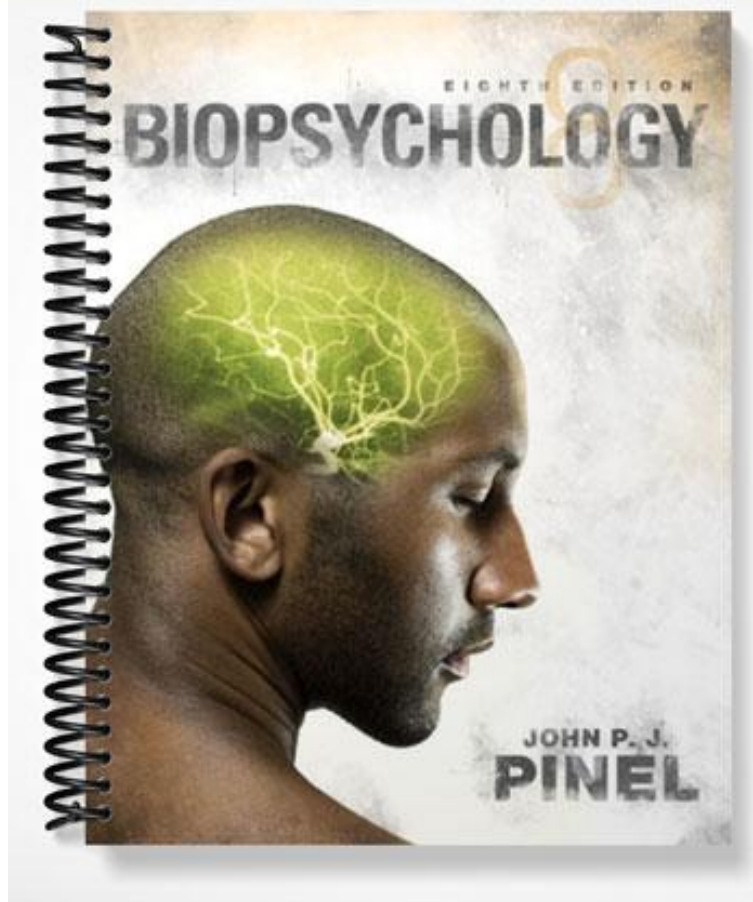


TEST BANK



CHAPTER 2

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

MULTIPLE CHOICE QUESTIONS

- 1) The general intellectual climate of a culture is referred to as its
- A) canon.
 - B) guano.
 - C) Zeitgeist.
 - D) converging operations.
 - E) confounds.

Answer: C

Diff: 1 Page Ref: 21

Topic: Chapter 2 Introduction

- 2) A major purpose of Chapter 2 of Biopsychology is to teach you not to think about the biology of behavior in terms of
- A) instinct.
 - B) Cartesian dualism.
 - C) traditional dichotomies.
 - D) psychology.
 - E) the brain.

Answer: C

Diff: 2 Page Ref: 21

Topic: 2.1 Thinking about the Biology of Behavior

- 3) The idea that the human brain and human mind are separate entities was formalized in the 1600s by
- A) Hebb.
 - B) Locke.
 - C) Plato.
 - D) Descartes.
 - E) Pinel.

Answer: D

Diff: 2 Page Ref: 21

Topic: 2.1 Thinking about the Biology of Behavior

- 4) Descartes's philosophy was called
- A) monism.
 - B) behaviorism.
 - C) ethology.
 - D) mentalism.
 - E) dualism.

Answer: E

Diff: 2 Page Ref: 21

Topic: 2.1 Thinking about the Biology of Behavior

- 5) Nature is to nurture as
- A) learning is to genetics.
 - B) behaviorism is to ethology.
 - C) genetics is to experience.
 - D) both A and B
 - E) both B and C

Answer: C

Diff: 3 Page Ref: 21

Topic: 2.1 Thinking about the Biology of Behavior

- 6) European ethologists focused on the study of
A) invertebrates.
B) instinctive behaviors.
C) learning.

- D) both A and C
E) both B and C

Answer: B

Diff: 3 Page Ref: 21

Topic: 2.1 Thinking about the Biology of Behavior

- 7) Asomatognosia is a
A) form of Korsakoff's syndrome.
B) dualistic philosophy.
C) learned response.
D) consequence of hypothalamic damage.
E) deficiency in the awareness of parts of one's own body.

Answer: E

Diff: 1 Page Ref: 21

Topic: 2.1 Thinking about the Biology of Behavior

- 8) Asomatognosia typically
A) results from damage to the right parietal lobe.
B) affects the left side of the body.
C) affects both sides of the body.

- D) affects the right side of the body.
E) both A and B

Answer: E

Diff: 3 Page Ref: 22

Topic: 2.1 Thinking about the Biology of Behavior

- 9) Depicted here is the cortex of the right
A) parietal lobe.
B) hippocampus.
C) striatum.
D) frontal lobe.
E) prefrontal lobe.



Answer: A

Diff: 1 Page Ref: 22

Topic: 2.1 Thinking about the Biology of Behavior

- 10) One way to study self-awareness in nonhuman animals is to confront them with
A) a mirror.
B) a photograph of themselves.
C) an experiment.

- D) a frontal-lobe lesion.
E) a difficult task.

Answer: A

Diff: 1 Page Ref: 23

Topic: 2.1 Thinking about the Biology of Behavior

11) According to the text, the phrase, “Reports of its death have been greatly exaggerated.” sums up the history of

- A) biopsychology.
- B) physiology.
- C) Cartesian dualism.
- D) nature-or-nurture thinking.
- E) comparative psychology.

Answer: D

Diff: 3 Page Ref: 23

Topic: 2.1 Thinking about the Biology of Behavior

12) All behavior is the product of

- A) an organism’s genetic endowment.
- B) an organism’s experience.
- C) an organism’s perception of the current situation.
- D) all of the above
- E) both A and B

Answer: D

Diff: 3 Page Ref: 24

Topic: 2.1 Thinking about the Biology of Behavior

13) The single most influential theory in the biological sciences is the theory of

- A) D. O. Hebb.
- B) Charles Darwin.
- C) evolution.
- D) both A and C
- E) both B and C

Answer: E

Diff: 2 Page Ref: 24

Topic: 2.2 Human Evolution

14) Darwin’s theory of evolution was published in

- A) 1312.
- B) 1562.
- C) 1859.
- D) 1920.
- E) 1943.

Answer: C

Diff: 2 Page Ref: 24

Topic: 2.2 Human Evolution

15) Darwin was not the first to suggest that species evolve, but he was the first to suggest that

- A) evolution occurs through natural selection.
- B) cultures rarely evolve.
- C) evolution occurs by genetics.
- D) mammals do not evolve.
- E) sex is an important component of evolution for all living species.

Answer: A

Diff: 2 Page Ref: 25

Topic: 2.2 Human Evolution

16) Darwin suggested a mechanism for evolution:

- A) genes.
- B) natural selection.
- C) sex.
- D) all of the above
- E) none of the above

Answer: B

Diff: 2 Page Ref: 25

Topic: 2.2 Human Evolution

17) Horse breeders have created faster horses through programs of

- A) natural selection.
- B) gene splicing.
- C) selective breeding.
- D) domestication.
- E) euthanasia.

Answer: C

Diff: 1 Page Ref: 25

Topic: 2.2 Human Evolution

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.
- C) win fights.
- D) survive.
- E) avoid predation.

Answer: A

Diff: 2 Page Ref: 25

Topic: 2.2 Human Evolution

19) Social dominance is an important factor in evolution because dominant males often

- A) kill their mates.
- B) become seriously injured.
- C) produce more offspring than nondominant males.
- D) establish hierarchies.
- E) are much larger.

Answer: C

Diff: 2 Page Ref: 26

Topic: 2.2 Human Evolution

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

Diff: 2 Page Ref: 27

Topic: 2.2 Human Evolution

21) The conspecific of a vole is a

- A) rat.
- B) monkey.
- C) human.
- D) mouse.
- E) vole.

Answer: E

Diff: 2 Page Ref: 27

Topic: 2.2 Human Evolution

- 22) Evidence suggests that complex multicellular, water-dwelling organisms first appeared on earth
A) in the early 1920s. D) 4 million years ago.
B) 600 million years ago. E) 2 million years ago.
C) 20 million years ago.

Answer: B

Diff: 2 Page Ref: 27

Topic: 2.2 Human Evolution

- 23) Animals with dorsal nerve cords are called
A) phyla. D) mammals.
B) chordates. E) amphibians.
C) vertebrates.

Answer: B

Diff: 2 Page Ref: 27

Topic: 2.2 Human Evolution

- 24) Which of the following are chordates?
A) humans D) mammals
B) vertebrates E) all of the above
C) Florida walking catfish

Answer: E

Diff: 2 Page Ref: 27

Topic: 2.2 Human Evolution

- 25) Which of the following is not true?
A) All mammals are chordates. D) All mammals are vertebrates.
B) All chordates are vertebrates. E) All vertebrates are chordates.
C) All reptiles are vertebrates.

Answer: B

Diff: 3 Page Ref: 27

Topic: 2.2 Human Evolution

- 26) Birds and reptiles are
A) amphibians. D) all of the above
B) chordates. E) both B and C
C) vertebrates.

Answer: E

Diff: 3 Page Ref: 27

Topic: 2.2 Human Evolution

- 27) The first animals to venture out of the water were
A) reptiles. D) Florida walking catfish.
B) bony fishes. E) both B and C
C) amphibians.

Answer: B

Diff: 3 Page Ref: 27

Topic: 2.2 Human Evolution

28) Frogs, toads, and salamanders are

- A) vertebrates.
- B) chordates.
- C) amphibians.

- D) all of the above
- E) both A and C

Answer: D

Diff: 3 Page Ref: 27

Topic: 2.2 Human Evolution

29) Lizards, snakes, and turtles are

- A) reptiles.
- B) amphibians.
- C) vertebrates.

- D) both A and C
- E) both B and C

Answer: D

Diff: 2 Page Ref: 28

Topic: 2.2 Human Evolution

30) Reptiles evolved directly from

- A) amphibians.
- B) fish.
- C) bony fish.

- D) prosimians.
- E) snakes.

Answer: A

Diff: 2 Page Ref: 28

Topic: 2.2 Human Evolution

31) Reptiles were the first animals to

- A) have back bones.
- B) lay shell-covered eggs.
- C) be covered by dry scales.

- D) both A and B
- E) both B and C

Answer: E

Diff: 3 Page Ref: 28

Topic: 2.2 Human Evolution

32) Mammals evolved directly from

- A) reptiles.
- B) fish.
- C) amphibians.

- D) prosimians.
- E) primates.

Answer: A

Diff: 2 Page Ref: 28

Topic: 2.2 Human Evolution

33) One remaining mammalian species that lays eggs is the

- A) duck-billed platypus.
- B) hominin.
- C) prosimian.

- D) Florida walking catfish.
- E) orangutan.

Answer: A

Diff: 3 Page Ref: 28

Topic: 2.2 Human Evolution

34) Prosimians, hominins, and apes are all

- A) old-world monkeys.
- B) new-world monkeys.
- C) langurs.
- D) primates.
- E) none of the above

Answer: D

Diff: 3 Page Ref: 28

Topic: 2.2 Human Evolution

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

Diff: 3 Page Ref: 28

Topic: 2.2 Human Evolution

36) According to the simplest theory, the hominin line is composed of two different genera:

- A) Australopithecus and Homo.
- B) apes and Homo sapiens.
- C) apes and humans.
- D) old-world monkeys and new-world monkeys.
- E) none of the above

Answer: A

Diff: 3 Page Ref: 28

Topic: 2.2 Human Evolution

37) The first hominins are thought to have evolved about

- A) 200 million years ago.
- B) 100 million years ago.
- C) 50 million years ago.
- D) 6 million years ago.
- E) 1 million years ago.

Answer: D

Diff: 3 Page Ref: 28

Topic: 2.2 Human Evolution

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

- A) 100 million
- B) 150 million
- C) 90 million
- D) 6 million
- E) 100 thousand

Answer: D

Diff: 2 Page Ref: 28

Topic: 2.2 Human Evolution

39) Australo means _____; pithecus means _____.

- A) African; gorilla
- B) southern; ape
- C) African; chimpanzee
- D) African; ape
- E) African; man

Answer: B

Diff: 3 Page Ref: 29

Topic: 2.2 Human Evolution

40) The last remaining hominin species is

- A) Australopithecus.
- B) Homo sapiens.
- C) prosimians.
- D) lemurs.
- E) tree shrews.

Answer: B

Diff: 1 Page Ref: 29

Topic: 2.2 Human Evolution

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

- A) apes.
- B) Homo sapiens
- C) Neanderthals
- D) Australopithecines
- E) archaeologists

Answer: D

Diff: 2 Page Ref: 29

Topic: 2.2 Human Evolution

42) About 200 thousand years ago, early hominins were gradually replaced in the African fossil record by

- A) old-world monkeys.
- B) accountants.
- C) Homo sapiens.
- D) Cro-Magnons.
- E) Australopithecus.

Answer: C

Diff: 3 Page Ref: 29

Topic: 2.2 Human Evolution

43) Metaphorically, evolution is a

- A) scale.
- B) ladder.
- C) book.
- D) bush.
- E) soap dish.

Answer: D

Diff: 1 Page Ref: 29

Topic: 2.2 Human Evolution

44) Sudden evolutionary changes are often triggered by

- A) selective breeding.
- B) fossilization.
- C) paleontologists.
- D) brains.
- E) sudden changes in the environment.

Answer: E

Diff: 1 Page Ref: 29

Topic: 2.2 Human Evolution

45) Scientists who study fossils are called

- A) archaeologists.
- B) evolutionists.
- C) podiatrists.
- D) geologists.
- E) paleontologists.

Answer: E

Diff: 2 Page Ref: 29

Topic: 2.2 Human Evolution

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

- A) about 61%
- B) about 31%
- C) about 4.5%
- D) less than 1%
- E) about 9%

Answer: D

Diff: 2 Page Ref: 30

Topic: 2.2 Human Evolution

47) Which of the following are evolutionary changes that are not adaptive?

- A) spandrels
- B) exaptations
- C) homologous structures
- D) analogous structures
- E) both B and C

Answer: A

Diff: 3 Page Ref: 30

Topic: 2.2 Human Evolution

48) Which of the following evolved to perform one function and was then co-opted to perform another?

- A) exaptation
- B) spandrel
- C) homologue
- D) analogue
- E) none of the above

Answer: A

Diff: 2 Page Ref: 31

Topic: 2.2 Human Evolution

49) Convergent evolution produces structures that are

- A) convergent.
- B) analogous.
- C) homologous.
- D) both A and C
- E) both B and C

Answer: B

Diff: 3 Page Ref: 32

Topic: 2.2 Human Evolution

50) A bird's wing and a bee's wing are

- A) convolutions.
- B) cerebral.
- C) convergent.
- D) homologous.
- E) analogous.

Answer: E

Diff: 2 Page Ref: 32

Topic: 2.2 Human Evolution

51) Early research on the evolution of the brain focused on

- A) its size.
- B) the brain stem.
- C) the thalamus.
- D) the uvula.
- E) its chemistry.

Answer: A

Diff: 1 Page Ref: 31

Topic: 2.2 Human Evolution

52) Which species has a brain larger than the human brain?

- A) whale
- B) elephant
- C) chimpanzee
- D) all of the above
- E) both A and B

Answer: E

Diff: 2 Page Ref: 31

Topic: 2.2 Human Evolution

53) Modern adult human brains vary in size from about

- A) 1,000 to 2,000 grams.
- B) 10 to 20 grams.
- C) 1,400 to 1,500 grams.
- D) 1,300 to 1,400 grams.
- E) 1,350 to 1,360 grams.

Answer: A

Diff: 3 Page Ref: 31

Topic: 2.2 Human Evolution

54) In terms of which of the following measures of brain development are humans surpassed by shrews?

- 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

Diff: 2 Page Ref: 32

Topic: 2.2 Human Evolution

55) In general, the brain stem regulates

- A) thinking.
- B) memory.
- C) emotion.
- D) reflex activities critical for survival.
- E) vision.

Answer: D

Diff: 1 Page Ref: 32

Topic: 2.2 Human Evolution

56) During the course of human evolution, there has been a general increase in the

- A) size of the brain.
- B) number of cortical convolutions.
- C) size of the cortex.
- D) size of the cerebrum.
- E) all of the above

Answer: E

Diff: 1 Page Ref: 32

Topic: 2.2 Human Evolution

57) In most species, mating is totally

- A) monogamous.
- B) promiscuous.
- C) polygynous.
- D) polyandrous.
- E) asexual.

Answer: B

Diff: 2 Page Ref: 33

Topic: 2.2 Human Evolution

58) The field that focuses on the evolution of human behavior is

- A) the human genome.
- B) humanism.
- C) evolutionary psychology.
- D) behavioral evolution.
- E) human genetics.

Answer: C

Diff: 2 Page Ref: 33

Topic: 2.2 Human Evolution

59) The pattern of mate bonding that is most prevalent in mammals is

- A) promiscuity.
- B) polygyny.
- C) monogamy.
- D) polyandry.
- E) none of the above

Answer: B

Diff: 2 Page Ref: 33

Topic: 2.2 Human Evolution

60) According to one prominent theory, monogamy evolved in only those species

- A) in which each female could raise more fit young if she had undivided help.
- B) with opposable thumbs.
- C) with large brains.
- D) that used tools.
- E) all of the above

Answer: A

Diff: 2 Page Ref: 34

Topic: 2.2 Human Evolution

61) Mendel

- A) studied dichotomous pea-plant traits.
- B) began his experiments by crossing the offspring of true-breeding lines.
- C) collaborated with Darwin.
- D) all of the above
- E) both A and B

Answer: E

Diff: 3 Page Ref: 36

Topic: 2.3 Fundamental Genetics

62) Mendel's early 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 trait.
- C) offspring can inherit only those traits that are displayed by their parents.
- D) white seeds are dominant.
- E) some traits are dominant and some are recessive.

Answer: C

Diff: 2 Page Ref: 35

Topic: 2.3 Fundamental Genetics

- 63) An organism's observable traits are referred to as its
- A) genotype.
 - B) phenotype.
 - C) dominant traits.
 - D) recessive traits.
 - E) none of the above

Answer: B

Diff: 2 Page Ref: 36

Topic: 2.3 Fundamental Genetics

- 64) 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

Diff: 2 Page Ref: 36

Topic: 2.3 Fundamental Genetics

- 65) 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) none of the above

Answer: A

Diff: 2 Page Ref: 36

Topic: 2.3 Fundamental Genetics

- 66) 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 not homozygous for the recessive gene for that trait.
 - D) both parents were homozygous for the dominant gene for that trait.
 - E) both A and C

Answer: D

Diff: 3 Page Ref: 36

Topic: 2.3 Fundamental Genetics

- 67) 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

Diff: 1 Page Ref: 37

Topic: 2.3 Fundamental Genetics

- 68) Gametes are produced by
- A) mitosis.
 - B) mitotic cell division.
 - C) meiosis.
 - D) copulation
 - E) fertilization.

Answer: C

Diff: 2 Page Ref: 37

Topic: 2.3 Fundamental Genetics

69) 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%.

Answer: A

Diff: 2 Page Ref: 36

Topic: 2.3 Fundamental Genetics

70) The “letters” of the genetic code are

- A) deoxyribose bases.
- B) phosphates.
- C) nucleotide bases.
- D) amino acids.
- E) peptides.

Answer: C

Diff: 1 Page Ref: 36

Topic: 2.3 Fundamental Genetics

71) How many nucleotide bases are there in DNA?

- A) 1
- B) 2
- C) 4
- D) 5
- E) none of the above

Answer: C

Diff: 1 Page Ref: 36

Topic: 2.3 Fundamental Genetics

72) On the DNA molecule, cytosine binds to

- A) guanine.
- B) adenine.
- C) thymine.
- D) thiamine.
- E) uracil.

Answer: A

Diff: 2 Page Ref: 37

Topic: 2.3 Fundamental Genetics

73) In Down syndrome, there is

- A) no guanine.
- B) no adenine.
- C) no thymine.
- D) no cytosine.
- E) an extra chromosome in each cell.

Answer: E

Diff: 2 Page Ref: 37

Topic: 2.3 Fundamental Genetics

74) Accidental alteration in individual genes during replication is called

- A) crossing over.
- B) translation.
- C) linkage.
- D) mutation.
- E) self-duplication.

Answer: D

Diff: 2 Page Ref: 37

Topic: 2.3 Fundamental Genetic

75) Illustrated here is

- A) mitosis.
- B) meiosis.
- C) the replication of a DNA molecule.
- D) the replication of an RNA molecule.
- E) an enhancer.

Answer: C

Diff: 2 Page Ref: 37

Topic: 2.3 Fundamental Genetic



76) Female mammals have

- A) only one X chromosome.
- B) only one Y chromosome.
- C) two X chromosomes.

Answer: C

Diff: 1 Page Ref: 38

Topic: 2.3 Fundamental Genetics

- D) two Y chromosomes.
- E) both A and B

77) Color blindness occurs more frequently in males than in females because it is

- A) dominant.
- B) rare.
- C) quite common.

Answer: D

Diff: 3 Page Ref: 38

Topic: 2.3 Fundamental Genetics

- D) a recessive sex-linked trait.
- E) both A and B

78) Sex-linked traits that are controlled by dominant genes occur more frequently in

- A) females.
- B) males.
- C) neural disorders.

Answer: A

Diff: 3 Page Ref: 38

Topic: 2.3 Fundamental Genetics

- D) XY individuals.
- E) both B and D

79) Which of the following is a short segment of DNA that determines the rate at which a protein will be synthesized by a particular structural gene?

- A) ribosome
- B) enhancer
- C) codon

Answer: B

Diff: 2 Page Ref: 38

Topic: 2.3 Fundamental Genetics

- D) nucleotide
- E) codon segment

80) Proteins that bind to DNA and influence the rate at which particular structural genes will be expressed are called

- A) transcription factors.
- B) autosomes.
- C) enhancers.
- D) sex-linked traits.
- E) mutations.

Answer: A

Diff: 1 Page Ref: 38

Topic: 2.3 Fundamental Genetics

81) 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

Diff: 3 Page Ref: 39

Topic: 2.3 Fundamental Genetics

82) Each codon on a strand of messenger RNA

- A) comprises three consecutive bases 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) both A and B
- E) both A and C

Answer: D

Diff: 2 Page Ref: 39

Topic: 2.3 Fundamental Genetics

83) 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) none of the above

Answer: A

Diff: 2 Page Ref: 39

Topic: 2.3 Fundamental Genetics

84) Mitochondria are

- A) located in the nuclei of cells.
- B) located in the cytoplasm of cells.
- C) energy-generating structures of cells.
- D) both A and C
- E) both B and C

Answer: E

Diff: 3 Page Ref: 39

Topic: 2.3 Fundamental Genetics

- 85) All mitochondrial genes are inherited only
A) if they have undergone mutation. D) from one's siblings.
B) from one's mother. E) both A and B
C) from one's father.

Answer: B

Diff: 2 Page Ref: 39

Topic: 2.3 Fundamental Genetics

- 86) Arguably, the most ambitious scientific project of all time began in 1990: the
A) American space program. D) decade of the brain.
B) cognitive neuroscience project. E) theory of evolution.
C) human genome project.

Answer: C

Diff: 1 Page Ref: 39

Topic: 2.3 Fundamental Genetics

- 87) Construction of a detailed physical map of human chromosomes
A) began in earnest in 1960.
B) was completed by entirely by American scientists.
C) was completed in 1990.
D) was an attempt to locate all 3 billion human chromosomes.
E) none of the above

Answer: E

Diff: 3 Page Ref: 40

Topic: 2.3 Fundamental Genetics

- 88) The most surprising finding of the human genome project is that humans have
A) 7-base codons. D) so many genes.
B) many mutations. E) more genes than corn has.
C) relatively few protein-coding genes.

Answer: C

Diff: 2 Page Ref: 41

Topic: 2.3 Fundamental Genetics

- 89) How many structural (protein-coding) genes are there in the human genome?
A) about 20,000 D) 38 times more than in the mouse genome.
B) 1,000 times more than in the corn genome. E) both B and C
C) 8 times more than in the mouse genome.

Answer: A

Diff: 3 Page Ref: 41

Topic: 2.3 Fundamental Genetics

- 90) The following are topics that are the focus of modern genetics research:
A) alternative splicing. (pseudogenes) .
B) small RNAs. D) all of the above
C) active non-protein-coding areas of DNA E) none of the above

Answer: D

Diff: 3 Page Ref: 41

Topic: 2.3 Fundamental Genetics

- 91) Many people overestimate the degree to which the human genome project will immediately contribute to the understanding of human development because they fail to appreciate that
- A) the first stage of the human genome project is still decades from completion.
 - B) it is still necessary to identify the timing of the expression of each gene throughout the lifespan.
 - C) it is still necessary to determine how genes interact and are affected by experience.
 - D) both A and C
 - E) both B and C

Answer: E

Diff: 3 Page Ref: 42

Topic: 2.3 Fundamental Genetics

- 92) Ontogeny
- A) is in the cytoplasm.
 - B) occurs in the cytoplasm.
 - C) refers to evolutionary development.
 - D) refers to hominin migration.
 - E) none of the above

Answer: E

Diff: 2 Page Ref: 42

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

- 93) Tryon is famous for
- A) twin studies of IQ.
 - B) selectively breeding so-called maze bright and maze dull strains of rats.
 - C) studies of genetic mutation.
 - D) research on bird song.
 - E) the discovery PKU.

Answer: B

Diff: 2 Page Ref: 42

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

- 94) Searle (1949) found that, in comparison to maze-dull rats, maze-bright rats were
- A) not generally superior in learning ability.
 - B) less emotional.
 - C) more emotional.
 - D) both A and B
 - E) both A and C

Answer: D

Diff: 3 Page Ref: 43

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

- 95) Cooper and Zubek (1958) 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

Diff: 3 Page Ref: 43

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

96) Which of the following disorders was discovered by Asbjörn Fölling, a Norwegian dentist?

- A) schizophrenia
- B) Korsakoff's syndrome
- C) phenylketonuria
- D) Parkinsonism
- E) Down syndrome

Answer: C

Diff: 2 Page Ref: 43

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

97) People with phenylketonuria have high levels of urinary

- A) PKU.
- B) phenylpyruvic acid.
- C) phenylalanine hydroxylase.
- D) tyrosine.
- E) none of the above

Answer: B

Diff: 3 Page Ref: 43

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

98) People with PKU lack the enzyme

- A) that converts phenylalanine to tyrosine.
- B) phenylpyruvic acid.
- C) phenylalanine hydroxylase.
- D) both A and B
- E) both A and C

Answer: E

Diff: 3 Page Ref: 45

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

99) 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) all of the above
- E) both B and C

Answer: A

Diff: 3 Page Ref: 44

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

100) PKU is transmitted by a

- A) recessive gene mutation.
- B) pair of dominant genes.
- C) dominant gene mutation.
- D) triad of recessive genes.
- E) single extra chromosome 23.

Answer: A

Diff: 2 Page Ref: 44

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

101) The sensitive period is a period of

- A) heat.
- B) sexual receptivity.
- C) fertility.
- D) all of the above
- E) none of the above

Answer: E

Diff: 2 Page Ref: 44

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

- 102) The sensitive period for PKU is the early period during which
- A) identified sufferers are fed phenylalanine-reduced diets.
 - B) excessive phenylalanine has substantial effects on neural development.
 - C) phenylalanine can be converted to phenylalanine hydroxylase.
 - D) all of the above
 - E) both A and B

Answer: E

Diff: 3 Page Ref: 44

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

- 103) The male birds of many species are most likely to learn
- A) any birdsong that they hear during the motor phase.
 - B) the songs of their own species that they hear during the motor phase.
 - C) any birdsong that they hear during the sensory phase.
 - D) the songs of their own species that they hear during the sensory phase.
 - E) both A and C

Answer: D

Diff: 3 Page Ref: 44

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

- 104) The sensorimotor phase of birdsong development
- A) occurs just before the sensory phase.
 - B) begins as soon a bird is hatched.
 - C) does not exist.
 - D) occurs only in females.
 - E) begins with subsong.

Answer: E

Diff: 3 Page Ref: 44

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

- 105) The first twittering efforts of young birds are often called
- A) clucking.
 - B) sing-song.
 - C) babbling.
 - D) subsong.
 - E) dialectic.

Answer: D

Diff: 2 Page Ref: 44

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

- 106) Bird song is commonly studied in
- A) white-crowned sparrows.
 - B) zebra finches.
 - C) canaries.
 - D) all of the above
 - E) none of the above

Answer: D

Diff: 2 Page Ref: 45

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

- 107) Zebra finches and white-crowned sparrows are _____ birdsong learners; canaries are _____ birdsong learners.
- A) age-limited; open-ended
 - B) rapid; slow
 - C) slow; rapid
 - D) open-ended; age-limited
 - E) closed-ended; age-limited

Answer: A

Diff: 3 Page Ref: 45

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

108) In many song birds, the voice box or _____ is a double structure.

- A) high vocal center
- B) robust nucleus
- C) syrinx
- D) hypoglossal nucleus
- E) archistriatum

Answer: C

Diff: 2 Page Ref: 45

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

109) Canaries can sing with either their left or right hemispheres, but

- A) they cannot sing the same song with both at the same time.
- B) most have a strong left-hemisphere preference.
- C) they cannot sing with their left hemisphere and their syrinx at the same time.
- D) most have a strong right-hemisphere preference.
- E) they cannot sing with their syrinx.

Answer: B

Diff: 2 Page Ref: 45

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

110) The canary song-control neural circuit is remarkable because the

- A) left descending motor circuit plays a greater role than the right.
- B) high vocal center is four times larger in males than in females.
- C) male song-control brain structures grow each spring.
- D) new neurons are added to the male song-control brain structures each spring.
- E) all of the above

Answer: E

Diff: 3 Page Ref: 45

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

111) Identical is to fraternal 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

Diff: 2 Page Ref: 46

Topic: 2.5 Genetics of Human Psychological Differences

112) The most extensive study of twins reared apart is the

- A) British study.
- B) Canadian study.
- C) New York study.
- D) Minnesota study.
- E) North African study.

Answer: D

Diff: 1 Page Ref: 46

Topic: 2.5 Genetics of Human Psychological Differences

113) In the Minnesota study, the heritability estimate for IQ was 70%. This means that IQ is

- A) 70% genetic.
- B) about 30% environmental.
- C) about 70% genetic.
- D) both B and C
- E) none of the above

Answer: E

Diff: 3 Page Ref: 47

Topic: 2.5 Genetics of Human Psychological Differences

114) A heritability estimate is

- A) an estimate of the proportion of a trait that is attributable to genetics.
- B) an estimate of the proportion of between-subject variability occurring in a particular trait in a particular study that resulted from genetic differences among the subjects of that study.
- C) likely to be higher in studies with little environmental variation.
- D) both A and C
- E) both B and C

Answer: E

Diff: 3 Page Ref: 47

Topic: 2.5 Genetics of Human Psychological Differences

115) In the study of heritability estimates, increasing the genetic diversity of the subjects 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

Diff: 3 Page Ref: 47

Topic: 2.5 Genetics of Human Psychological Differences

116) When a particular gene encourages a developing individual to select experiences that increase the behavioral effects of the gene, the gene is said to have a

- A) nature-nurture interaction.
- B) nurture-nature interaction.
- C) multiplier effect.
- D) summated heritability estimate.
- E) sensory phase.

Answer: C

Diff: 2 Page Ref: 48

Topic: 2.5 Genetics of Human Psychological Differences

117) Pinel ended his discussion of the genetics of human psychological differences with a description of the study of Turkheimer and colleagues (2003). The important finding of this study was that

- A) among the very poor, the heritability estimate of IQ was close to zero.
- B) among the affluent, the heritability estimate of IQ was close to one.
- C) IQ in adult humans is almost entirely genetic.
- D) both A and B
- E) both B and C

Answer: D

Diff: 3 Page Ref: 48

Topic: 2.5 Genetics of Human Psychological Differences

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

Diff: 2 Page Ref: 21

Topic: 2.1 Thinking about the Biology of Behavior

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

Answer: parietal lobe

Diff: 3 Page Ref: 22

Topic: 2.1 Thinking about the Biology of Behavior

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

Answer: Origin of Species

Diff: 3 Page Ref: 24

Topic: 2.2 Human Evolution

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

Answer: offspring

Diff: 2 Page Ref: 26

Topic: 2.2 Human Evolution

5) Mammals evolved from a line of small _____.

Answer: reptiles

Diff: 3 Page Ref: 28

Topic: 2.2 Human Evolution

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

Answer: Australopithecus

Diff: 3 Page Ref: 29

Topic: 2.2 Human Evolution

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

Answer: spandrels

Diff: 3 Page Ref: 30

Topic: 2.2 Human Evolution

8) Similarities between _____ structures result from convergent evolution.

Answer: analogous

Diff: 3 Page Ref: 31

Topic: 2.2 Human Evolution

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

Answer: alleles

Diff: 2 Page Ref: 36

Topic: 2.3 Fundamental Genetics

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

Answer: 23

Diff: 1 Page Ref: 36

Topic: 2.3 Fundamental Genetics

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

Answer: thymine

Diff: 3 Page Ref: 39

Topic: 2.3 Fundamental Genetics

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

Answer: Messenger

Diff: 1 Page Ref: 39

Topic: 2.3 Fundamental Genetics

13) Proteins are long chains of _____.

Answer: amino acids

Diff: 1 Page Ref: 39

Topic: 2.3 Fundamental Genetics

14) Maze-bright rats are less _____ than maze-dull rats.

Answer: emotional

Diff: 2 Page Ref: 43

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

15) Individuals with PKU normally have high levels of _____ in their urine unless they eat a phenylalanine-free diet.

Answer: phenylpyruvic acid

Diff: 3 Page Ref: 44

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

16) Subsongs mark the beginning of the second phase of birdsong development: the _____ phase.

Answer: sensorimotor

Diff: 2 Page Ref: 44

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

17) Monozygotic twins are more commonly called _____ twins.

Answer: identical

Diff: 1 Page Ref: 46

Topic: 2.5 Genetics of Human Psychological Differences

18) Turkheimer and colleagues (2003) found that the heritability estimate of IQ among the very poor was close to _____.

Answer: zero

Diff: 3 Page Ref: 48

Topic: 2.5 Genetics of Human Psychological Differences

ESSAY AND OTHER MULTIPLE-MARK QUESTIONS

1) Discuss the history and current view of the nature-nurture issue.

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

Diff: 2 Page Ref: 21-24

Topic: 2.1 Thinking about the Biology of Behavior

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

Answer:

50% for a verbal explanation of the model

50% for a diagram of the model

Diff: 3 Page Ref: 24-25

Topic: 2.1 Thinking about the Biology of Behavior

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

Diff: 3 Page Ref: 27-29

Topic: 2.2 Human Evolution

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

Answer:

50% for explaining four common misconceptions about evolution

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

Diff: 2 Page Ref: 29-31

Topic: 2.2 Human Evolution

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

Answer:

25% for describing the transcription of mRNA

50% for describing the translation of mRNA to protein

25% for a diagram of the process

Diff: 2 Page Ref: 38-39

Topic: 2.3 Fundamental Genetics

6) Discuss the human genome project and its major finding. How much does it contribute to our knowledge of brain function? 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 surprising finding of the human genome project

25% for describing at least two important lines of research that have been stimulated by the human genome project

25% for explaining the limitations of the human genome project in furthering understanding of behavior

Diff: 3 Page Ref: 39-42

Topic: 2.3 Fundamental Genetics

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 two of maze brightness, PKU, or bird song

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

Diff: 2 Page Ref: 42-45

Topic: 2.4 Behavioral Development: Genetic Factors and Experience

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.

Diff: 3 Page Ref: 46-48

Topic: 2.4 Behavioral Development: Genetic Factors and Experience