

CHAPTER 2

EVOLUTION, GENETICS, AND EXPERIENCE: THINKING ABOUT THE BIOLOGY OF BEHAVIOR

Total Assessment Guide (T.A.G.)

Topic	Question Type	Remember the Facts	Understand the Concepts	Apply What You Know
Thinking about the Biology of Behavior: From Dichotomies to Interactions	Multiple Choice	1-11	12	
	Fill-In	1, 2		
	Essay		1, 2	
Human Evolution	Multiple Choice	13-23, 27-41, 43-47, 51-60	24-26, 42, 48-50	
	Fill-In	3-8		
	Essay	3	4	
Fundamental Genetics	Multiple Choice	61-90		
	Fill-In	9-15		
	Essay	5, 6		
Epigenetics of Behavioral Development: Interaction of Genetic Factors and Experience	Multiple Choice	91-101		
	Fill-In	16, 17		
	Essay	7		
Genetics of Human Psychological Differences	Multiple Choice	102-105, 107-110, 114, 115	106, 111-113, 116	
	Fill-In	18-20		
	Essay	8		

MULTIPLE CHOICE QUESTIONS

1. The general intellectual climate of a culture is referred to as its
- a. canon.
 - b. purpose statement.
 - c. zeitgeist.
 - d. converging operations.
 - e. dichotomy.

Answer: C

Difficulty Level: Easy

Topic: Introduction

Skill Level: Remember the Facts

Learning Objective: 2.1 Describe the origins of the physiological–psychological and nature–nurture ways of thinking.

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

2. When we ignore the subtleties and complexities of a phenomenon and instead think in “either-or” terms, we fall prey to developing explanations based on
- a. physiological processes.
 - b. Cartesian dualism.
 - c. dichotomous thinking.
 - d. inherited traits.
 - e. cultural traditions.

Answer: C

Difficulty Level: Moderate

Topic: The Origins of Dichotomous Thinking

Skill Level: Remember the Facts

Learning Objective: 2.1 Describe the origins of the physiological–psychological and nature–nurture ways of thinking.

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

3. The proposal that the human brain and human mind are separate entities was formalized in the 1600s by
- a. Donald Hebb.
 - b. John Locke.
 - c. Johan Fichte.
 - d. Rene Descartes.
 - e. Baruch Spinoza.

Answer: D

Difficulty Level: Moderate

Topic: The Origins of Dichotomous Thinking

Skill Level: Remember the Facts

Learning Objective: 2.1 Describe the origins of the physiological–psychological and nature–nurture ways of thinking.

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

4. Descartes’s philosophy is popularly known as
- a. monism.
 - b. behaviorism.
 - c. ethology.
 - d. mentalism.
 - e. dualism.

Answer: E

Difficulty Level: Moderate

Topic: The Origins of Dichotomous Thinking

Skill Level: Remember the Facts

Learning Objective: 2.1 Describe the origins of the physiological–psychological and nature–nurture ways of thinking.

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

5. Nature is to nurture as
- a. learning is to genetics.
 - b. behaviorism is to ethology.
 - c. genetics is to experience.
 - d. society is to tribalism.
 - e. church is to state.

Answer: C

Difficulty Level: Difficult

Topic: The Origins of Dichotomous Thinking

Skill Level: Remember the Facts

Learning Objective: 2.1 Describe the origins of the physiological–psychological and nature–nurture ways of thinking.

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

6. As experimental psychology was becoming established in North America, _____ was becoming the dominant approach to the study of behavior in Europe.
- a. behaviorism
 - b. ethology
 - c. etiology
 - d. ethnography
 - e. psychohistory

Answer: B

Difficulty Level: Difficult

Topic: The Origins of Dichotomous Thinking

Skill Level: Remember the Facts

Learning Objective: 2.1 Describe the origins of the physiological–psychological and nature–nurture ways of thinking.

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

7. Asomatognosia is a
- a. form of Korsakoff's syndrome.
 - b. modern formulation of dualistic philosophy.
 - c. learned response.
 - d. consequence of damage to the cerebellum.
 - e. deficiency in the awareness of parts of one's own body.

Answer: E

Difficulty Level: Easy

Topic: Problems with Thinking about the Biology of Behavior in Terms of Traditional Dichotomies

Skill Level: Remember the Facts

Learning Objective: 2.2 Explain why thinking about the biology of behavior in terms of traditional physiological–psychological and nature–nurture dichotomies is flawed.

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

8. Asomatognosia typically
- a. results from damage to the right frontal and parietal lobes.
 - b. affects the right side of the body.
 - c. results from damage to the occipital lobe.
 - d. affects both sides of the body.
 - e. results from damage to the left frontal and parietal lobes.

Answer: A

Difficulty Level: Moderate

Topic: Problems with Thinking about the Biology of Behavior in Terms of Traditional Dichotomies

Skill Level: Remember the Facts

Learning Objective: 2.2 Explain why thinking about the biology of behavior in terms of traditional physiological–psychological and nature–nurture dichotomies is flawed.

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

9. Evidence of a lack of complex self-awareness resulting from fairly simple organic brain damage illustrates the pitfalls of
- a. the physiological-or-psychological dichotomy.
 - b. using animal models to understand human behavior.
 - c. the “sink-or-swim” approach to thinking.
 - d. trying to understand brain mechanisms based on case studies.
 - e. the nature-or-nurture dichotomy.

Answer: A

Difficulty Level: Difficult

Topic: Problems with Thinking about the Biology of Behavior in Terms of Traditional Dichotomies

Skill Level: Remember the Facts

Learning Objective: 2.2 Explain why thinking about the biology of behavior in terms of traditional physiological–psychological and nature–nurture dichotomies is flawed.

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

10. One way to study self-awareness in nonhuman animals is to present them with
- a. a mirror image of themselves.
 - b. a photograph of themselves.
 - c. an experiment.
 - d. a same-age cage mate.
 - e. an unsolvable task.

Answer: A

Difficulty Level: Easy

Topic: Problems with Thinking about the Biology of Behavior in Terms of Traditional Dichotomies

Skill Level: Remember the Facts

Learning Objective: 2.2 Explain why thinking about the biology of behavior in terms of traditional physiological–psychological and nature–nurture dichotomies is flawed.

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

11. Which operation represents the proper way to consider the contributions of nature and nurture to human behavior?
- a. replacement
 - b. addition
 - c. division
 - d. interaction
 - e. subtraction

Answer: D

Difficulty Level: Difficult

Topic: Problems with Thinking about the Biology of Behavior in Terms of Traditional Dichotomies

Skill Level: Remember the Facts

Learning Objective: 2.2 Explain why thinking about the biology of behavior in terms of traditional physiological–psychological and nature–nurture dichotomies is flawed.

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

12. Ongoing behavior results from
- a. evolutionary patterns that shaped an entire species.
 - b. environmental forces that shaped the organism’s development.
 - c. the additive effects of nature and nurture.
 - d. the current characteristics of an organism in its current environment.
 - e. reflexive behaviors honed by genetics.

Answer: D

Difficulty Level: Difficult

Topic: Problems with Thinking about the Biology of Behavior in Terms of Traditional Dichotomies

Skill Level: Understand the Concepts

Learning Objective: 2.2 Explain why thinking about the biology of behavior in terms of traditional physiological–psychological and nature–nurture dichotomies is flawed.

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

13. The single most influential theory in the biological sciences was developed and elaborated by
- a. Karl Lashley.
 - b. Charles Darwin.
 - c. Johannes Müller.
 - d. Rene Descartes.
 - e. Corrado Fontana.

Answer: B

Difficulty Level: Easy

Topic: Darwin's Theory of Evolution

Skill Level: Remember the Facts

Learning Objective: 2.3 Describe the origins of evolutionary theory.

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

14. Charles Darwin's book *On the Origin of Species* was published in
- a. 1312.
 - b. 1562.
 - c. 1859.
 - d. 1920.
 - e. 1943.

Answer: C

Difficulty Level: Moderate

Topic: Darwin's Theory of Evolution

Skill Level: Remember the Facts

Learning Objective: 2.3 Describe the origins of evolutionary theory.

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

15. Darwin was not the first to suggest that species evolve, but he was the first to suggest
- the mechanisms by which evolution occurred.
 - that cultures rarely evolve.
 - a rebuttal that evolution occurs by genetics.
 - why mammals tend not to evolve.
 - how sexual activity limits the evolution of many species.

Answer: A

Difficulty Level: Moderate

Topic: Darwin's Theory of Evolution

Skill Level: Remember the Facts

Learning Objective: 2.3 Describe the origins of evolutionary theory.

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

16. Darwin proposed that evolution occurs through the process of
- random genetic mutations.
 - natural selection.
 - inter-species aggression.
 - artificial selective breeding.
 - the unfolding of a divine plan.

Answer: B

Difficulty Level: Moderate

Topic: Darwin's Theory of Evolution

Skill Level: Remember the Facts

Learning Objective: 2.3 Describe the origins of evolutionary theory.

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

17. Horse breeders have created faster horses through careful programs of
- a. natural selection.
 - b. gene splicing.
 - c. selective breeding.
 - d. domestication.
 - e. euthanasia.

Answer: C

Difficulty Level: Easy

Topic: Darwin's Theory of Evolution

Skill Level: Remember the Facts

Learning Objective: 2.3 Describe the origins of evolutionary theory.

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

18. *Fitness* in the Darwinian sense refers to an organism's ability to
- a. survive and contribute large numbers of fertile offspring to the next generation.
 - b. remain healthy during times of famine or contagion.
 - c. vanquish opponents in both intra- and inter-species rivalries.
 - d. survive when placed in an unfamiliar or inhospitable environment.
 - e. avoid predators by forming social bonds within a tribe or troop.

Answer: A

Difficulty Level: Moderate

Topic: Darwin's Theory of Evolution

Skill Level: Remember the Facts

Learning Objective: 2.3 Describe the origins of evolutionary theory.

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

19. Social dominance is an important factor in evolution because dominant males often
- a. kill their offspring after they are born.
 - b. become seriously injured.
 - c. produce more offspring than nondominant males.
 - d. migrate up and down within a dominance hierarchy.
 - e. .kill their mates after mating has terminated.

Answer: C

Difficulty Level: Moderate

Topic: Evolution and Behavior

Skill Level: Remember the Facts

Learning Objective: 2.4 Explain the evolutionary significance of social dominance and courtship displays.

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

20. Courtship displays are important evolutionary phenomena because they
- a. promote the evolution of new species.
 - b. promote extinction.
 - c. facilitate aggression.
 - d. encourage social dominance.
 - e. eliminate copulation.

Answer: A

Difficulty Level: Moderate

Topic: Evolution and Behavior

Skill Level: Remember the Facts

Learning Objective: 2.4 Explain the evolutionary significance of social dominance and courtship displays.

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

21. The conspecific of a vole is a
- a. rat.
 - b. monkey.
 - c. human.
 - d. mouse.
 - e. vole.

Answer: E

Difficulty Level: Easy

Topic: Evolution and Behavior

Skill Level: Remember the Facts

Topic: Evolution and Behavior

Learning Objective: 2.4 Explain the evolutionary significance of social dominance and courtship displays.

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

22. Evidence suggests that complex multicellular, water-dwelling organisms first appeared on earth
- a. 1 billion years ago.
 - b. 800 million years ago.
 - c. 10 million years ago.
 - d. 4 million years ago.
 - e. 2 million years ago.

Answer: B

Difficulty Level: Moderate

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

23. Animals with dorsal nerve cords are called

- a. phyla.
- b. chordates.
- c. vertebrates.
- d. mammals.
- e. amphibians.

Answer: B

Difficulty Level: Moderate

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

24. Based on current classification systems, how many classes of vertebrates are there?

- a. three
- b. eleven
- c. six
- d. nine
- e. seven

Answer: E

Difficulty Level: Moderate

Topic: Course of Human Evolution

Skill Level: Understand the Concepts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

25. Spinal bones that protect the dorsal nerve cord are called
- a. chordates.
 - b. vertebrae.
 - c. ancilla.
 - d. phyla.
 - e. vestiges.

Answer: B

Difficulty Level: Easy

Topic: Course of Human Evolution

Skill Level: Understand the Concepts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

26. Birds and reptiles are
- a. amphibians.
 - b. chordates.
 - c. invertebrates.
 - d. mammals.
 - e. the oldest examples of vertebrates.

Answer: B

Difficulty Level: Moderate

Topic: Course of Human Evolution

Skill Level: Understand the Concepts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

27. The first animals to venture out of the water were
- a. reptiles.
 - b. bony fishes.
 - c. amphibians.
 - d. Florida walking catfish.
 - e. gulper eels.

Answer: B

Difficulty Level: Difficult

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

28. Frogs, toads, and salamanders
- a. lack dorsal nerve cords.
 - b. are examples of reptiles.
 - c. ventured onto land 800 million years ago.
 - d. must live in water in their larval form.
 - e. are classified as invertebrates.

Answer: D

Difficulty Level: Difficult

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

29. Lizards, snakes, and turtles
- a. are reptiles.
 - b. are amphibians.
 - c. need to live in water as adults.
 - d. spend their larval stages in water
 - e. are prosimians.

Answer: A

Difficulty Level: Moderate

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

30. Reptiles evolved from

- a. amphibians.
- b. fish.
- c. bony fish.
- d. prosimians.
- e. snakes.

Answer: A

Difficulty Level: Moderate

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

31. Reptiles were the first animals to
- a. have back bones.
 - b. lay shell-covered eggs.
 - c. develop vertebrae.
 - d. be amphibious.
 - e. evolve as chordates.

Answer: B

Difficulty Level: Difficult

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

32. Mammals evolved from

- a. reptiles.
- b. fish.
- c. amphibians.
- d. prosimians.
- e. primates.

Answer: A

Difficulty Level: Moderate

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

33. One contemporary mammalian species that lays eggs is the
- a. duck-billed platypus.
 - b. tapir.
 - c. pangolin.
 - d. solenodon.
 - e. tarsier.

Answer: A

Difficulty Level: Moderate

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

34. Prosimians, hominins, and apes are all
- a. Old World monkeys.
 - b. New World monkeys.
 - c. langurs.
 - d. primates.
 - e. lorises.

Answer: D

Difficulty Level: Difficult

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

35. Unlike Old World monkeys, apes
- a. do not have tails.
 - b. have opposable thumbs that are not useful for precise manipulation.
 - c. do not have opposable thumbs.
 - d. cannot walk upright for short distances.
 - e. have tails.

Answer: A

Difficulty Level: Difficult

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

36. How many species of the hominin subgroup *Homo* currently exist?
- a. 1
 - b. 2
 - c. 4
 - d. 7
 - e. 8

Answer: A

Difficulty Level: Difficult

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

37. Modern humans belong to which species?

- a. *Homo neanderthalensis*
- b. *Australopithecus*
- c. primates
- d. *Homo sapiens*
- e. hominids

Answer: D

Difficulty Level: Difficult

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

38. Australopithecines, the first hominins, are thought to have evolved about _____ years ago.

- a. 100 million
- b. 150 million
- c. 90 million
- d. 4 million
- e. 100 thousand

Answer: D

Difficulty Level: Moderate

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

39. *Australo* means _____; *pithecus* means _____.

- a. African; gorilla
- b. southern; ape
- c. African; chimpanzee
- d. African; ape
- e. African; human

Answer: B

Difficulty Level: Difficult

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

40. Well-preserved 3.6-million-year-old footprints of 4-foot (1.3-meter) tall, small-brained _____ were discovered in African volcanic ash.

- a. apes
- b. *Homo sapiens*
- c. Neanderthals
- d. Australopithecines
- e. lemurs

Answer: D

Difficulty Level: Moderate

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

41. About 275,000 years ago, early hominins were gradually replaced in the African fossil record by
- a. Old World monkeys.
 - b. Neanderthals.
 - c. modern humans.
 - d. primates.
 - e. *Australopithecus*.

Answer: C

Difficulty Level: Moderate

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

42. Metaphorically, evolution should be conceptualized as a
- a. scale.
 - b. ladder.
 - c. book.
 - d. bush.
 - e. mirror.

Answer: D

Difficulty Level: Easy

Topic: Thinking about Human Evolution

Skill Level: Understand the Concepts

Learning Objective: 2.6 Describe nine commonly misunderstood points about evolution.

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

43. Which statement about hominins is correct?
- a. *Homo sapiens* are the last surviving example of primates.
 - b. On the evolutionary time scale, hominins have existed for a split second.
 - c. The evolutionary lineage from single-celled organisms to hominins has been clear and direct.
 - d. On the evolutionary time scale, hominins have dominated most of the history of mammals.
 - e. Humans represent the pinnacle of evolution.

Answer: B

Difficulty Level: Difficult

Topic: Thinking about Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.6 Describe nine commonly misunderstood points about evolution.

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

44. Sudden evolutionary changes are often triggered by
- a. selective breeding.
 - b. fossilization.
 - c. the establishment of societies.
 - d. sudden increases in brain size.
 - e. sudden changes in the environment.

Answer: E

Difficulty Level: Easy

Topic: Thinking about Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.6 Describe nine commonly misunderstood points about evolution.

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

45. Scientists who study fossils are called

- a. archaeologists.
- b. evolutionists.
- c. ethologists.
- d. geologists.
- e. paleontologists.

Answer: E

Difficulty Level: Moderate

Topic: Thinking about Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.6 Describe nine commonly misunderstood points about evolution.

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

46. Approximately what proportion of all species that ever existed on earth are still in existence?

- a. 61 percent
- b. 31 percent
- c. 7 percent
- d. 1 percent
- e. 19 percent

Answer: D

Difficulty Level: Moderate

Topic: Thinking about Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.6 Describe nine commonly misunderstood points about evolution.

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

47. Nonadaptive evolutionary changes are called

- a. spandrels.
- b. exaptations.
- c. homologous structures.
- d. analogous structures.
- e. mutations.

Answer: A

Difficulty Level: Difficult

Topic: Thinking about Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.6 Describe nine commonly misunderstood points about evolution.

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

48. Characteristics that evolved to perform one function and were later co-opted to perform another function are known as

- a. exaptations.
- b. spandrels.
- c. homologues.
- d. analogues.
- e. perturbations.

Answer: A

Difficulty Level: Moderate

Topic: Thinking about Human Evolution

Skill Level: Understand the Concepts

Learning Objective: 2.6 Describe nine commonly misunderstood points about evolution.

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

49. Convergent evolution produces structures that are _____ across species.
- a. identical
 - b. analogous
 - c. homologous
 - d. exaptations
 - e. nonadaptive

Answer: B

Difficulty Level: Difficult

Topic: Thinking about Human Evolution

Skill Level: Understand the Concepts

Learning Objective: 2.6 Describe nine commonly misunderstood points about evolution.

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

50. A bird's wing and a bee's wing are
- a. convolutions.
 - b. spandrels .
 - c. convergent structures.
 - d. homologous structures.
 - e. analogous structures.

Answer: E

Difficulty Level: Moderate

Topic: Thinking about Human Evolution

Skill Level: Understand the Concepts

Learning Objective: 2.6 Describe nine commonly misunderstood points about evolution.

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

51. Early research on the evolution of the human brain focused on
- a. its size.
 - b. its adaptive capacity.
 - c. the thalamus.
 - d. its social significance.
 - e. its chemistry.

Answer: A

Difficulty Level: Easy

Topic: Evolution of the Human Brain

Skill Level: Remember the Facts

Learning Objective: 2.7 Describe how research on the evolution of the human brain has changed over time.

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

52. How is brain size related to intellectual capacity?
- a. As brain size increases, intelligence increases, in a linear fashion.
 - b. Species with smaller brains tend to show greater intellectual achievement.
 - c. Species with brains weighing more than 10,000 grams, on average, have the highest intellectual capacity.
 - d. Across species, brain size and intellectual capacity show a random pattern of association.
 - e. Having the biggest brain does not confer having the greatest intellectual capacity.

Answer: E

Difficulty Level: Moderate

Topic: Evolution of the Human Brain

Skill Level: Remember the Facts

Learning Objective: 2.7 Describe how research on the evolution of the human brain has changed over time.

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

53. Modern adult human brains vary in size from about
- a. 1,000 to 2,000 grams.
 - b. 10,000 to 20,000 grams.
 - c. 1,440 to 1,500 grams.
 - d. 1,300 to 1,400 grams.
 - e. 1,350 to 1,360 grams.

Answer: A

Difficulty Level: Difficult

Topic: Evolution of the Human Brain

Skill Level: Remember the Facts

Learning Objective: 2.7 Describe how research on the evolution of the human brain has changed over time.

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

54. Humans are surpassed by shrews when brain size is measured as
- a. brain weight.
 - b. brain volume.
 - c. neocortex volume.
 - d. cerebellum volume.
 - e. brain weight expressed as a percentage of total body weight.

Answer: E

Difficulty Level: Moderate

Topic: Evolution of the Human Brain

Skill Level: Remember the Facts

Learning Objective: 2.7 Describe how research on the evolution of the human brain has changed over time.

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

55. The study of brain evolution benefits primarily from comparisons of
- a. absolute brain size.
 - b. species longevity.
 - c. the evolution of different brain regions.
 - d. average brain weight.
 - e. brain size relative to body weight.

Answer: C

Difficulty Level: Moderate

Topic: Evolution of the Human Brain

Skill Level: Remember the Facts

Learning Objective: 2.7 Describe how research on the evolution of the human brain has changed over time.

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

56. In general, the brain stem regulates
- a. thinking and learning.
 - b. memory.
 - c. emotional responses in social situations.
 - d. reflex activities critical for survival.
 - e. vision and hearing.

Answer: D

Difficulty Level: Easy

Topic: Evolution of the Human Brain

Skill Level: Remember the Facts

Learning Objective: 2.7 Describe how research on the evolution of the human brain has changed over time.

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

57. Most of the evolutionary increases in the size of the human brain have occurred in the
- a. occipital lobes.
 - b. cerebrum.
 - c. thalamus.
 - d. brain stem.
 - e. parietal lobes.

Answer: B

Difficulty Level: Easy

Topic: Evolution of the Human Brain

Skill Level: Remember the Facts

Learning Objective: 2.7 Describe how research on the evolution of the human brain has changed over time.

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

58. Across the span of human evolution, the size of the brain across the species has
- a. stayed about the same.
 - b. both been larger and smaller than the current average.
 - c. increased.
 - d. decreased notably within the last 100,000 years.
 - e. decreased slightly.

Answer: C

Difficulty Level: Moderate

Topic: Evolution of the Human Brain

Skill Level: Remember the Facts

Learning Objective: 2.7 Describe how research on the evolution of the human brain has changed over time.

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

59. The net effect of having convolutions in the human cerebral cortex is that
- a. they make it less likely for premature cell death to occur in the brain.
 - b. they help enlarge the surface area of the cortex.
 - c. neural transmission of information is increased tenfold.
 - d. the overall size of the brain relative to the skull is increased.
 - e. across evolutionary time they will eventually produce a uniformly smooth surface in the brain.

Answer: B

Difficulty Level: Moderate

Topic: Evolution of the Human Brain

Skill Level: Remember the Facts

Learning Objective: 2.7 Describe how research on the evolution of the human brain has changed over time.

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

60. Neural structures in the brains of one species
- a. can be used to estimate the intellectual capacity of specific individual members of that species.
 - b. can usually be found in the same locations in the brains of related species.
 - c. tend to be unique to members of that species.
 - d. are uniformly found across all species.
 - e. tend to be connected in different ways across species.

Answer: B

Difficulty Level: Moderate

Topic: Evolution of the Human Brain

Skill Level: Remember the Facts

Learning Objective: 2.7 Describe how research on the evolution of the human brain has changed over time.

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

61. Comparatively, bass have a larger _____ than _____.
- a. brain stem; cerebrum
 - b. evolutionary future; evolutionary past
 - c. brain size; body size
 - d. evolutionary past; evolutionary future
 - e. cerebrum; brain stem

Answer: A

Difficulty Level: Moderate

Topic: Evolution of the Human Brain

Skill Level: Remember the Facts

Learning Objective: 2.7 Describe how research on the evolution of the human brain has changed over time.

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

62. Gregor Mendel

- a. studied dichotomous pea plant traits.
- b. proposed the idea of natural selection.
- c. collaborated with Charles Darwin to formulate the theory of evolution.
- d. studied hybridized plants from local farmers.
- e. revolutionized the study of biology during his lifetime.

Answer: A

Difficulty Level: Easy

Topic: Mendelian Genetics

Skill Level: Remember the Facts

Learning Objective: 2.8 Explain how Mendel's work with pea plants has informed us about the mechanisms of inheritance.

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

63. Mendel's experiments challenged the central premise upon which previous ideas about inheritance had rested. This was the premise that

- a. there is only one gene for each trait.
- b. there are two genes for each observable trait.
- c. offspring can inherit only those traits that are displayed by their parents.
- d. white seeds are dominant among pea plants.
- e. some traits are dominant and some are recessive.

Answer: C

Difficulty Level: Moderate

Topic: Mendelian Genetics

Skill Level: Remember the Facts

Learning Objective: 2.8 Explain how Mendel's work with pea plants has informed us about the mechanisms of inheritance.

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

64. An organism's observable traits are referred to as its
- a. genotype.
 - b. phenotype.
 - c. dominant traits.
 - d. recessive traits.
 - e. phylum.

Answer: B

Difficulty Level: Moderate

Topic: Mendelian Genetics

Skill Level: Remember the Facts

Learning Objective: 2.8 Explain how Mendel's work with pea plants has informed us about the mechanisms of inheritance.

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

65. The two genes, one on each chromosome of a pair, that control the same trait are called
- a. dominants.
 - b. phenotypes.
 - c. genotypes.
 - d. gametes.
 - e. alleles.

Answer: E

Difficulty Level: Moderate

Topic: Mendelian Genetics

Skill Level: Remember the Facts

Learning Objective: 2.8 Explain how Mendel's work with pea plants has informed us about the mechanisms of inheritance.

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

66. Individuals who possess two identical genes for a particular trait
- a. are homozygous for that trait.
 - b. are heterozygous for that trait.
 - c. cannot have offspring of the same phenotype for that trait.
 - d. cannot have offspring of the same genotype for that trait.
 - e. are evolutionarily disadvantaged.

Answer: A

Difficulty Level: Moderate

Topic: Mendelian Genetics

Skill Level: Remember the Facts

Learning Objective: 2.8 Explain how Mendel's work with pea plants has informed us about the mechanisms of inheritance.

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

67. If an individual has a recessive phenotype for a particular trait, it can be concluded that
- a. both parents also had a recessive phenotype for that trait.
 - b. only one parent had a recessive phenotype for that trait.
 - c. both parents were homozygous for the dominant gene for that trait.
 - d. each parent had at least one recessive gene for that trait.
 - e. a genetic mutation has occurred.

Answer: D

Difficulty Level: Difficult

Topic: Mendelian Genetics

Skill Level: Remember the Facts

Learning Objective: 2.8 Explain how Mendel's work with pea plants has informed us about the mechanisms of inheritance.

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

68. In each cell of the human body, there are normally
- a. 21 chromosomes.
 - b. 21 pairs of chromosomes.
 - c. 23 genes.
 - d. 23 chromosomes.
 - e. 23 pairs of chromosomes.

Answer: E

Difficulty Level: Easy

Topic: Chromosomes

Skill Level: Remember the Facts

Learning Objective: 2.9 Understand the structure and function of chromosomes.

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

69. Gametes are produced by
- a. mitosis.
 - b. mitotic cell division.
 - c. meiosis.
 - d. copulation.
 - e. fertilization.

Answer: C

Difficulty Level: Moderate

Topic: Chromosomes

Skill Level: Remember the Facts

Learning Objective: 2.9 Understand the structure and function of chromosomes.

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

70. Just prior to mitotic cell division, the number of chromosomes in the cell
- a. doubles.
 - b. is reduced by half.
 - c. doubles twice.
 - d. stays the same.
 - e. is increased by 50 percent.

Answer: A

Difficulty Level: Moderate

Topic: Chromosomes

Skill Level: Remember the Facts

Learning Objective: 2.9 Understand the structure and function of chromosomes.

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

71. The “letters” of the genetic code (A, G, C, T) are
- a. deoxyribose bases.
 - b. phosphates.
 - c. nucleotide bases.
 - d. amino acids.
 - e. peptides.

Answer: C

Difficulty Level: Easy

Topic: Chromosomes

Skill Level: Remember the Facts

Learning Objective: 2.9 Understand the structure and function of chromosomes.

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

72. How many different nucleotide bases are there in DNA?

- a. 1
- b. 2
- c. 4
- d. 7
- e. 23

Answer: C

Difficulty Level: Easy

Topic: Chromosomes

Skill Level: Remember the Facts

Learning Objective: 2.9 Understand the structure and function of chromosomes.

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

73. On the DNA molecule, cytosine binds with

- a. guanine.
- b. adenine.
- c. thymine.
- d. thiamine.
- e. uracil.

Answer: A

Difficulty Level: Moderate

Topic: Chromosomes

Skill Level: Remember the Facts

Learning Objective: 2.9 Understand the structure and function of chromosomes.

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

74. In Down syndrome, there is
- a. no guanine present.
 - b. no adenine to bind with guanine.
 - c. no thymine present.
 - d. no cytosine to bind with adenine.
 - e. an extra chromosome in each cell.

Answer: E

Difficulty Level: Moderate

Topic: Chromosomes

Skill Level: Remember the Facts

Learning Objective: 2.9 Understand the structure and function of chromosomes.

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

75. Accidental alteration in individual genes during replication is called
- a. crossing over.
 - b. translation.
 - c. linkage.
 - d. mutation.
 - e. self-duplication.

Answer: D

Difficulty Level: Moderate

Topic: Chromosomes

Skill Level: Remember the Facts

Learning Objective: 2.9 Understand the structure and function of chromosomes.

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

76. Which of the following options describes the key aspect of chromosomal function in which exposed nucleotide bases attract their complementary bases?
- a. the process of mitosis.
 - b. the process of meiosis.
 - c. the replication of a DNA molecule.
 - d. the replication of an RNA molecule.
 - e. the creation of an enhancer.

Answer: C

Difficulty Level: Moderate

Topic: Chromosomes

Skill Level: Remember the Facts

Learning Objective: 2.9 Understand the structure and function of chromosomes.

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

77. Female mammals have
- a. only one X chromosome.
 - b. only one Y chromosome.
 - c. two X chromosomes.
 - d. two Y chromosomes.
 - e. two X and one Y chromosomes.

Answer: C

Difficulty Level: Easy

Topic: Chromosomes

Skill Level: Remember the Facts

Learning Objective: 2.9 Understand the structure and function of chromosomes.

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

78. Color blindness occurs more frequently in males than in females because it is
- a. a dominant trait.
 - b. rare.
 - c. quite common in the general population.
 - d. a recessive sex-linked trait.
 - e. an inherited mutation.

Answer: D

Difficulty Level: Difficult

Topic: Chromosomes

Skill Level: Remember the Facts

Learning Objective: 2.9 Understand the structure and function of chromosomes.

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

79. Sex-linked traits that are controlled by dominant genes occur more frequently in
- a. females.
 - b. males.
 - c. neural disorders.
 - d. XY individuals.
 - e. XXY genetic patterns.

Answer: A

Difficulty Level: Difficult

Topic: Chromosomes

Skill Level: Remember the Facts

Learning Objective: 2.9 Understand the structure and function of chromosomes.

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

80. A short segment of DNA that determines the rate at which a protein will be synthesized by a particular structural gene is called a(n)
- a. ribosome.
 - b. enhancer.
 - c. codon.
 - d. nucleotide.
 - e. codon segment.

Answer: B

Difficulty Level: Moderate

Topic: Genetic Code and Gene Expression

Skill Level: Remember the Facts

Learning Objective: 2.10 Describe the process of gene expression.

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

81. Proteins that bind to DNA and increase gene expression are called
- a. activators.
 - b. autosomes.
 - c. enhancers.
 - d. repressors.
 - e. mutations.

Answer: A

Difficulty Level: Easy

Topic: Genetic Code and Gene Expression

Skill Level: Remember the Facts

Learning Objective: 2.10 Describe the process of gene expression.

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

82. DNA is to RNA as
- a. guanine is to uracil.
 - b. thymine is to cytosine.
 - c. uracil is to thymine.
 - d. thymine is to uracil.
 - e. uracil is to guanine.

Answer: D

Difficulty Level: Difficult

Topic: Genetic Code and Gene Expression

Skill Level: Remember the Facts

Learning Objective: 2.10 Describe the process of gene expression.

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

83. Each codon on a strand of messenger RNA
- a. represents a single base on the messenger RNA molecule.
 - b. instructs the ribosome to add one amino acid from the cytoplasm to the growing protein chain.
 - c. contains all of the information necessary to synthesize a complete protein.
 - d. is responsible for suppressing the effects of recessive genes.
 - e. contains 20 amino acids.

Answer: B

Difficulty Level: Moderate

Topic: Genetic Code and Gene Expression

Skill Level: Remember the Facts

Learning Objective: 2.10 Describe the process of gene expression.

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

84. During protein synthesis, each amino acid is carried to the ribosome by
- a. a transfer RNA molecule.
 - b. a codon.
 - c. a messenger RNA molecule.
 - d. an operator gene.
 - e. a mitochondrion.

Answer: A

Difficulty Level: Moderate

Topic: Genetic Code and Gene Expression

Skill Level: Remember the Facts

Learning Objective: 2.10 Describe the process of gene expression.

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

85. A surprising finding of the Human Genome Project is that humans have
- a. 7-base codons.
 - b. many mutations.
 - c. relatively few protein-coding genes.
 - d. far fewer genes than do mice.
 - e. more genes than corn has.

Answer: C

Difficulty Level: Moderate

Topic: Human Genome Project

Skill Level: Remember the Facts

Learning Objective: 2.11 Discuss several ways in which modern advances have changed our understanding of genetic processes.

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

86. Epigenetic investigations are generally focused on
- a. producing high-resolution 3D images of known genetic processes.
 - b. the proportion of variance in behavior due to genetics.
 - c. identifying pharmacological treatments for genetic disorders.
 - d. the proportion of variance in behavior due to environmental factors.
 - e. mechanisms of inheritance other than gene expression.

Answer: E

Difficulty Level: Difficult

Topic: Modern Genetics: Growth of Epigenetics

Skill Level: Remember the Facts

Learning Objective: 2.12 Define epigenetics, and explain how it has transformed our understanding of genetics.

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

87. The study of all mechanisms of inheritance other than those mediated by changes to the gene sequence of DNA is called
- a. Mendelian genetics.
 - b. the Human Genome Project.
 - c. pseudo-genetics.
 - d. epigenetics.
 - e. phylogenetics.

Answer: D

Difficulty Level: Moderate

Topic: Modern Genetics: Growth of Epigenetics

Skill Level: Remember the Facts

Learning Objective: 2.12 Define epigenetics, and explain how it has transformed our understanding of genetics.

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

88. Widely studied epigenetic mechanisms include

- a. crossing over.
- b. RNA methylation.
- c. histone remodeling.
- d. enhancer suppression.
- e. engineered mutations.

Answer: C

Difficulty Level: Moderate

Topic: Modern Genetics: Growth of Epigenetics

Skill Level: Remember the Facts

Learning Objective: 2.12 Define epigenetics, and explain how it has transformed our understanding of genetics.

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

89. DNA methylation has the effect of

- a. changing the shape of histones.
- b. only increasing gene expression.
- c. decreasing or increasing gene expression.
- d. only decreasing gene expression.
- e. scouring “junk DNA.”

Answer: C

Difficulty Level: Difficult

Topic: Modern Genetics: Growth of Epigenetics

Skill Level: Remember the Facts

Learning Objective: 2.12 Define epigenetics, and explain how it has transformed our understanding of genetics.

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

90. Epitranscriptomes are catalogues of
- messenger DNA during the process of methylation.
 - modifications of RNA that have altered the RNA base sequence.
 - histone rearrangement in genetic disorders.
 - modifications of RNA that do not affect the RNA base sequence.
 - messenger RNA across generations.

Answer: D

Difficulty Level: Moderate

Topic: Modern Genetics: Growth of Epigenetics

Skill Level: Remember the Facts

Learning Objective: 2.12 Define epigenetics, and explain how it has transformed our understanding of genetics.

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

91. The psychologist Robert C. Tryon is famous for
- twin studies of intelligence enhanced by enriched learning environments.
 - selectively breeding “maze-bright” and “maze-dull” strains of rats.
 - studies of genetic mutations among successive generations of inbreeding humans.
 - research on the brain structures involved in producing bird song.
 - the discovery phenylketonuria.

Answer: B

Difficulty Level: Moderate

Topic: Selective Breeding of “Maze-Bright” and “Maze-Dull” Rats

Skill Level: Remember the Facts

Learning Objective: 2.13 Discuss what insights into the genetics of behavior were gained from early research on selective breeding.

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

92. In a study published in 1949, Lloyd V. Searle found that, in comparison to maze-dull rats, maze-bright rats were
- a. not generally superior in intellectual ability.
 - b. likely to harbor harmful sex-linked traits.
 - c. more fearful.
 - d. plumper and longer.
 - e. slower to approach the experimenter when feeding.

Answer: A

Difficulty Level: Difficult

Topic: Selective Breeding of “Maze-Bright” and “Maze-Dull” Rats

Skill Level: Remember the Facts

Learning Objective: 2.13 Discuss what insights into the genetics of behavior were gained from early research on selective breeding.

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

93. In a study published in 1958, R. M. Cooper and John P. Zubek found that maze-bright rats made fewer maze errors than maze-dull rats only if both groups had
- a. been reared in an impoverished laboratory environment.
 - b. been reared in an enriched laboratory environment.
 - c. been equated for emotionality.
 - d. received tranquilizers.
 - e. been pretrained.

Answer: A

Difficulty Level: Difficult

Topic: Selective Breeding of “Maze-Bright” and “Maze-Dull” Rats

Skill Level: Remember the Facts

Learning Objective: 2.13 Discuss what insights into the genetics of behavior were gained from early research on selective breeding.

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

94. Which condition was discovered by Asbjørn Følling, a Norwegian dentist?

- a. Prader-Willi syndrome
- b. Korsakoff's syndrome
- c. phenylketonuria
- d. Klinefelter syndrome
- e. Down syndrome

Answer: C

Difficulty Level: Moderate

Topic: Phenylketonuria: A Single-Gene Metabolic Disorder

Skill Level: Remember the Facts

Learning Objective: 2.14 Explain how classic research on phenylketonuria (PKU) has informed our understanding of the genetics of behavior.

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

95. People with phenylketonuria have high levels of urinary

- a. PKU.
- b. phenylpyruvic acid.
- c. phenylalanine hydroxylase.
- d. tyrosine.
- e. ontogeny.

Answer: B

Difficulty Level: Moderate

Topic: Phenylketonuria: A Single-Gene Metabolic Disorder

Skill Level: Remember the Facts

Learning Objective: 2.14 Explain how classic research on phenylketonuria (PKU) has informed our understanding of the genetics of behavior.

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

96. Phenylketonuria (PKU) is transmitted by a
- a. single gene mutation.
 - b. pair of dominant genes.
 - c. dominant gene mutation.
 - d. triad of recessive genes.
 - e. single extra 23rd chromosome.

Answer: A

Difficulty Level: Moderate

Topic: Phenylketonuria: A Single-Gene Metabolic Disorder

Skill Level: Remember the Facts

Learning Objective: 2.14 Explain how classic research on phenylketonuria (PKU) has informed our understanding of the genetics of behavior.

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

97. People with phenylketonuria (PKU) lack the enzyme
- a. that converts phenylalanine to tyrosine.
 - b. phenylpyruvic acid.
 - c. that activates cytosine.
 - d. YYZ-Ω.
 - e. that suppresses guanine.

Answer: A

Difficulty Level: Difficult

Topic: Phenylketonuria: A Single-Gene Metabolic Disorder

Skill Level: Remember the Facts

Learning Objective: 2.14 Explain how classic research on phenylketonuria (PKU) has informed our understanding of the genetics of behavior.

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

98. In many modern hospitals, the blood of newborn infants is routinely screened for high levels of
- a. phenylalanine.
 - b. phenylpyruvic acid.
 - c. phenylalanine hydroxylase.
 - d. phenylbenzadrine.
 - e. phenobarbitol.

Answer: A

Difficulty Level: Difficult

Topic: Phenylketonuria: A Single-Gene Metabolic Disorder

Skill Level: Remember the Facts

Learning Objective: 2.14 Explain how classic research on phenylketonuria (PKU) has informed our understanding of the genetics of behavior.

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

99. The sensitive period for the development of a particular trait is the period
- a. of intense pain experienced by both mother and child during childbirth.
 - b. of sexual receptivity during an act of copulation.
 - c. of fertility that occurs at the onset of puberty in humans.
 - d. of neural regeneration that occurs when epigenetic processes influence specific brain structures.
 - e. during which a particular experience must occur to have a major effect on the development of the trait.

Answer: E

Difficulty Level: Easy

Topic: Phenylketonuria: A Single-Gene Metabolic Disorder

Skill Level: Remember the Facts

Learning Objective: 2.14 Explain how classic research on phenylketonuria (PKU) has informed our understanding of the genetics of behavior.

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

100. The sensitive period for phenylketonuria (PKU) is the early period during which
- a. identified sufferers are fed phenylalanine-enriched diets.
 - b. excessive phenylalanine has substantial effects on neural development.
 - c. the symptoms of PKU are most severe.
 - d. emergency hospitalization is required.
 - e. amino acids are being produced in their greatest number.

Answer: B

Difficulty Level: Difficult

Topic: Phenylketonuria: A Single-Gene Metabolic Disorder

Skill Level: Remember the Facts

Learning Objective: 2.14 Explain how classic research on phenylketonuria (PKU) has informed our understanding of the genetics of behavior.

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

101. To reduce the possibility of developing intellectual disabilities, people diagnosed with PKU should be given a phenylalanine-restricted diet during
- a. adulthood.
 - b. the prenatal period.
 - c. their entire lifespan.
 - d. the first few weeks of life.
 - e. adolescence.

Answer: D

Difficulty Level: Moderate

Topic: Phenylketonuria: A Single-Gene Metabolic Disorder

Skill Level: Remember the Facts

Learning Objective: 2.14 Explain how classic research on phenylketonuria (PKU) has informed our understanding of the genetics of behavior.

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

102. The effects of genes and experience are inseparable in _____ and separable in _____.
- a. the development of differences among individuals; the development of individuals
 - b. the prenatal environment; living organisms
 - c. monozygotic twins; dizygotic twins
 - d. living organisms; the prenatal environment
 - e. the development of individuals; the development of differences among individuals

Answer: E

Difficulty Level: Difficult

Topic: Development of Individuals versus Development of Differences among Individuals

Skill Level: Remember the Facts

Learning Objective: 2.15 Explain why it is important to distinguish between the development of individuals and the development of individual differences.

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

103. Understanding the relative contributions of genes and experience to differences in human development is usually accomplished by
- a. systematically altering the environment in which a child is reared.
 - b. administering surveys to large groups of people.
 - c. long-term studies of multiple generations within a single family.
 - d. studying pairs of monozygotic and dizygotic twins.
 - e. experimentally manipulating genetic material.

Answer: D

Difficulty Level: Moderate

Topic: Development of Individuals versus Development of Differences among Individuals

Skill Level: Remember the Facts

Learning Objective: 2.15 Explain why it is important to distinguish between the development of individuals and the development of individual differences.

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

104. Which pair of people developed from a single zygote?

- a. Sadie and Kadie, sibling sisters
- b. Barry and Larry, dizygotic twins
- c. Chester and Lester, monozygotic twins
- d. Adele and Manuel, dizygotic twins
- e. Farley and Charlie, sibling brothers

Answer: C

Difficulty Level: Easy

Topic: Development of Individuals versus Development of Differences among Individuals

Skill Level: Remember the Facts

Learning Objective: 2.15 Explain why it is important to distinguish between the development of individuals and the development of individual differences.

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

105. Similar is to dissimilar as

- a. dizygotic is to monozygotic.
- b. polyzygotic is to monozygotic.
- c. two is to one.
- d. culture is to experience.
- e. monozygotic is to dizygotic.

Answer: E

Difficulty Level: Moderate

Topic: Development of Individuals versus Development of Differences among Individuals

Skill Level: Remember the Facts

Learning Objective: 2.15 Explain why it is important to distinguish between the development of individuals and the development of individual differences.

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

106. Why have many eminent geneticists argued that no further heritability estimate studies need to be conducted?
- a. Studies to date show remarkable consistency in heritability estimates across a range of dimensions; there is little new to be learned.
 - b. The concept is so misunderstood among the general public that further investigations can only add to that confusion.
 - c. Evidence of fraud in early heritability estimate studies has tainted this area of scientific investigation.
 - d. The lack of consistency in heritability estimates across studies demonstrates that it is a flawed concept to be abandoned.
 - e. Political pressures to identify environmental causes of behaviors make funding of future estimate studies unlikely

Answer: A

Difficulty Level: Difficult

Topic: Heritability Estimates: Minnesota Study of Twins Reared Apart

Skill Level: Understand the Concepts

Learning Objective: 2.16 Explain heritability estimates and how they are commonly misinterpreted.

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

107. Which statement about heritability estimates is correct?
- a. Across studies, most heritability estimates for psychological dimensions range between 60 and 90 percent.
 - b. The same participant in different studies should show the same heritability estimate (about 25 percent) for any given trait.
 - c. The magnitude of a study's heritability estimates cannot necessarily be generalized to other groups or other situations.
 - d. They are usually calculated by studying the genetic patterns within a group across multiple generations.
 - e. A heritability estimate forms the basis for understanding individual differences among participants across different studies.

Answer: C

Difficulty Level: Moderate

Topic: Heritability Estimates: Minnesota Study of Twins Reared Apart

Skill Level: Remember the Facts

Learning Objective: 2.16 Explain heritability estimates and how they are commonly misinterpreted.

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

108. Heritability estimates tell us about _____ differences among the people being studied.
- a. future
 - b. phenotypic
 - c. individual
 - d. genotypic
 - e. personality

Answer: B

Difficulty Level: Moderate

Topic: Heritability Estimates: Minnesota Study of Twins Reared Apart

Skill Level: Remember the Facts

Learning Objective: 2.16 Explain heritability estimates and how they are commonly misinterpreted.

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

109. Carefully controlled studies of twins generally find that
- a. adult monozygotic twins are substantially more similar to one another on most dimensions than are adult dizygotic twins, but only if monozygotic twins were raised in the same family environment.
 - b. monozygotic and dizygotic twins tend to show the same degree of similarity in their twin pairs for intelligence and cognitive speed, but not for most personality traits.
 - c. adult monozygotic twins are substantially more similar to one another on most dimensions than are adult dizygotic twins, but only when dizygotic twins were raised in different family environments.
 - d. dizygotic twins raised in the same environment are more likely to resemble one another on personality dimensions, whereas monozygotic twins reared apart are more similar in their intellectual capacity.
 - e. adult monozygotic twins are substantially more similar to one another on most dimensions than are adult dizygotic twins, regardless of whether both twins of a pair were raised in the same family environment.

Answer: E

Difficulty Level: Difficult

Topic: Heritability Estimates: Minnesota Study of Twins Reared Apart

Skill Level: Remember the Facts

Learning Objective: 2.16 Explain heritability estimates and how they are commonly misinterpreted.

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

110. The most extensive study to date of twins reared apart is the

- a. Texas Program for Genetic Research.
- b. Oregon Study of Intellectual Giftedness.
- c. Toronto Assessment of Family Dynamics.
- d. Minnesota Study of Twins Reared Apart.
- e. North African Census of Individual Differences.

Answer: D

Difficulty Level: Easy

Topic: Heritability Estimates: Minnesota Study of Twins Reared Apart

Skill Level: Remember the Facts

Learning Objective: 2.16 Explain heritability estimates and how they are commonly misinterpreted.

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

111. A heritability estimate of 70 percent indicates

- a. that the trait under consideration is 70 percent genetic.
- b. a 30 percent chance that the finding has been reached in error.
- c. that about 70 percent of the trait under consideration can be explained by environmental factors.
- d. that 30 percent of the participants in that particular study showed little to no evidence of having the trait under consideration.
- e. the proportion of between-subject variability occurring in a particular trait in that particular study that resulted from genetic differences among the participants in that study.

Answer: E

Difficulty Level: Difficult

Topic: Heritability Estimates: Minnesota Study of Twins Reared Apart

Skill Level: Understand the Concepts

Learning Objective: 2.16 Explain heritability estimates and how they are commonly misinterpreted.

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

112. A heritability estimate is
- a. an estimate of the proportion of a trait that is attributable to genetic factors.
 - b. an estimate of the proportion of within-subject variability occurring in a particular trait.
 - c. likely to be higher in studies with little environmental variation.
 - d. a measure of the developmental trajectory of individual differences.
 - e. generally in the .5 to .15 range for most traits that have been studied.

Answer: C

Difficulty Level: Difficult

Topic: Heritability Estimates: Minnesota Study of Twins Reared Apart

Skill Level: Understand the Concepts

Learning Objective: 2.16 Explain heritability estimates and how they are commonly misinterpreted.

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

113. In any study of heritability estimates, increasing the genetic diversity of the participants without introducing other changes would likely
- a. decrease the heritability estimate.
 - b. confound the experiment.
 - c. increase the accuracy of the heritability estimate.
 - d. reduce the accuracy of the heritability estimate.
 - e. increase the heritability estimate.

Answer: E

Difficulty Level: Difficult

Topic: Heritability Estimates: Minnesota Study of Twins Reared Apart

Skill Level: Understand the Concepts

Learning Objective: 2.16 Explain heritability estimates and how they are commonly misinterpreted.

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

114. Epigenetic research has found that there are genetic differences between so-called identical twins and that these differences
- a. do not occur in fraternal twins.
 - b. decrease with age.
 - c. increase with age.
 - d. increase disease susceptibility.
 - e. decrease disease susceptibility.

Answer: C

Difficulty Level: Moderate

Topic: A Look into the Future: Two Kinds of Twin Studies

Skill Level: Remember the Facts

Learning Objective: 2.17 Describe two ways that twin studies can be used to study the interaction of genes and experience (i.e., nature and nurture).

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

115. The term *identical twins* should not be used, because recent epigenetic research has shown that after conception there is a gradual accumulation of genetic
- a. differences between identical twins.
 - b. similarities between identical twins.
 - c. differences between identical and fraternal twins.
 - d. similarities between identical and fraternal twins.
 - e. differences between male and female twins.

Answer: A

Difficulty Level: Moderate

Topic: A Look into the Future: Two Kinds of Twin Studies

Skill Level: Remember the Facts

Learning Objective: 2.17 Describe two ways that twin studies can be used to study the interaction of genes and experience (i.e., nature and nurture).

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

116. In 2003, Eric Turkheimer and his colleagues published the results of a study examining the effects of experience on heritability. A major finding from this study was that
- a. among low-SES families, the heritability estimate of intelligence was very small.
 - b. among low-SES families, the heritability estimate of intelligence was surprisingly high.
 - c. among high-SES families, the heritability estimate of intelligence was very small.
 - d. heritability estimates of intelligence showed no consistent pattern across the various groups studied.
 - e. variations in intelligence in adult humans are almost entirely genetic.

Answer: A

Difficulty Level: Difficult

Topic: A Look into the Future: Two Kinds of Twin Studies

Skill Level: Understand the Concepts

Learning Objective: 2.17 Describe two ways that twin studies can be used to study the interaction of genes and experience (i.e., nature and nurture).

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

FILL-IN-THE-BLANK QUESTIONS

1. In the early 20th century, the nature side of the nature-nurture debate was championed by European _____.

Answer: ethologists

Difficulty Level: Moderate

Topic: The Origins of Dichotomous Thinking

Skill Level: Remember the Facts

Learning Objective: 2.1 Describe the origins of the physiological–psychological and nature–nurture ways of thinking.

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

2. Asomatognosia is typically produced by lesions to the right _____.

Answer: frontal and parietal lobes

Difficulty Level: Difficult

Topic: Problems with Thinking about the Biology of Behavior in Terms of Traditional Dichotomies

Skill Level: Remember the Facts

Learning Objective: 2.2 Explain why thinking about the biology of behavior in terms of traditional physiological–psychological and nature–nurture dichotomies is flawed.

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

3. Modern biology began in 1859 with the publication of *On the _____* by Charles Darwin.

Answer: Origin of Species

Difficulty Level: Difficult

Topic: Darwin's Theory of Evolution

Skill Level: Remember the Facts

Learning Objective: 2.3 Describe the origins of evolutionary theory.

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

4. Social dominance plays a role in evolution because dominant animals tend to produce more _____.

Answer: offspring

Difficulty Level: Moderate

Topic: Evolution and Behavior

Skill Level: Remember the Facts

Learning Objective: 2.4 Explain the evolutionary significance of social dominance and courtship displays.

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

5. Mammals evolved from a line of small _____.

Answer: reptiles

Difficulty Level: Difficult

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

6. The first *Homo* species is thought to have evolved from a species of _____ about 2 million years ago.

Answer: Australopithecus

Difficulty Level: Difficult

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

7. The incidental nonadaptive by-products of an adaptive evolutionary change are called _____.

Answer: spandrels

Difficulty Level: Difficult

Topic: Thinking about Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.6 Describe nine commonly misunderstood points about evolution.

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

8. Similarities between _____ structures result from convergent evolution.

Answer: analogous

Difficulty Level: Difficult

Topic: Thinking about Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.6 Describe nine commonly misunderstood points about evolution.

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

9. The two genes that control the same trait are called _____.

Answer: alleles

Difficulty Level: Moderate

Topic: Mendelian Genetics

Skill Level: Remember the Facts

Learning Objective: 2.8 Explain how Mendel's work with pea plants has informed us about the mechanisms of inheritance.

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

10. All body cells of a human normally contain _____ pairs of chromosomes.

Answer: 23

Difficulty Level: Easy

Topic: Chromosomes

Skill Level: Remember the Facts

Learning Objective: 2.9 Understand the structure and function of chromosomes.

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

11. The nucleotide base _____ is found in DNA but not in RNA.

Answer: thymine

Difficulty Level: Difficult

Topic: Chromosomes

Skill Level: Remember the Facts

Learning Objective: 2.9 Understand the structure and function of chromosomes.

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

12. _____ RNA carries the genetic code from DNA in the nucleus of the cell to the cytoplasm of the cell body.

Answer: Messenger

Difficulty Level: Easy

Topic: Chromosomes

Skill Level: Remember the Facts

Learning Objective: 2.9 Understand the structure and function of chromosomes.

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

13. Proteins are long chains of _____.

Answer: amino acids

Difficulty Level: Easy

Topic: Genetic Code and Genetic Expression

Skill Level: Remember the Facts

Learning Objective: 2.10 Describe the process of gene expression.

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

14. The study of genetics has progressed recently into the age of _____, the study of all mechanisms of inheritance other than the genetic code and its expression.

Answer: epigenetics

Difficulty Level: Easy

Topic: Modern Genetics: Growth of Epigenetics

Skill Level: Remember the Facts

Learning Objective: 2.12 Define epigenetics, and explain how it has transformed our understanding of genetics.

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

15. DNA methylation and _____ remodeling are two epigenetic mechanisms.

Answer: histone

Difficulty Level: Difficult

Topic: Modern Genetics: Growth of Epigenetics

Skill Level: Remember the Facts

Learning Objective: 2.12 Define epigenetics, and explain how it has transformed our understanding of genetics.

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

16. Maze-bright rats are less _____ than maze-dull rats.

Answer: fearful

Difficulty Level: Moderate

Topic: Selective Breeding of “Maze-Bright” and “Maze-Dull” Rats

Skill Level: Remember the Facts

Learning Objective: 2.13 Discuss what insights into the genetics of behavior were gained from early research on selective breeding.

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

17. People with phenylketonuria (PKU) normally have high levels of _____ in their urine unless they eat a phenylalanine-free diet.

Answer: phenylpyruvic acid

Difficulty Level: Difficult

Topic: Phenylketonuria: A Single-Gene Metabolic Disorder

Skill Level: Remember the Facts

Learning Objective: 2.14 Explain how classic research on phenylketonuria (PKU) has informed our understanding of the genetics of behavior.

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

18. _____ are a numerical calculation of the proportion of variability that occurred in a particular trait in a particular study as a result of genetic variation in that study.

Answer: Heritability estimates

Difficulty Level: Easy

Topic: Heritability Estimates: Minnesota Study of Twins Reared Apart

Skill Level: Remember the Facts

Learning Objective: 2.16 Explain heritability estimates and how they are commonly misinterpreted.

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

19. Monozygotic twins are sometimes called _____ twins even though they are not.

Answer: identical

Difficulty Level: Easy

Topic: A Look into the Future: Two Kinds of Twin Studies

Skill Level: Remember the Facts

Learning Objective: 2.17 Describe two ways that twin studies can be used to study the interaction of genes and experience (i.e., nature and nurture).

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

20. Eric Turkheimer and his colleagues found that the heritability estimate of intelligence among low-SES twins was _____.

Answer: very small / about 10 percent

Difficulty Level: Difficult

Topic: A Look into the Future: Two Kinds of Twin Studies

Skill Level: Remember the Facts

Learning Objective: 2.17 Describe two ways that twin studies can be used to study the interaction of genes and experience (i.e., nature and nurture).

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

ESSAY AND OTHER MULTIPLE-MARK QUESTIONS

1. Discuss the history and current view of the nature–nurture dichotomy.

Answer:

25% for describing the original nature–nurture issue

50% for describing how the nature–nurture issue evolved

25% for explaining the current interaction view of nature and nurture

Difficulty Level: Moderate

Topic: The Origins of Dichotomous Thinking

Skill Level: Understand the Concepts

Learning Objective: 2.1 Describe the origins of the physiological–psychological and nature–nurture ways of thinking.

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

2. Describe the model of the biology of behavior that has been adopted by most biopsychologists. Incorporate a diagram in your answer.

Answer:

50% for a written explanation of the model

50% for a diagram of the model

Difficulty Level: Difficult

Topic: Problems with Thinking about the Biology of Behavior in Terms of Traditional Dichotomies

Skill Level: Understand the Concepts

Learning Objective: 2.2 Explain why thinking about the biology of behavior in terms of traditional physiological–psychological and nature–nurture dichotomies is flawed.

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

3. Briefly summarize the main stages of human evolution beginning 410 million years ago with the evolution of amphibians.

Answer:

20% for describing the emergence of amphibians

20% for describing the emergence of reptiles

20% for describing the emergence of mammals

20% for describing the emergence of hominids

20% for describing the emergence of humans

Difficulty Level: Difficult

Topic: Course of Human Evolution

Skill Level: Remember the Facts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

4. Describe and discuss any four often-misunderstood points about evolution. Be sure to explain both the misconception and the modern view.

Answer:

50% for explaining any four of nine common misconceptions about evolution

50% for explaining the modern view that has replaced each of the misconceptions

Difficulty Level: Moderate

Topic: Course of Human Evolution

Skill Level: Understand the Concepts

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

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

5. Describe how structural genes are expressed; that is, transcribed and then translated into proteins. Incorporate a diagram in your answer.

Answer:

25% for describing the transcription of messenger RNA

50% for describing the translation of messenger RNA to protein

25% for a diagram of the process

Difficulty Level: Moderate

Topic: Genetic Code and Genetic Expression

Skill Level: Remember the Facts

Learning Objective: 2.10 Describe the process of gene expression.

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

6. Discuss the Human Genome Project and its major findings. What research has been stimulated by the major finding of the Human Genome Project?

Answer:

25% for describing the Human Genome Project

25% for describing the major findings of the Human Genome Project

25% for describing how the Human Genome Project led to the development of epigenetics

25% for explaining the limitations of the Human Genome Project in furthering understanding of behavior

Difficulty Level: Difficult

Topic: Human Genome Project

Skill Level: Remember the Facts

Learning Objective: 2.11 Discuss several ways in which modern advances have changed our understanding of genetic processes.

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

7. Discuss the interaction of genetic factors and experience in behavioral ontogeny by describing two examples and the key findings that revealed the interactions.

Answer:

50% for describing the genetics of maze brightness and phenylketonuria (PKU)

50% for describing the interaction of genetic factors and experience for the selected examples

Difficulty Level: Moderate

Topic: Epigenetics of Behavioral Development: Interaction of Genetic Factors and Experience

Skill Level: Remember the Facts, Conceptual

Learning Objective: 2.13 Discuss what insights into the genetics of behavior were gained from early research on selective breeding.

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

8. Discuss the behavioral genetics of individual differences, being sure to focus on common misunderstandings about heritability estimates.

Answer:

25% for defining heritability estimates

75% for explaining common misconceptions about heritability estimates and contrasting them with more reasonable views.

Difficulty Level: Difficult

Topic: Genetics of Human Psychological Differences

Skill Level: Remember the Facts

Learning Objective: 2.15 Explain why it is important to distinguish between the development of individuals and the development of individual differences.

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

REVEL QUIZZES

The following questions appear at the end of each module and at the end of the chapter in Revel for *Biopsychology*, 11th Edition.

Quiz: Thinking about the Biology of Behavior: From Dichotomies to Interactions

EOM_Q2.1.1

Question: Physiological-or-psychological thinking was given official recognition in the 17th century when the Roman Church officially supported

- a. the nature-nurture dichotomy.
- b. Cartesian dualism.
- c. the way in which biopsychologists think about the biology of behavior.
- d. asomatognosia.

Answer: B

Consider This: In order to avoid a conflict between science and church, Descartes gave one part of the universe to science and the other part to the church. LO 2.1 Describe the origins of the physiological–psychological and nature–nurture ways of thinking.

Learning Objective: 2.1 Describe the origins of the physiological–psychological and nature–nurture ways of thinking.

Skill Level: Understand the Concepts

Difficulty Level: Moderate

EOM_Q2.1.2

Question: _____ many European ethologists, most of the early North American experimental psychologists were committed to the _____ side of the nature–nurture debate.

- a. Like; nature
- b. Like; nurture
- c. Unlike; nature
- d. Unlike; nurture

Answer: D

Consider This: Watson’s behaviorism was typical of North American thought. LO 2.1 Describe the origins of the physiological–psychological and nature–nurture ways of thinking.

Learning Objective: 2.1 Describe the origins of the physiological–psychological and nature–nurture ways of thinking.

Skill Level: Analyze It

Difficulty Level: Moderate

EOM_Q2.1.3

Question: European ethology focused on the study of

- a. learned behaviors.
- b. chimpanzees.
- c. instinctive behaviors.
- d. asomatognosia.

Answer: C

Consider This: Many ethologists study the behavior of animals in their natural habitat. LO 2.1

Describe the origins of the physiological–psychological and nature–nurture ways of thinking.

Learning Objective: 2.1 Describe the origins of the physiological–psychological and nature–nurture ways of thinking.

Skill Level: Remember the Facts

Difficulty Level: Easy

EOM_Q2.1.4

Question: Asomatognosia typically involves the _____ side of the body and usually results from damage to the _____.

- a. left; left parietal lobe
- b. right; right parietal lobe
- c. right; left parietal lobe
- d. left; right parietal lobe

Answer: D

Consider This: Asomatognosia involves the loss of awareness of parts of one’s own body. LO 2.2 Explain why thinking about the biology of behavior in terms of traditional physiological–psychological and nature–nurture dichotomies is flawed.

Learning Objective: 2.2 Explain why thinking about the biology of behavior in terms of traditional physiological–psychological and nature–nurture dichotomies is flawed.

Skill Level: Remember the Facts

Difficulty Level: Moderate

EOM_Q2.1.5

Question: In Gallup's (1983) research with chimpanzees, the chimpanzees were given access to a mirror. Later the chimpanzee's eyebrow was painted red. When the chimpanzees now looked at the mirror, they _____, suggesting that _____.

- a. demonstrated awareness of the red color by touching their eyebrows; chimpanzees have self-awareness
- b. attacked the mirror screaming; chimpanzees have self-awareness
- c. demonstrated no awareness of the red color; chimpanzees are colorblind to red.
- d. demonstrated no awareness of the red color; chimpanzees have no self-awareness

Answer: A

Consider This: Gallup's research supported the notion that nonhumans are capable of considerable psychological complexity. LO 2.2 Explain why thinking about the biology of behavior in terms of traditional physiological–psychological and nature–nurture dichotomies is flawed.

Learning Objective: 2.2 Explain why thinking about the biology of behavior in terms of traditional physiological–psychological and nature–nurture dichotomies is flawed.

Skill Level: Understand the Concepts

Difficulty Level: Moderate

Quiz: Human Evolution

EOM_Q2.2.1

Question: In the Darwinian sense, _____ refers to the ability of an organism to survive and produce large numbers of fertile offspring.

- a. flourishing
- b. monogamy
- c. polygyny
- d. fitness

Answer: D

Consider This: Emphasized is the importance of an organism's ability to contribute its genes to subsequent generations. LO 2.3 Describe the origins of evolutionary theory.

Learning Objective: 2.3 Describe the origins of evolutionary theory.

Skill Level: Remember the Facts

Difficulty Level: Easy

EOM_Q2.2.2

Question: A wolf is a conspecific of a

- a. dog.
- b. wolf.
- c. cat.
- d. hyena.

Answer: B

Consider This: The word *conspecific* is related to the concept of a species. LO 2.4 Explain the evolutionary significance of social dominance and courtship displays.

Learning Objective: 2.4 Explain the evolutionary significance of social dominance and courtship displays.

Skill Level: Apply What You Know

Difficulty Level: Moderate

EOM_Q2.2.3

Question: Structures that are similar because they have a common evolutionary origin are called

- a. spandrels.
- b. analogous structures.
- c. homologous structures.
- d. adaptations.

Answer: C

Consider This: Think of the example in the text that compares a bird's wing to a human's arm.

LO 2.6 Describe nine commonly misunderstood points about evolution.

Learning Objective: 2.6 Describe nine commonly misunderstood points about evolution.

Skill Level: Remember the Facts

Difficulty Level: Easy

EOM_Q2.2.4

Question: Nonadaptive structures or behaviors that evolved because they were linked to a characteristic that was adaptive are called

- a. spandrels.
- b. analogous structures.
- c. homologous structures.
- d. adaptations.

Answer: A

Consider This: The human belly button is a good example of this concept. LO 2.6 Describe nine commonly misunderstood points about evolution.

Learning Objective: 2.6 Describe nine commonly misunderstood points about evolution.

Skill Level: Remember the Facts

Difficulty Level: Moderate

EOM_Q2.2.5

Question: The best metaphor for evolution is not a ladder; it is a dense

- a. mountain.
- b. bush.
- c. forest.
- d. river.

Answer: B

Consider This: Evolution is not a linear process. LO 2.6 Describe nine commonly misunderstood points about evolution.

Learning Objective: 2.6 Describe nine commonly misunderstood points about evolution.

Skill Level: Understand the Concepts

Difficulty Level: Moderate

Quiz: Fundamental Genetics

EOM_Q2.3.1

Question: The two genes that control each trait are called

- a. alleles.
- b. nucleotides.
- c. spandrels.
- d. genotypes.

Answer: A

Consider This: Genes for these traits can be either homozygous or heterozygous. LO 2.8 Explain how Mendel's work with pea plants has informed us about the mechanisms of inheritance.

Learning Objective: 2.8 Explain how Mendel's work with pea plants has informed us about the mechanisms of inheritance.

Skill Level: Remember the Facts

Difficulty Level: Easy

EOM_Q2.3.2

Question: In his groundbreaking experiments, Mendel studied _____ traits in true-breeding lines of pea plants.

- a. observable
- b. common
- c. homozygous
- d. dichotomous

Answer: D

Consider This: A pea plant will have either brown seeds or white seeds. LO 2.8 Explain how Mendel's work with pea plants has informed us about the mechanisms of inheritance.

Objective: 2.8 Explain how Mendel's work with pea plants has informed us about the mechanisms of inheritance.

Skill Level: Remember the Facts

Difficulty Level: Easy

EOM_Q2.3.3

Question: Each strand of DNA is a sequence of _____ bases.

- a. protein
- b. nucleotide
- c. deoxyribonucleic
- d. thymine

Answer: B

Consider This: The sequence of these bases forms the genetic code. LO 2.9 Understand the structure and function of chromosomes.

Learning Objective: 2.9 Understand the structure and function of chromosomes.

Skill Level: Remember the Facts

Difficulty Level: Easy

EOM_Q2.3.4

Question: The massive international research effort that mapped the sequence of bases in human chromosomes was the Human _____ Project.

- a. Proteome
- b. Genome
- c. Connectome
- d. Chromosome

Answer: B

Consider This: The project hoped to identify chromosomal variations and to identify specific treatments for human diseases. LO 2.11 Discuss several ways in which modern advances have changed our understanding of genetic processes.

Learning Objective: 2.11 Discuss several ways in which modern advances have changed our understanding of genetic processes.

Skill Level: Remember the Facts

Difficulty Level: Easy

EOM_Q2.3.5

Question: Mechanisms that influence the expression of genes without changing the genes themselves are often called

- a. epigenetic mechanisms.
- b. gene maps.
- c. monoallelic expressions.
- d. mitochondrial factors.

Answer: A

Consider This: Examples of these mechanisms include DNA methylation and histone remodeling. LO 2.12 Define epigenetics, and explain how it has transformed our understanding of genetics.

Learning Objective: 2.12 Define epigenetics, and explain how it has transformed our understanding of genetics.

Skill Level: Remember the Facts

Difficulty Level: Easy

Quiz: Epigenetics of Behavioral Development: Interaction of Genetic Factors and Experience

EOM_Q2.4.1

Question: _____ is the development of individuals over their life span, whereas _____ is the evolutionary development of species through the ages.

- a. Ontogeny; epigenetics
- b. Genetics; epigenetics
- c. Phylogeny; ontogeny
- d. Ontogeny; phylogeny

Answer: D

Consider This: There is a different name for the changes that occur within an organism's lifetime versus the changes that occur to a species over many generations. LO 2.13 Discuss what insights into the genetics of behavior were gained from early research on selective breeding.

Learning Objective: 2.13 Discuss what insights into the genetics of behavior were gained from early research on selective breeding.

Skill Level: Analyze It

Difficulty Level: Moderate

EOM_Q2.4.2

Question: When Searle (1949) compared selectively bred maze-dull and maze-bright rats on 30 different behavioral tests, his analysis suggested that the maze-bright rats were superior maze learners not because they were more intelligent but because they:

- a. were less fearful.
- b. were more fearful.
- c. demonstrated less overall physical activity.
- d. demonstrated more overall physical activity.

Answer: A

Consider This: A behavioral trait used as the criterion for selective breeding is not necessarily the only behavioral trait influenced by the selective breeding. LO 2.13 Discuss what insights into the genetics of behavior were gained from early research on selective breeding.

Learning Objective: 2.13 Discuss what insights into the genetics of behavior were gained from early research on selective breeding.

Skill Level: Understand the Concepts

Difficulty Level: Moderate

EOM_Q2.4.3

Question: The PKU gene is _____, meaning that _____.

- a. dominant; it develops only in homozygous individuals
- b. dominant; it develops only in heterozygous individuals
- c. recessive; it develops only in homozygous individuals
- d. recessive; it develops only in heterozygous individuals

Answer: C

Consider This: PKU results from a single gene mutation. LO 2.14 Explain how classic research on phenylketonuria (PKU) has informed our understanding of the genetics of behavior.

Learning Objective: 2.14 Explain how classic research on phenylketonuria (PKU) has informed our understanding of the genetics of behavior.

Skill Level: Understand the Concepts

Difficulty Level: Moderate

EOM_Q2.4.4

Question: Which statement is true of the neurological disorder phenylketonuria (PKU)?

- a. The behavioral symptoms of PKU are unaffected by environmental interventions.
- b. It is more common among children of European American descent than among children of African American or Asian American descent.
- c. PKU results from a complex interaction among many genes.
- d. In the United States, nearly 1 in 1000 infants are born with PKU.

Answer: B

Consider This: PKU was discovered by a Norwegian artist. LO 2.14 Explain how classic research on phenylketonuria (PKU) has informed our understanding of the genetics of behavior. Learning Objective: 2.14 Explain how classic research on phenylketonuria (PKU) has informed our understanding of the genetics of behavior.

Skill Level: Understand the Concepts

Difficulty Level: Moderate

EOM_2.4.5

Question: The period, usually early in life, during which a particular experience must occur to have a major effect on the development of a trait is called the _____ period for that trait.

- a. activating
- b. transcriptive
- c. epigenetic
- d. sensitive

Answer: D

Consider This: The trait is especially receptive to outside influence during this period. LO 2.14 Explain how classic research on phenylketonuria (PKU) has informed our understanding of the genetics of behavior.

Learning Objective: 2.14 Explain how classic research on phenylketonuria (PKU) has informed our understanding of the genetics of behavior.

Skill Level: Remember the Facts

Difficulty Level: Easy

Quiz: Genetics of Human Psychological Differences

EOM_Q2.5.1

Question: _____ twins develop from the same zygote, whereas _____ twins develop from two zygotes.

- a. Unizygotic; dizygotic
- b. Monozygotic; dizygotic
- c. Dizygotic; unizygotic
- d. Dizygotic; monozygotic

Answer: B

Consider This: A zygote is a fertilized egg. LO 2.15 Explain why it is important to distinguish between the development of individuals and the development of individual differences.

Learning Objective: 2.15 Explain why it is important to distinguish between the development of individuals and the development of individual differences.

Skill Level: Analyze It

Difficulty Level: Moderate

EOM_Q2.5.2

Question: Heritability estimates tell us about:

- a. the number of monozygotic twins in a study.
- b. the relative contributions of genes and experience to the development of individuals.
- c. the number of dizygotic twins in a study.
- d. the proportion of variability that occurred in a particular trait in a particular study as a result of the genetic variation in that study.

Answer: D

Consider This: Heritability estimates are based on a sample rather than a population. LO 2.16

Explain heritability estimates and how they are commonly misinterpreted.

Learning Objective: 2.16 Explain heritability estimates and how they are commonly misinterpreted.

Skill Level: Understand the Concepts

Difficulty Level: Moderate

EOM_Q2.5.3

Question: The discovery that genetic variability contributes substantially to individual differences in virtually all human traits and behaviors has led several geneticists to argue that:

- a. all behavior is the result of environmental factors.
- b. all behavior is the result of genetic factors.
- c. much of what is derived from heritability studies could be applied to improving health.
- d. no more heritability estimate studies should be conducted.

Answer: D

Consider This: Heritability estimates tell us nothing about the relative contributions of genes and experience to the development of particular individuals. LO 2.16 Explain heritability estimates and how they are commonly misinterpreted.

Learning Objective: 2.16 Explain heritability estimates and how they are commonly misinterpreted.

Skill Level: Understand the Concepts

Difficulty Level: Moderate

EOM_Q2.5.4

Question: Fraga and colleagues (2005) took tissue samples from 40 pairs of monozygotic twins and screened the tissues for DNA methylation and histone modifications. They found that the twins were epigenetically _____ early in life and that epigenetic differences _____ as they aged.

- a. indistinguishable; accumulated
- b. indistinguishable; stayed about the same
- c. indistinguishable; accumulated only in their brains
- d. different; accumulated

Answer: A

Consider This: It no longer seems reasonable to call monozygotic twins *identical twins*. LO 2.17 Describe two ways that twin studies can be used to study the interaction of genes and experience (i.e., nature and nurture).

Learning Objective: 2.17 Describe two ways that twin studies can be used to study the interaction of genes and experience (i.e., nature and nurture).

Skill Level: Understand the Concepts

Difficulty Level: Moderate

EOM_Q2.5.5

Question: The discovery of epigenetic differences in monozygotic twins raises the possibility that epigenetic differences may explain why:

- a. both twins develop the same disease.
- b. heritability estimates are typically small for most traits.
- c. experimental manipulation of human genetic material is unethical.
- d. one twin develops a trait and the other doesn't.

Answer: D

Consider This: Epigenetic differences may account for differences in the behavior and physiology of monozygotic twins. LO 2.17 Describe two ways that twin studies can be used to study the interaction of genes and experience (i.e., nature and nurture).

Learning Objective: 2.17 Describe two ways that twin studies can be used to study the interaction of genes and experience (i.e., nature and nurture).

Skill Level: Understand the Concepts

Difficulty Level: Moderate

Chapter 2 Quiz: Evolution, Genetics, and Experience

EOC_Q2.1

Question: The study of animal behavior in the wild is called:

- a. ethology.
- b. monozygotic.
- c. translation.
- d. transcription.

Answer: A

Consider This: This field of study emphasizes the role of inherited factors in behavioral development. LO 2.1 Describe the origins of the physiological–psychological and nature–nurture ways of thinking.

Learning Objective: 2.1 Describe the origins of the physiological–psychological and nature–nurture ways of thinking.

Skill Level: Remember the Facts

Difficulty Level: Easy

EOC_Q2.2

Question: In an attempt to provide convincing evidence of self-awareness, Gallup (1983) devised a clever test: Each chimpanzee in his experiment was:

- a. exposed to a human experimenter.
- b. put in front of a mirror.
- c. exposed to a conspecific.
- d. shown a video of another chimpanzee that had its eyebrow painted red.

Answer: B

Consider This: Think of situations where a human would be more aware of him or herself. LO 2.2 Explain why thinking about the biology of behavior in terms of traditional physiological–psychological and nature–nurture dichotomies is flawed..

Learning Objective: 2.2 Explain why thinking about the biology of behavior in terms of traditional physiological–psychological and nature–nurture dichotomies is flawed.

Skill Level: Understand the Concepts

Difficulty Level: Easy

EOC_Q2.3

Question: Darwin was the first to:

- a. write about evolution.
- b. suggest that species evolve from preexisting species.
- c. propose a theory in the biological sciences that was met with resistance.
- d. amass a large body of supporting evidence for evolution.

Answer: D

Consider This: Darwin’s theory is often cited as the single most influential theory in the biological sciences. LO 2.3 Describe the origins of evolutionary theory.

Learning Objective: 2.3 Describe the origins of evolutionary theory.

Skill Level: Analyze It

Difficulty Level: Difficult

EOC_Q2.4

Question: One reason why social dominance is an important factor in evolution is that:

- a. in some species, dominant females are more likely to produce more and healthier offspring.
- b. it leads to unnatural selection.
- c. it produces healthier offspring.
- d. it increases the likelihood of transcription.

Answer: A

Consider This: Among other things, social dominance often leads to greater access to food. LO

2.4 Explain the evolutionary significance of social dominance and courtship displays.

Learning Objective: 2.4 Explain the evolutionary significance of social dominance and courtship displays.

Skill Level: Understand the Concepts

Difficulty Level: Moderate

EOC_Q2.5

Question: Apes are thought to have evolved from a line of:

- a. hominins.
- b. Old-World monkeys.
- c. New-World monkeys.
- d. amphibians.

Answer: B

Consider This: These ape ancestors are similar to apes in that they have opposable thumbs that are not long enough to be of much use for precise manipulation. LO 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

Learning Objective: 2.5 Summarize the pathway of evolution from single-cell organisms to humans.

Skill Level: Remember the Facts

Difficulty Level: Easy

EOC_Q2.6

Question: The evolution of the scrotum illustrates that evolution:

- a. always proceeds to perfection.
- b. does not progress to preordained perfection.
- c. is more like a bush than a ladder.
- d. is more like a sac than a ball.

Answer: B

Consider This: Mammalian sperm do not develop effectively at body temperature. LO 2.6

Describe nine commonly misunderstood points about evolution.

Learning Objective: 2.6 Describe nine commonly misunderstood points about evolution.

Skill Level: Apply What You Know

Difficulty Level: Moderate

EOC_Q2.7

Question: During the course of evolution of the human brain, there has been a(n) _____ in the _____.

- a. decrease; size of brain stem
- b. decrease; size of the cerebrum
- c. increase; size of the ventricles
- d. increase; number of convolutions

Answer: D

Consider This: This brain change has occurred in the outermost layer of cerebral tissue. LO 2.7 Describe how research on the evolution of the human brain has changed over time.

Learning Objective: 2.7 Describe how research on the evolution of the human brain has changed over time.

Skill Level: Understand the Concepts

Difficulty Level: Moderate

EOC_Q2.8

Question: Marco possesses two different variants, or _____, of the eye-color gene: a brown-eyed and a blue-eyed variant. Marco is _____ for the trait of eye color.

- a. alleles; dizygotic
- b. alleles; heterozygous
- c. gametes; dizygotic
- d. gametes; heterozygous

Answer: B

Consider This: The contrast is between same and different variants, not between one and two variants. LO 2.8 Explain how Mendel's work with pea plants has informed us about the mechanisms of inheritance.

Learning Objective: 2.8 Explain how Mendel's work with pea plants has informed us about the mechanisms of inheritance.

Skill Level: Apply What You Know

Difficulty Level: Moderate

EOC_Q2.9

Question: Humans have _____ pairs of chromosomes.

- a. 23
- b. 46
- c. 18
- d. 36

Answer: A

Consider This: Half of a human's chromosomes are provided by the mother, and half are provided by the father. LO 2.9 Understand the structure and function of chromosomes.

Learning Objective: 2.9 Understand the structure and function of chromosomes.

Skill Level: Remember the Facts

Difficulty Level: Easy

EOC_Q2.10

Question: Proteins are long chains of:

- a. cytosines.
- b. amino acids
- c. nucleotides.
- d. chromosomes.

Answer: B

Consider This: Proteins are important for both the physiological activity and structure of cells.

LO 2.10 Describe the process of gene expression.

Learning Objective: 2.10 Describe the process of gene expression.

Skill Level: Remember the Facts

Difficulty Level: Easy

EOC_Q2.11

Question: _____ is the study of all mechanisms of inheritance other than the genetic code and its expression.

- a. Polyheritance
- b. Evolutionary psychology
- c. The Human Genome Project
- d. Epigenetics

Answer: D

Consider This: This field studies the mechanisms by which experience exerts its effects on gene expression. LO 2.12 Define epigenetics, and explain how it has transformed our understanding of genetics.

Learning Objective: 2.12 Define epigenetics, and explain how it has transformed our understanding of genetics.

Skill Level: Remember the Facts

Difficulty Level: Easy

EOC_Q2.12

Question: In a classic study by Cooper and Zubek (1958), maze-dull rats made significantly more errors than maze-bright rats only if they had been reared in:

- a. a natural habitat.
- b. isolation.
- c. an impoverished environment.
- d. an enriched environment.

Answer: C

Consider This: Cooper and Zubek discovered that in addition to genetic inheritance, other factors affected maze performance. LO 2.13 Discuss what insights into the genetics of behavior were gained from early research on selective breeding.

Learning Objective: 2.13 Discuss what insights into the genetics of behavior were gained from early research on selective breeding.

Skill Level: Understand the Concepts

Difficulty Level: Moderate

EOC_Q2.13

Question: In most modern hospitals, the blood of newborn infants is routinely screened for:

- a. high levels of amino acids.
- b. high levels of phenylalanine.
- c. high levels of DNA.
- d. high levels of protein.

Answer: B

Consider This: The substance being screened for accumulates in the body, resulting in low dopamine levels and abnormal brain impairment. LO 2.14 Explain how classic research on phenylketonuria (PKU) has informed our understanding of the genetics of behavior.

Learning Objective: 2.14 Explain how classic research on phenylketonuria (PKU) has informed our understanding of the genetics of behavior.

Skill Level: Remember the Facts

Difficulty Level: Easy

EOC_Q2.14

Question: In the representative Western samples that have been studied, all complex traits and behaviors have heritability estimates ranging from _____ percent.

- a. 5 to 10
- b. 20 to 30
- c. 30 to 50
- d. 40 to 80

Answer: D

Consider This: Heredity accounts for a “substantial” percentage of the variation between people in all the traits that researchers have studied. LO 2.16 Explain heritability estimates and how they are commonly misinterpreted.

Learning Objective: 2.16 Explain heritability estimates and how they are commonly misinterpreted.

Skill Level: Remember the Facts

Difficulty Level: Easy

EOC_Q2.15

Question: In studies of disease-discordant monozygotic twin pairs, one searches each pair for _____, focusing on those areas of DNA that are thought to be involved in the disorder.

- a. mutations
- b. genetic differences
- c. epigenetic differences
- d. amino acid differences

Answer: C

Consider This: Monozygotic twins accumulate differences in gene expression as they age. LO 2.17 Describe two ways that twin studies can be used to study the interaction of genes and experience (i.e., nature and nurture).

Learning Objective: 2.17 Describe two ways that twin studies can be used to study the interaction of genes and experience (i.e., nature and nurture).

Skill Level: Understand the Concepts

Difficulty Level: Moderate