neuropsychologists

Diff: 2

Page Ref: 10

Topic: What Are the Divisions of Biopsychology?

Type: Factual

9. The EEG, or _____, is commonly recorded from the scalp.

Answer: electroencephalogram

Diff: 1

Page Ref: 11

Topic: What Are the Divisions of Biopsychology?

Type: Factual

10. Many psychophysiological measures are indicators of the activity of the _____ nervous system, which regulates the body's inner environment.

Answer: autonomic

Diff: 3

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Topic: What Are the Divisions of Biopsychology?

Type: Factual

11. The division of biopsychology that makes the greatest use of functional brain imaging is _____.

Answer: cognitive neuroscience

Diff: 2

Page Ref: 11

Topic: What Are the Divisions of Biopsychology?

Type: Factual

12. There is more to biopsychology than the study of the neural mechanisms of behavior. The division of biopsychology that best illustrates this point is _____.

Answer: comparative psychology

Diff: 3

Page Ref: 12

Topic: What Are the Divisions of Biopsychology?

Type: Factual

13. Korsakoff's syndrome is most prevalent in chronic _____.

Answer: alcoholics

Diff: 2

Page Ref: 14

Topic: How Do Biopsychologists Conduct Their Work?

Type: Factual

14. Korsakoff's syndrome is often associated with a _____ deficiency.

Answer: thiamine

Diff: 2

Page Ref: 14

Topic: How Do Biopsychologists Conduct Their Work?

Type: Factual

15. The general method that scientists use to study unobservable objects and events is called _____.

Answer: scientific inference

Diff: 2

Page Ref: 14

Topic: How Do Biopsychologists Conduct Their Work?

Type: Factual

16. Delgado's claim of a caudate taming center should have been dismissed immediately because it violated _____.

Answer: Morgan's canon

Diff: 3

Page Ref: 16

Topic: Critical Thinking about Biopsychological Claims

Type: Factual

17. _____ won a Nobel Prize for the development of the prefrontal lobotomy as a treatment for mental illness.

Answer: Moniz

Diff: 3

Page Ref: 17

Topic: Critical Thinking about Biopsychological Claims

Type: Factual

18. Transorbital lobotomies were conducted through the orbits, or _____.

Answer: eye sockets

Diff: 2

Page Ref: 17

Topic: Critical Thinking about Biopsychological Claims

Type: Factual

ESSAY AND OTHER MULTIPLE-MARK QUESTIONS

1. Discuss biopsychology's (behavioral neuroscience's) special role in neuroscientific research, and describe four other disciplines of neuroscience.

Answer:

20% for explaining that the study of behavior is biopsychology's special role

80% for naming and defining four other disciplines of neuroscience

Diff: 1

Page Ref: 4–5

Topic: What Is Biopsychology?

Type: Factual

2. Discuss the advantages and disadvantages of humans as subjects in biopsychological research.

Answer:

50% for the advantages: they have human brains; they are often less expensive; they can communicate verbally

50% for the disadvantages: their brains and behavior are particularly complex; there are strict ethical constraints; research that focuses totally on humans lacks a comparative perspective

Diff: 2

Page Ref: 5–6

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Conceptual

3. Compare experimental and quasiexperimental research.

Answer:

50% for defining and discussing both experiments and quasiexperiments

50% for contrasting experiments and quasiexperiments, emphasizing the fact that only experiments permit the study of causation

Diff: 3

Page Ref: 6–8

Topic: What Types of Research Characterize the Biopsychological Approach?

Type: Conceptual

4. Compare physiological psychology and neuropsychology, and discuss how these two approaches to biopsychological research complement one another.

Answer:

50% for describing physiological psychology and neuropsychology

50% for explaining how these two fields compensate for each other's weaknesses; students should discuss the concept of converging operations, and their answer could be strengthened by providing examples (e.g., research on memory or on Korsakoff's syndrome)

Diff: 3

Page Ref: 9–13

Topic: *What Are the Divisions of Biopsychology?*

Type: *Conceptual*

5. If you were to become a biopsychologist, in which division of biopsychology would you like to specialize and why?

Answer:

50% for knowledge of the division that a student selects

50% for effectively arguing that the choice is best for that student

Diff: 2

Page Ref: 2–18

Topic: *What Are the Divisions of Biopsychology?*

Type: *Conceptual*

6. Discuss the concept of converging operations, explain its critical role in biopsychological research, and give a specific example.

Answer:

40% for defining and discussing converging operations and how they work in biopsychology

60% for providing a specific example of converging operations in biopsychology (e.g., research on Korsakoff's syndrome)

Diff: 3

Page Ref: 13–14

Topic: *How Do Biopsychologists Conduct Their Work?*

Type: *Conceptual*

7. It is important to think critically about biopsychological claims. Discuss and provide an example.

Answer:

40% for describing the difficulties of interpreting biopsychological claims and discussing the importance of critical evaluation

60% for providing an example of misinterpretation in biopsychological research (e.g., prefrontal lobotomy or the caudate taming center) to argue for the importance of critical evaluation

Diff: 1

Page Ref: 2–18

Topic: Critical Thinking about Biopsychological Claims

Type: Conceptual

REVEL QUIZ QUESTIONS

EOM_1.1.1

Donald Hebb developed the first comprehensive theory of how

- a. complex psychological phenomena might be produced by brain activity.
- b. sexual activity might be produced by the sight of an arousing stimulus.
- c. emotions are produced by feedback from the facial muscles.
- d. to scientifically study behavior.

Answer: A

Learning Objective: LO 1.2 Discuss the origins of the field of biopsychology.

Topic: What Is Biopsychology?

Skill: Understand the Concepts

Difficulty: Easy

EOM_1.1.2

Hebb based his theory on

- a. experiments on humans.
- b. experiments on animals.
- c. clinical case studies.
- d. all of the above

Answer: D

Learning Objective: LO 1.2 Discuss the origins of the field of biopsychology.

Topic: What Is Biopsychology?

Skill: Remember the Facts

Difficulty: Easy

EOM_1.1.3

Psychology is the scientific study of

- a. biology.
- b. behavior.
- c. neuroplasticity.
- d. evolutionary biology.

Answer: B

Learning Objective: LO 1.1 Define and discuss what is meant by biopsychology.

Topic: What Is Biopsychology?

Skill: Remember the Facts

Difficulty: Easy

EOM_1.1.4

The field that focuses on the study of the structure of the nervous system is

- a. neuroanatomy.
- b. neurophysiology.
- c. neurochemistry.
- d. neuropathology.

Answer: A

Learning Objective: LO 1.3 List the six fields of neuroscience that are particularly relevant to biopsychological inquiry.

Topic: What Is Biopsychology?

Skill: Remember the Facts

Difficulty: Easy

EOM_1.1.5

The field that focuses on the study of the chemical bases of neural activity is

- a. neurophysiology.
- b. neuroanatomy.
- c. neurochemistry.
- d. neuropharmacology.

Answer: C

Learning Objective: LO 1.3 List the six fields of neuroscience that are particularly relevant to biopsychological inquiry.

Topic: What Is Biopsychology?

Skill: Remember the Facts

Difficulty: Easy

EOM_1.2.1

The study of biological processes by comparing different species is known as the

- a. Gorzalka approach.
- b. comparative approach.
- c. translational approach.
- d. between-subjects approach.

Answer: B

Learning Objective: LO 1.4 Compare the advantages and disadvantages of humans and nonhumans as subjects in biopsychological research.

Topic: What Types of Research Characterize the Biopsychological Approach?

Skill: Understand the Concepts

Difficulty: Easy

EOM_1.2.2

An experiment that tests a different group of subjects in each of the experimental conditions is said to use a(n)

- a. within-subjects design.
- b. experimental design.
- c. between-subjects design.
- d. independent variable approach.

Answer: C

Learning Objective: LO 1.5 Compare experiments, quasiexperimental studies, and case studies, emphasizing the study of causal effects.

Topic: What Types of Research Characterize the Biopsychological Approach?

Skill: Understand the Concepts

Difficulty: Moderate

EOM_1.2.3

Lester and Gorzalka developed a clever way to control for what confounded variable?

- a. sexual fatigue of males
- b. sexual vigor of males
- c. sexual fatigue of females
- d. sexual vigor of females

Answer: A

Learning Objective: LO 1.5 Compare experiments, quasiexperimental studies, and case studies, emphasizing the study of causal effects.

Topic: What Types of Research Characterize the Biopsychological Approach?

Skill: Understand the Concepts

Difficulty: Moderate

EOM_1.2.4

Quasiexperimental studies examine groups of subjects who have been

- a. exposed to only one level of the independent variable.
- b. randomly assigned to particular conditions.
- c. exposed to the conditions of interest in the real world.
- d. consuming a lot of alcohol.

Answer: C

Learning Objective: LO 1.5 Compare experiments, quasiexperimental studies, and case studies, emphasizing the study of causal effects.

Topic: What Types of Research Characterize the Biopsychological Approach?

Skill: Understand the Concepts

Difficulty: Moderate

EOM_1.2.5

Translational research

- a. aims to translate the findings of pure research into useful applications.
- b. aims to translate the findings published in one language into another language.
- c. studies the process of translation between languages.
- d. is a form of pure research.

Answer: A

Learning Objective: LO 1.6 Compare pure and applied research.

Topic: What Types of Research Characterize the Biopsychological Approach?

Skill: Understand the Concepts

Difficulty: Easy

EOM_1.3.1

Which division of biopsychology relies on functional brain imaging as its major research method?

- a. cognitive neuroscience
- b. neuropsychology
- c. psychophysiology
- d. behavioral neuroscience

Answer: A

Learning Objective: LO 1.11 Describe the division of biopsychology known as cognitive neuroscience.

Topic: What Are the Divisions of Biopsychology?

Skill: Remember the Facts

Difficulty: Easy

EOM_1.3.2

A biopsychologist who studies the memory deficits of human patients with brain damage would likely identify with the division of biopsychology termed

- a. cognitive neuroscience.
- b. neuropsychology.
- c. psychophysiology.
- d. behavioral neuroscience.

Answer: B

Learning Objective: LO 1.9 Describe the division of biopsychology known as neuropsychology.

Topic: What Are the Divisions of Biopsychology?

Skill: Remember the Facts

Difficulty: Easy

EOM_1.3.3

Biopsychologists who study the physiological correlates of psychological processes by recording physiological signals from the surface of the human body are often referred to as

- a. cognitive neuroscientists.
- b. neuropsychologists.
- c. psychophysicists.
- d. behavioral neuroscientists.

Answer: C

Learning Objective: LO 1.10 Describe the division of biopsychology known as psychophysiology.

Topic: What Are the Divisions of Biopsychology?

Skill: Remember the Facts

Difficulty: Easy

EOM_1.3.4

The research of _____ typically involves the direct manipulation or recording of the neural activity of laboratory animals by invasive surgical, electrical, or chemical means.

- a. cognitive neuroscientists
- b. neuropsychologists
- c. psychophysicists
- d. physiological psychologists

Answer: D

Learning Objective: LO 1.7 Describe the division of biopsychology known as physiological psychology.

Topic: What Are the Divisions of Biopsychology?

Skill: Remember the Facts

Difficulty: Moderate

EOM_1.3.5

The division of biopsychology that focuses on the effects of drugs on behavior is often referred to as _____.

- a. cognitive neuroscience
- b. neuropsychology
- c. psychophysiology
- d. psychopharmacology

Answer: D

Learning Objective: LO 1.8 Describe the division of biopsychology known as psychopharmacology.

Topic: What Are the Divisions of Biopsychology?

Skill: Remember the Facts

Difficulty: Easy

EOM_1.4.1

Korsakoff's syndrome is

- a. most commonly observed in males of Russian descent.
- b. caused in large part by thiamine deficiency.
- c. often associated with chronic alcoholism.
- d. both b and c

Answer: D

Learning Objective: LO 1.13 Explain how converging operations has contributed to the study of Korsakoff's syndrome.

Topic: How Do Biopsychologists Conduct Their Work?

Skill: Understand the Concepts

Difficulty: Moderate

EOM_1.4.2

Using different research approaches in such a way that the weaknesses of one approach are compensated for by the strengths of another is known as

- a. neuroscience.
- b. the scientific method.
- c. the biopsychological approach.
- d. converging operations.

Answer: D

Learning Objective: LO 1.13 Explain how converging operations has contributed to the study of Korsakoff's syndrome.

Topic: How Do Biopsychologists Conduct Their Work?

Skill: Understand the Concepts

Difficulty: Easy

EOM_1.4.3

The empirical method that biopsychologists and other scientists use to study the unobservable is

- a. between-subject designs.
- b. converging operations.
- c. lordosis.
- d. scientific inference.

Answer: D

Learning Objective: LO 1.14 Explain scientific inference with reference to research on eye movement and the visual perception of motion.

Topic: How Do Biopsychologists Conduct Their Work?

Skill: Remember the Facts

Difficulty: Easy

EOM_1.4.4

Under normal conditions, the brain mechanisms responsible for the perception of motion don't consider eye movements per se. Rather, they consider

- a. only those eye movements that are actively produced by neural signals from the brain to the finger muscles.
- b. only those eye movements that are actively produced by neural signals from the brain to the eye muscles.
- c. only unilateral eye movements.
- d. only bilateral eye movements.

Answer: B

Learning Objective: LO 1.14 Explain scientific inference with reference to research on eye movement and the visual perception of motion.

Topic: How Do Biopsychologists Conduct Their Work?

Skill: Understand the Concepts

Difficulty: Moderate

EOM_1.4.5

If you were to inject curare into your eye muscles and then try to move your eye, you would see the stationary visual world

- a. move in the direction opposite to your attempted eye movement.
- b. move in the same direction as your attempted eye movement.
- c. move from side to side.
- d. disappear.

Answer: B

Learning Objective: LO 1.14 Explain scientific inference with reference to research on eye movement and the visual perception of motion.

Topic: How Do Biopsychologists Conduct Their Work?

Skill: Apply What You Know

Difficulty: Moderate

EOM_1.5.1

According to the text, creative thinking about biopsychology is thinking

- a. in new ways.
- b. in productive ways.
- c. in ways consistent with the evidence rather than with widely accepted views.
- d. all of the above

Answer: D

Learning Objective: LO 1.15 Discuss Delgado's bull-ring demonstration, emphasizing its flawed interpretation.

Topic: Critical Thinking about Biopsychological Claims

Skill: Understand the Concepts

Difficulty: Easy

EOM_1.5.2

Who was awarded a Nobel Prize for the development of prefrontal lobotomy as a treatment for psychiatric disorders?

- a. Lima
- b. Valenstein
- c. Moniz
- d. Freeman

Answer: C

Learning Objective: LO 1.16 Describe the rise and fall of prefrontal lobotomy.

Topic: Critical Thinking about Biopsychological Claims

Skill: Remember the Facts

Difficulty: Easy

EOM_1.5.3

Who was responsible for popularizing the use of the transorbital lobotomy?

- a. Lima
- b. Valenstein
- c. Moniz
- d. Freeman

Answer: D

Learning Objective: LO 1.16 Describe the rise and fall of prefrontal lobotomy.

Topic: Critical Thinking about Biopsychological Claims

Skill: Remember the Facts

Difficulty: Easy

EOM_1.5.4

Who reported discovering a caudate taming center?

- a. Lima
- b. Delgado
- c. Moniz
- d. Freeman

Answer: B

Learning Objective: LO 1.15 Discuss Delgado's bull-ring demonstration, emphasizing its flawed interpretation.

Topic: Critical Thinking about Biopsychological Claims

Skill: Remember the Facts

Difficulty: Easy

EOM_1.5.5

A major weakness in the scientific case for the prefrontal lobotomy was that

- a. it was based on experimental research.
- b. it was based almost entirely on one case study.
- c. the effects of the prefrontal lobotomies were not carefully evaluated.
- d. both b and c

Answer: D

Learning Objective: LO 1.16 Describe the rise and fall of prefrontal lobotomy.

Topic: Critical Thinking about Biopsychological Claims

Skill: Understand the Concepts

Difficulty: Moderate

EOC_1.1

Biopsychology developed into a major neuroscientific discipline in

- a. the 18th century.
- b. the 19th century.
- c. the 20th century.
- d. the 21st century.

Answer: C

Learning Objective: LO 1.2 Discuss the origins of the field of biopsychology.

Topic: What Is Biopsychology?

Skill: Remember the Facts

Difficulty: Easy

EOC_1.2

Biopsychology is sometimes referred to as

- a. behavioral psychology.
- b. psychobiology.
- c. behavioral neuroplasticity.
- d. the evolutionary perspective.

Answer: B

Learning Objective: LO 1.1 Define and discuss what is meant by biopsychology.

Topic: What Is Biopsychology?

Skill: Remember the Facts

Difficulty: Easy

EOC_1.3

The field that focuses on the study of interactions between the nervous system and the endocrine system is

- a. neurophysiology.
- b. neuroendocrinology.
- c. neurochemistry.
- d. neuropharmacology.

Answer: B

Learning Objective: LO 1.3 List the six fields of neuroscience that are particularly relevant to biopsychological inquiry.

Topic: What Is Biopsychology?

Skill: Remember the Facts

Difficulty: Easy

EOC_1.4

The field that focuses on the study of the effects of drugs on neural activity is

- a. neurophysiology.
- b. neuroendocrinology.
- c. neurochemistry.
- d. neuropharmacology.

Answer: D

Learning Objective: LO 1.3 List the six fields of neuroscience that are particularly relevant to biopsychological inquiry.

Topic: What Is Biopsychology?

Skill: Remember the Facts

Difficulty: Easy

EOC_1.5

The field that focuses on the study of the functions and activities of the nervous system is

- a. neurophysiology.
- b. neuroendocrinology.
- c. neurochemistry.
- d. neuropharmacology.

Answer: A

Learning Objective: LO 1.3 List the six fields of neuroscience that are particularly relevant to biopsychological inquiry.

Topic: What Is Biopsychology?

Skill: Remember the Facts

Difficulty: Easy

EOC_1.6

The differences between the brains of humans and those of related species are more _____ than _____.

- a. qualitative; quantitative
- b. quantitative; qualitative
- c. superficial; real
- d. pronounced; once thought

Answer: B

Learning Objective: LO 1.4 Compare the advantages and disadvantages of humans and nonhumans as subjects in biopsychological research.

Topic: What Types of Research Characterize the Biopsychological Approach?

Skill: Understand the Concepts

Difficulty: Moderate

EOC_1.7

The experimenter assigns the subjects to conditions, administers the treatments, and measures the outcome in such a way that there is only one relevant difference between the conditions being compared. This difference between the conditions is called the

- a. confounded variable.
- b. variable of interest.
- c. independent variable.
- d. dependent variable.

Answer: C

Learning Objective: LO 1.5 Compare experiments, quasiexperimental studies, and case studies, emphasizing the study of causal effects.

Topic: What Types of Research Characterize the Biopsychological Approach?

Skill: Understand the Concepts

Difficulty: Moderate

EOC_1.8

Research that aims to translate the findings of pure research into useful applications for humankind is known as

- a. pure research.
- b. translational research.
- c. confounded research.
- d. practical research.

Answer: B

Learning Objective: LO 1.6 Compare pure and applied research.

Topic: What Types of Research Characterize the Biopsychological Approach?

Skill: Remember the Facts

Difficulty: Easy

EOC_1.9

There is a tradition of _____ in physiological psychology; the emphasis is usually on research that contributes to the development of theories of the neural control of behavior rather than on research of immediate practical benefit.

- a. applied research
- b. translational research
- c. pure research
- d. practical research

Answer: C

Learning Objective: LO 1.6 Compare pure and applied research.

Topic: What Types of Research Characterize the Biopsychological Approach?

Skill: Understand the Concepts

Difficulty: Easy

EOC_1.10

The early reports that the prefrontal lobotomy was therapeutically effective were based on the impressions of the individuals who were the least objective:

- a. Lima and Freeman.
- b. the patients.
- c. the physicians who had prescribed the surgery.
- d. the family members of the patients.

Answer: C

Learning Objective: LO 1.16 Describe the rise and fall of prefrontal lobotomy.

Topic: Critical Thinking about Biopsychological Claims

Skill: Understand the Concepts

Difficulty: Moderate

EOC_1.11

When there are several possible interpretations for a behavioral observation, the rule is to give precedence to the simplest one; this rule is called

- a. Occam's sword.
- b. Morgan's canon.
- c. Freeman's icepick.
- d. Hebb's postulate.

Answer: B

Learning Objective: LO 1.15 Discuss Delgado's bull-ring demonstration, emphasizing its flawed interpretation.

Topic: Critical Thinking about Biopsychological Claims

Skill: Understand the Concepts

Difficulty: Moderate

EOC_1.12

_____ is a division of biopsychology that investigates the neural bases of human cognition; its major method is functional brain imaging.

- a. Cognitive neuroscience
- b. Neuropsychology
- c. Psychophysiology
- d. Psychopharmacology

Answer: A

Learning Objective: LO 1.11 Describe the division of biopsychology known as cognitive neuroscience.

Topic: What Are the Divisions of Biopsychology?

Skill: Remember the Facts

Difficulty: Easy

EOC_1.13

_____ are biopsychologists who study the genetics, evolution, and adaptiveness of behavior, often by using the comparative approach.

- a. Cognitive neuroscientists
- b. Neuropsychologists
- c. Psychophysicologists
- d. Comparative psychologists

Answer: D

Learning Objective: LO 1.12 Describe the division of biopsychology known as comparative psychology.

Topic: What Are the Divisions of Biopsychology?

Skill: Remember the Facts

Difficulty: Easy

EOC_1.14

Thiamine-deficient rats display

- a. memory deficits.
- b. brain damage.
- c. excessive thirst.
- d. both a and b

Answer: D

Learning Objective: LO 1.13 Explain how converging operations has contributed to the study of Korsakoff's syndrome.

Topic: How Do Biopsychologists Conduct Their Work?

Skill: Understand the Concepts

Difficulty: Moderate

EOC_1.15

A strength of the neuropsychological approach is that _____, whereas a weakness of the neuropsychological approach is that _____.

- a. it focuses on nonhuman subjects; it focuses on pharmacological manipulations
- b. it focuses on nonhuman subjects; its focus on nonhuman subjects usually precludes experiments
- c. it focuses on human brain-damaged patients; its focus on human patients as subjects usually precludes experiments
- d. it deals directly with human patients; it focuses on drug treatments

Answer: C

Learning Objective: LO 1.13 Explain how converging operations has contributed to the study of Korsakoff's syndrome.

Topic: How Do Biopsychologists Conduct Their Work?

Skill: Apply What You Know

Difficulty: Moderate