The Essence of Anthropology 4th edition Haviland Test Bank

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True / False

1. Evolution is the central organizing principle of the biological sciences.
    a. True
    b. False

ANSWER: True
REFERENCES: 31
OTHER: Factual
NOTES: Pickup

2. Linnaeus's classificatory system reflected a new understanding of life on earth at that time.
    a. True
    b. False

ANSWER: True
REFERENCES: 32
OTHER: Conceptual
NOTES: New

3. Humans are primates.
    a. True
    b. False

ANSWER: True
REFERENCES: 32
OTHER: Factual
NOTES: Pickup

4. The "system of nature" is an approach to classify all of animate and inanimate nature.
    a. True
    b. False

ANSWER: False
REFERENCES: 32
OTHER: Factual
NOTES: Pickup

5. Taxonomy is an ancient form of classification created by Linnaeus that is no longer used today.
    a. True
    b. False

ANSWER: False
REFERENCES: 32
OTHER: Factual
NOTES: Pickup

6. A bat's wing is analogous to a human hand.
    a. True
    b. False

ANSWER: False

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REFERENCES: 32
OTHER: Conceptual
NOTES: Pickup

7. Uniformitarianism is a more recent theory than catastrophism.
   a. True
   b. False
ANSWER: True
REFERENCES: 33
OTHER: Factual
NOTES: New

8. Even prior to Darwin's publication, many European naturalists accepted the idea that life had evolved.
   a. True
   b. False
ANSWER: True
REFERENCES: 33
OTHER: Conceptual
NOTES: Pickup

9. Mendel published his findings in a respectable scientific journal, but no one understood their significance until after his death.
   a. True
   b. False
ANSWER: True
REFERENCES: 35
OTHER: Conceptual
NOTES: Pickup

10. Genes are particulate, meaning that they are separate structures rather than portions of DNA.
   a. True
   b. False
ANSWER: False
REFERENCES: 36
OTHER: Conceptual
NOTES: Pickup

11. Darwin could not initially understand how variation occurred in living organisms.
   a. True
   b. False
ANSWER: True
REFERENCES: 35
OTHER: Conceptual
NOTES: New

12. DNA provides the instruction for the thousands of proteins that keep us healthy every day.

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a. True
b. False

ANSWER: True
REFERENCES: 36
OTHER: Factual
NOTES: Pickup

13. The complete sequence of human DNA is called the genome.
a. True
b. False

ANSWER: True
REFERENCES: 37
OTHER: Factual
NOTES: Pickup

14. If two body cells merge in meiosis, the result is a cell with 46 pairs of chromosomes.
a. True
b. False

ANSWER: False
REFERENCES: 40
OTHER: Factual
NOTES: Pickup

15. Testing for DNA is the best way to determine those who form part of an individual's family.
a. True
b. False

ANSWER: False
REFERENCES: 41
OTHER: Conceptual
NOTES: New

16. When two alleles on the same gene are not identical, they are called heterozygous.
a. True
b. False

ANSWER: True
REFERENCES: 42
OTHER: Factual
NOTES: New

17. In the search for disease cures, scientists often predict an individual's genotype.
a. True
b. False

ANSWER: False
REFERENCES: 42
OTHER: Conceptual
NOTES: Pickup

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18. The only source of new genetic material is random drift.
    a. True
    b. False
ANSWER: False
REFERENCES: 44
OTHER: Factual
NOTES: Pickup

19. Founder effects are a kind of genetic drift.
    a. True
    b. False
ANSWER: True
REFERENCES: 45
OTHER: Conceptual
NOTES: Pickup

20. The existence of *Homo sapiens* as an interbreeding species is due to gene flow.
    a. True
    b. False
ANSWER: True
REFERENCES: 46
OTHER: Factual
NOTES: Pickup

21. Ultimately, all natural selection is measured in terms of reproductive success.
    a. True
    b. False
ANSWER: True
REFERENCES: 46
OTHER: Conceptual
NOTES: New

22. In sickle-cell anemia, the individual does not produce any red blood cells.
    a. True
    b. False
ANSWER: False
REFERENCES: 47
OTHER: Factual
NOTES: New

23. Cultural processes complicate studies of biological adaptation.
    a. True
    b. False
ANSWER: True
REFERENCES: 48

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OTHER: Conceptual
NOTES: New

24. Speciation always occurs quite rapidly.
    a. True
    b. False
ANSWER: False
REFERENCES: 49
OTHER: Factual
NOTES: New

25. Cladogenesis is a sustained directional shift in a population's gene pool.
    a. True
    b. False
ANSWER: False
REFERENCES: 49
OTHER: Factual
NOTES: New

Multiple Choice

26. How do anthropologists classify the Nez Perce story about Coyote and Wishpoosh?
    a. apocalyptic myth
    b. salvation myth
    c. children's myth
    d. creation myth
ANSWER: d
REFERENCES: 31
OTHER: Conceptual
NOTES: Pickup

27. Which of the following describes the primary difference between creation stories and evolution?
    a. Creation stories are particular to cultures, and evolution is bound by hypotheses and scientific language.
    b. Creation stories are cyclical in nature, and evolution is a linear theory.
    c. Evolution explains how things change, and creation stories do not change.
    d. Evolution is a Western theory, and creation stories are not found in the West.
ANSWER: a
REFERENCES: 31
OTHER: Conceptual
NOTES: New

28. Evolution can be described as:
    a. an anti-creationist account of the origin of life
    b. the foundation of culture in contemporary society
    c. the major organizing principle of the biological sciences
    d. the major organizing principle of the social sciences

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ANSWER: c
REFERENCES: 31
OTHER: Factual
NOTES: Pickup

29. All of the following are true of evolution except:
    a. It provides an explanation for the diversity of life.
    b. It emphasizes human uniqueness and human origin.
    c. It utilizes hypotheses as a way of testing.
    d. It uses consistent scientific language.

ANSWER: b
REFERENCES: 31
OTHER: Conceptual
NOTES: New

30. Which of the following statements is false?
    a. Evolution explains diversity through scientific language using hypotheses.
    b. Evolution explains diversity through scientific language using theories.
    c. Evolution can explain diversity, and creation myths cannot.
    d. Creation myths and evolutionary accounts do not differ in any substantial way.

ANSWER: d
REFERENCES: 31
OTHER: Conceptual
NOTES: Modify

31. Which scientist developed the *Systema Naturae*?
    a. Aristotle
    b. Carolus Linnaeus
    c. Jean-Baptiste Lamarck
    d. Charles Darwin

ANSWER: b
REFERENCES: 32
OTHER: Factual
NOTES: Pickup

32. Which of the following is the smallest working unit in biological classification?
    a. phylum
    b. mammal
    c. genus
    d. species

ANSWER: d
REFERENCES: 32
OTHER: Factual
NOTES: New

33. Linnaeus noted the similarities among humans, monkeys, and apes and classified them as:

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a. hominids
b. primates
c. anthropoids
d. apes

ANSWER: b
REFERENCES: 32
OTHER: Factual
NOTES: New

34. Mammals have all of the following characteristics except:
a. They have body hair.
b. They nurse their young.
c. They do not give birth to live young.
d. They include the primates.

ANSWER: c
REFERENCES: 32
OTHER: Factual
NOTES: New

35. A reproductively isolated population or group capable of interbreeding to produce fertile offspring is a:
a. genus
b. category
c. family
d. species

ANSWER: d
REFERENCES: 32
OTHER: Factual
NOTES: Pickup

36. How would you best describe a genus?
a. a group of like species
b. a subdivision of species
c. a subspecies
d. archaic forms of species

ANSWER: a
REFERENCES: 32
OTHER: Conceptual
NOTES: Pickup

37. Linnaeus based his classificatory system on each of the following except:
a. sequence of bodily growth
b. body structure
c. body function
d. body size

ANSWER: d
REFERENCES: 32

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OTHER: Conceptual
NOTES: New

38. *Homo* describes a human:
a. order
b. homology
c. genus
d. species
ANSWER: c
REFERENCES: 32
OTHER: Factual
NOTES: Pickup

39. The comparison of the anatomical structures of wings on a bat to the wings on a butterfly is an example of:
a. homology
b. taxonomy
c. analogy
d. phylogeny
ANSWER: c
REFERENCES: 32
OTHER: Conceptual
NOTES: Pickup

40. The comparison of the anatomical structures of a human arm to the wing of a bat is an example of:
a. homology
b. taxonomy
c. analogy
d. phylogeny
ANSWER: a
REFERENCES: 32
OTHER: Conceptual
NOTES: Pickup

41. Invoking natural events, such as the great flood in the Book of Genesis, to account for species disappearance is an example of:
a. exploitation
b. system of nature
c. Great Chain of Being
d. catastrophism
ANSWER: d
REFERENCES: 33
OTHER: Conceptual
NOTES: Pickup

42. The theory that maintains that although some changes in the earth's surface are immediately observable and caused by erosion and other natural processes, other changes are caused by gradual processes over extremely long periods of time is

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called:

a. natural selection
b. catastrophism
c. linearism
d. uniformitarianism

ANSWER: d
REFERENCES: 33
OTHER: Factual
NOTES: New

43. Of the following, which is the widest (most broad and inclusive) taxonomic category?

a. family
b. order
c. phylum
d. species

ANSWER: c
REFERENCES: 33
OTHER: Factual
NOTES: Modify

44. Darwin's theory was known as the theory of:

a. natural selection
b. natural variation
c. animal evolution
d. circumnavigation

ANSWER: a
REFERENCES: 34
OTHER: Factual
NOTES: Pickup

45. Who proposed that animal populations remained stable over time because of the high proportion of animal offspring not surviving to maturity?

a. Gregor Mendel
b. Charles Darwin
c. Thomas Malthus
d. Charles Lyell

ANSWER: c
REFERENCES: 34
OTHER: Factual
NOTES: Pickup

46. Whose research developed the basic laws of heredity?

a. Gregor Mendel
b. Charles Lyell
c. Thomas Malthus
d. Charles Darwin

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ANSWER: a
REFERENCES: 35
OTHER: Factual
NOTES: Modify

47. Today, Darwin's evolutionary theory is supported by data from all of the following except:
    a. population genetics
    b. heredity
    c. molecular genetics
    d. protogenetics

ANSWER: d
REFERENCES: 35
OTHER: Conceptual
NOTES: Modify

48. What was scientific about Gregor Mendel's approach to gardening?
    a. He was a scientist and worked to create commercial plants.
    b. He took systematic notes and was able to identify patterns of heredity.
    c. He bred garden plants to obtain higher yields.
    d. He worked to breed garden plants to obtain better varieties.

ANSWER: b
REFERENCES: 35
OTHER: Conceptual
NOTES: Modify

49. The principle that variants of genes for a particular trait retain their separate identities through the generations is called:
    a. natural selection
    b. law of segregation
    c. law of heredity
    d. law of independent assortment

ANSWER: b
REFERENCES: 36
OTHER: Factual
NOTES: Pickup

50. A portion of the DNA molecule containing a sequence of base pairs that encodes a particular protein is known as a:
    a. gene
    b. allele
    c. double helix
    d. chromosome

ANSWER: a
REFERENCES: 36
OTHER: Factual
NOTES: Pickup

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51. Mendel discovered that inheritance was particulate, not:
    a. blended
    b. separated
    c. molded
    d. selected
ANSWER: a
REFERENCES: 36
OTHER: Factual
NOTES: Pickup

52. Alleles are:
    a. the cell nucleus
    b. structures that carry specific proteins
    c. alternate forms of a single gene
    d. pieces of DNA
ANSWER: c
REFERENCES: 36
OTHER: Factual
NOTES: Pickup

53. Sex cell division is called:
    a. independent assortment
    b. segregation
    c. meiosis
    d. mitosis
ANSWER: c
REFERENCES: 40
OTHER: Factual
NOTES: Pickup

54. Which of the following is not one of the four base pairs?
    a. glucosamine
    b. cytosine
    c. adenine
    d. thymine
ANSWER: a
REFERENCES: 37
OTHER: Factual
NOTES: Pickup

55. The process of transcription is related to:
    a. the conversion of DNA into a protein
    b. the division of cells in a sister chromatid
    c. the replication of cells in segregation
    d. mutation events in reproduction
ANSWER: a

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REFERENCES: 37
OTHER: Conceptual
NOTES: New

56. In protein synthesis, all of the following are involved except:
    a. RNA
    b. ribosomes
    c. codon
    d. fovea centralis
ANSWER: d
REFERENCES: 37
OTHER: Factual
NOTES: New

57. Cell division begins when chromosomal DNA replicates and each chromosome becomes a pair of:
    a. nuclei
    b. sister chromatids
    c. mother chromatids
    d. eukaryotes
ANSWER: b
REFERENCES: 38
OTHER: Conceptual
NOTES: New

58. Cell division that involves exact replication of parent cells is called:
    a. mitosis
    b. mitochondriosis
    c. meiosis
    d. cloning
ANSWER: a
REFERENCES: 38
OTHER: Factual
NOTES: Pickup

59. Proteins are significant to the life of the organism in various ways. Those that initiate and direct chemical reactions are called:
    a. enzymes
    b. protons
    c. codons
    d. ribosomes
ANSWER: a
REFERENCES: 37
OTHER: Factual
NOTES: New

60. Which of the following terms best describes the 3 billion chemical bases with 20,000 to 25,000 genes that define

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humans?

a. ribosome
b. genome
c. enzyme
d. transcription

ANSWER: b
REFERENCES: 37
OTHER: Factual
NOTES: New

61. During meiosis, genes are divided into:

a. two new cells
b. four new cells
c. six new cells
d. eight new cells

ANSWER: b
REFERENCES: 40
OTHER: Factual
NOTES: Pickup

62. In the "Biocultural Connection," why did the U.S. government support using DNA tests at the Dadaab refugee camp in Nairobi, Kenya?

a. to test individuals for basic health and determine carriers of disease
b. to test asylum seekers to determine whether they were related to a U.S. citizen
c. to test families to see if they were legitimate refugees in the U.S. facility there
d. to test whether any of those seeking asylum has originated in the United States

ANSWER: b
REFERENCES: 41
OTHER: Conceptual
NOTES: New

63. What deficiencies were revealed in the DNA testing protocol among refugees in the Dadaab refugee camp in Nairobi, Kenya?

a. Family relationship is not solely constituted by biology.
b. Families did not always carry the same types of genetic markers.
c. Families did not understand why DNA was needed and often refused.
d. Families did not want to live with relatives in the United States.

ANSWER: a
REFERENCES: 41
OTHER: Conceptual
NOTES: New

64. If a young man has type A blood, this is his:

a. DNA
b. genome
c. phenotype

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d. genotype

ANSWER: c
REFERENCES: 42
OTHER: Factual
NOTES: Pickup

65. Chimpanzees and humans share what percentage of DNA similarity?
a. 90
b. 95
c. 97
d. 98

ANSWER: d
REFERENCES: 43
OTHER: Factual
NOTES: Pickup

66. The chimp's genome is estimated to be what percentage larger than the human's?
a. 50
b. 75
c. 10
d. 25

ANSWER: c
REFERENCES: 43
OTHER: Factual
NOTES: Pickup

67. Because type O blood is codominant, a woman with type O blood knows that OO is her:
a. DNA
b. genome
c. phenotype
d. genotype

ANSWER: d
REFERENCES: 42
OTHER: Conceptual
NOTES: Pickup

68. Which of the following best describes polygenetic inheritance?
a. An individual receives multiple alleles from more than two parents.
b. Characteristics resulting from polygenetic inheritance exhibit a wide variation in genotypic expression.
c. Characteristics resulting from polygenetic inheritance exhibit a wide variation in phenotypic expression.
d. Characteristics most commonly result in mutation.

ANSWER: c
REFERENCES: 44
OTHER: Conceptual
NOTES: New

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69. All of the following are evolutionary forces except:
    a. genetic drift
    b. gene flow
    c. genetic cloning
    d. mutation
ANSWER: c
REFERENCES: 44
OTHER: Factual
NOTES: Pickup

70. In evolutionary terms, what kind of force is mutation?
    a. It is negative because mutation decreases chances for survival.
    b. It is positive because it provides variation for selection.
    c. It is neutral because variation does not matter in the long run.
    d. Mutation cannot be evaluated in these terms.
ANSWER: b
REFERENCES: 44
OTHER: Conceptual
NOTES: Pickup

71. What variable force is most important to adaptation over time?
    a. founder effects
    b. genetic drift
    c. random mutation
    d. gene flow
ANSWER: c
REFERENCES: 44
OTHER: Conceptual
NOTES: Pickup

72. Chance fluctuations of allele frequencies in the gene pool of a population are evidences of:
    a. genetic drift
    b. gene flow
    c. mutation
    d. directional selection
ANSWER: a
REFERENCES: 44
OTHER: Factual
NOTES: Pickup

73. Founder effects is a type of:
    a. gene flow
    b. genetic drift
    c. natural selection
    d. environmental selection
ANSWER: b

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REFERENCES: 45
OTHER: Factual
NOTES: Pickup

74. A small group of people with several color-blind individuals moves from the mainland to a previously uninhabited, secluded island. Two hundred years later, 5 percent of the people of the island have color-blindness. This is an example of:

a. founder effects
b. population bottleneck
c. mutation
d. gene flow

ANSWER: a
REFERENCES: 45
OTHER: Conceptual
NOTES: Pickup

75. Interbreeding allows for:

a. gene flow
b. genetic drift
c. genetic cloning
d. genetic testing

ANSWER: a
REFERENCES: 46
OTHER: Conceptual
NOTES: Modify

76. Which evolutionary force keeps populations from developing into separate species?

a. founder effects
b. mutation
c. random genetic drift
d. gene flow

ANSWER: d
REFERENCES: 46
OTHER: Conceptual
NOTES: Modify

77. A painful disease in which oxygen-carrying red blood cells change into abnormal shapes is called:

a. anemia
b. natural blood selection
c. trisomy 21
d. sickle-cell anemia

ANSWER: d
REFERENCES: 47
OTHER: Factual
NOTES: Pickup

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78. Adaptation can best be described as:
    a. an inherited form of anemia caused by a mutation
    b. dominant characteristics in the gene pool
    c. a series of beneficial adjustments to the environment
    d. the introduction of alleles from the gene pool of a nonnative population
ANSWER: c
REFERENCES: 46
OTHER: Conceptual
NOTES: Pickup

79. Ultimately all natural selection is biologically measured in terms of:
    a. reproductive success
    b. environmental adaptation
    c. macroevolution
    d. random genetic frequency
ANSWER: a
REFERENCES: 46
OTHER: Conceptual
NOTES: New

80. The biological term *fitness* refers to:
    a. physical and mental prowess
    b. physical stamina and longevity
    c. reproductive potential
    d. stabilizing influences
ANSWER: c
REFERENCES: 46
OTHER: Conceptual
NOTES: New

81. Each of the following commonly affects mutation rates except:
    a. stress
    b. radiation
    c. antibiotics
    d. fitness
ANSWER: d
REFERENCES: 44
OTHER: Conceptual
NOTES: New

82. Which of the following statements about adaptation is incorrect?
    a. Many traits have no adaptive function.
    b. Adaptations are adjustments to a specific environment.
    c. Adaptation at a genetic level reveals natural selection.
    d. Natural selection and adaptation always promote genetic change.
ANSWER: d

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REFERENCES: 46
OTHER: Conceptual
NOTES: New

83. When natural selection favors retention of an allele frequency because the population is well adapted, it is referred to as:

a. reproductive success
b. stabilizing selection
c. founder effects
d. directional selection

ANSWER: b
REFERENCES: 46
OTHER: Factual
NOTES: New

84. Sickle-cell anemia is found in highest frequencies in populations from:

a. East Africa
b. Central Arica
c. South Africa
d. North Africa

ANSWER: b
REFERENCES: 47
OTHER: Factual
NOTES: Modify

85. Scientists have found that carrying sickle-cell anemia (meaning, one is heterozygous) protects an individual from:

a. chicken pox
b. malaria
c. pneumonia
d. common cold

ANSWER: b
REFERENCES: 47
OTHER: Factual
NOTES: Pickup

86. The allele for sickle-cell anemia is believed to have originated in areas where there are large populations of mosquitoes bearing:

a. falciparum malaria
b. parasitic dysentery
c. smallpox
d. yellow fever

ANSWER: a
REFERENCES: 47
OTHER: Factual
NOTES: Modify

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87. The continuous gradation over space in the form or frequency of a genetic trait is known as a:

a. stabilizing selection
b. codon
c. cline
d. transcription

ANSWER: c
REFERENCES: 48
OTHER: Factual
NOTES: Modify

88. Why does a bulky body tend to conserve more heat than a slender one?

a. It has less surface area relative to volume.
b. It has more surface area relative to volume.
c. It has more fat regulation.
d. It is more layered, with fat covering muscles.

ANSWER: a
REFERENCES: 48
OTHER: Conceptual
NOTES: Pickup

89. Anthropologists study biological diversity among populations in terms of:

a. mutation
b. gene flow
c. clines
d. inheritance

ANSWER: c
REFERENCES: 48
OTHER: Conceptual
NOTES: New

90. Which of the following is most likely to suffer effects from summer heat?

a. someone with a slender body build and relatively long extremities
b. someone with a bulky body build and relatively short extremities
c. someone with a slender body build and relatively short extremities
d. someone with a bulky body build and rather long extremities

ANSWER: b
REFERENCES: 48
OTHER: Conceptual
NOTES: New

91. The formation of a new species is known as_____while _____focuses on the evolutionary relationships between related species.

a. macroevolution/microevolution
b. macroevolution/speciation
c. speciation/microevolution
d. speciation/macroevolution

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ANSWER: d
REFERENCES: 49
OTHER: Conceptual
NOTES: Pickup

92. A sustained directional shift in a population's average characteristics is called:
a. cladogenesis
b. genetic drift
c. anagenesis
d. speciation
ANSWER: c
REFERENCES: 49
OTHER: Factual
NOTES: Pickup

93. If two populations of primates were separated for a substantially long period of time by geographical changes, causing them, over time, to begin developing characteristics that distinguished them from each other, it could result in:
a. allelic homogeneity
b. allelic homogeneity
c. anagenesis
d. cladogenesis
ANSWER: d
REFERENCES: 49
OTHER: Conceptual
NOTES: Pickup

94. What do we call the factors that separate two breeding populations?
a. fission factors
b. isolating factors
c. punctuated equilibria
d. cladogenesis
ANSWER: a
REFERENCES: 49
OTHER: Factual
NOTES: Pickup

95. Achromatopsia is a condition sometimes caused by founder effects. It is also known as:
a. river blindness
b. color-blindness
c. light sensitivity
d. filter defect
ANSWER: b
REFERENCES: 45
OTHER: Factual
NOTES: New

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96. Why is the genetic comparison between humans and chimpanzees sometimes misleading?
a. It ignores qualitative differences between genomes.
b. It ignores quantitative differences between genomes.
c. It ignores individual differentiation within genomes.
d. It attempts to explain all diversity through a simple comparison.

ANSWER: b
REFERENCES: 43
OTHER: Conceptual
NOTES: New

97. In a heterozygous individual, the dominance of one allele means that:
a. the recessive allele has been lost or damaged
b. the recessive allele was not copied during mitosis
c. the recessive allele is not being expressed
d. the recessive allele is skipping generations

ANSWER: c
REFERENCES: 42
OTHER: Conceptual
NOTES: New

98. When two or more genes contribute to the phenotypic expression of a single characteristic, it is known as:
a. punctuated equilibrium
b. polygenetic inheritance
c. clinal expression
d. genetic drift

ANSWER: b
REFERENCES: 42
OTHER: Factual
NOTES: New

99. Which of the following best describes a karyotype?
a. It is the array of chromosomes found within a single cell.
b. It is the sequence of amino acids expressed within a protein.
c. It is a protein that directs chemical reactions.
d. It is the complete structure of DNA for a species.

ANSWER: a
REFERENCES: 37
OTHER: Factual
NOTES: New

100. Compared to other chromosomes, the Y chromosome is:
a. small and carries very little genetic information
b. small and carries much more genetic information
c. large and carries very little genetic information
d. large and carries much more genetic information

ANSWER: a

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REFERENCES: 38
OTHER: Conceptual
NOTES: New

Completion

101. A group of like species is a _____.
ANSWER: genus
REFERENCES: 32
OTHER: Factual
NOTES: Pickup

102. The major organizing principle of biological science is _____.
ANSWER: evolution
REFERENCES: 31
OTHER: Factual
NOTES: Pickup

103. The smallest working units of biological classification systems are _____.
ANSWER: species
REFERENCES: 32
OTHER: Factual
NOTES: Pickup

104. The science of classification is called _____.
ANSWER: taxonomy
REFERENCES: 32
OTHER: Factual
NOTES: Pickup

105. Sir Charles Lyell proposed a nonreligious theory to account for variations in the earth's surface over extremely long periods of time. It is called _____.
ANSWER: catastrophism
REFERENCES: 33
OTHER: Factual
NOTES: New

106. The wings of a bird and those of the butterfly are considered _____ structures.
ANSWER: analogous
REFERENCES: 33
OTHER: Conceptual
NOTES: Modify

107. James Watson and Francis _____ discovered the existence of DNA in 1953.
ANSWER: Crick
REFERENCES: 36

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OTHER: Factual
NOTES: Pickup

108. Darwin's theory is properly known as the theory of _____.
ANSWER: natural selection
REFERENCES: 34
OTHER: Factual
NOTES: New

109. The Mendelian principle that variants of a gene retain their separate identities through generations is the law of _____.
ANSWER: segregation
REFERENCES: 36
OTHER: Factual
NOTES: New

110. A sequence of chemical bases on a molecule of DNA constitutes a recipe for making _____.
ANSWER: proteins
REFERENCES: 37
OTHER: Conceptual
NOTES: Pickup

111. The process of conversion of instructions from DNA to RNA is called _____.
ANSWER: transcription
REFERENCES: 37
OTHER: Factual
NOTES: New

112. Sister chromatids are when two copies of the original chromosome are joined in the shape of a(n) _____.
ANSWER: X
REFERENCES: 38
OTHER: Factual
NOTES: New

113. When a gene contains identical alleles it is referred to as being _____.
ANSWER: homozygous
REFERENCES: 42
OTHER: Factual
NOTES: New

114. In the A-B-O blood system, an individual with type O has an OO _____.
ANSWER: genotype
REFERENCES: 42
OTHER: Factual
NOTES: New

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115. When neither allele is dominant, it is referred to as _____.
ANSWER: codominance
REFERENCES: 42
OTHER: Factual
NOTES: Pickup

116. The blood protein that carries oxygen is called _____.
ANSWER: hemoglobin
REFERENCES: 42
OTHER: Factual
NOTES: Pickup

117. The ultimate source of evolutionary change and all new genetic material is _____.
ANSWER: mutation
REFERENCES: 44
OTHER: Factual
NOTES: Modify

118. When an existing population splits up into two, the kind of genetic drift that occurs is called _____.
ANSWER: founder effects
REFERENCES: 45
OTHER: Conceptual
NOTES: Pickup

119. Adaptation is the outcome of _____.
ANSWER: natural selection
REFERENCES: 46
OTHER: Conceptual
NOTES: Pickup

120. Heterozygotes for sickle-cell anemia protect against _____.
ANSWER: malaria
REFERENCES: 47
OTHER: Factual
NOTES: Pickup

121. Anthropologists study biological diversity in terms of _____.
ANSWER: clines
REFERENCES: 48
OTHER: Conceptual
NOTES: Pickup

122. Sickle-cell anemia is caused by a mutation in the _____ protein.
ANSWER: hemoglobin
REFERENCES: 47

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OTHER: Factual
NOTES: New

123. Factors that separate breeding populations and lead to the creation of new species are called _____ mechanisms.
ANSWER: isolating
REFERENCES: 49
OTHER: Factual
NOTES: New

124. The macroevolutionary model of change called _____ suggests that evolution occurs via long periods of stability and then periods of rapid change.
ANSWER: punctuated equilibrium
REFERENCES: 49
OTHER: Factual
NOTES: New

125. The four evolutionary forces are natural selection, gene flow, mutation, and _____.
ANSWER: genetic drift
REFERENCES: 44
OTHER: Factual
NOTES: New

Subjective Short Answer

126. What criteria did Linnaeus use to establish his classificatory system?
ANSWER: Linnaeus based his classification on body structure, body function, and sequence of body growth.
REFERENCES: 32
OTHER: Factual
NOTES: Pickup

127. Distinguish analogies from homologies.
ANSWER: Analogies identify anatomical features of similar function across species, and homologies are structures possessed by two different organisms that arise in similar fashion and pass through similar stages during embryonic development but which have different functions.
REFERENCES: 32
OTHER: Factual
NOTES: Pickup

128. What distinguishes a creation story from the theory of evolution?
ANSWER: Evolution explains the diversity of life in a consistent scientific language using hypotheses.
REFERENCES: 31
OTHER: Conceptual
NOTES: New

129. Explain the theory of inheritance of acquired characteristics proposed by Jean-Baptiste Lamarck.
ANSWER: This theory argues that behavior brings about changes in organisms' forms.

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REFERENCES: 33
OTHER: Factual
NOTES: New

130. Describe the theory of natural selection.
ANSWER: There exists natural variation and the capacity for population to exceed capacity; thus, there is a struggle for existence in which nature selects the most advantageous variations so that species can evolve.
REFERENCES: 34
OTHER: Conceptual
NOTES: Pickup

131. Define Mendel's "law of independent assortment."
ANSWER: This law states that genes controlling different traits are inherited independently of one another.
REFERENCES: 36
OTHER: Conceptual
NOTES: New

132. In genetics, what does the term *translation* mean?
ANSWER: It is the process of conversion of RNA instructions into proteins.
REFERENCES: 37
OTHER: Factual
NOTES: New

133. Briefly describe the process of protein synthesis and the involvement of codons.
ANSWER: In protein synthesis, a codon specifies production of a particular amino acid, and the directions are converted into RNA that travels to the ribosomes where anticodons of transfer RNA transport it to the corresponding mRNA codons. The amino acids are joined together by peptide bonds forming a new protein.
REFERENCES: 37
OTHER: Conceptual
NOTES: New

134. Distinguish between genotype and phenotype.
ANSWER: Genotype is the genetic composition for a trait, whereas the phenotype is the expressed physical characteristic.
REFERENCES: 42
OTHER: Conceptual
NOTES: Pickup

135. Define polygenetic inheritance, and give one example of it.
ANSWER: This is when there are multiple genes that control a physical trait, such as body build, skin color, or susceptibility to disease.
REFERENCES: 42
OTHER: Factual
NOTES: New

136. Genetic drift and gene flow can be easily confused because of the similarities in their names. What is the difference

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between genetic drift and gene flow?

ANSWER: Genetic drift refers to chance fluctuations of allele frequencies of a population and can be seen in both founder's effect and population bottlenecks where a small group of people is isolated from a larger population and there is an increase in the expression of a certain gene. By contrast, gene flow refers to the introduction of alleles of one population into another. An example here would be an immigrant population who interbreeds with the existing population.

REFERENCES: 44-46

OTHER: Conceptual

NOTES: Pickup

137. Choose one kind of evolutionary force and explain it.

ANSWER: Students may choose and describe mutation, gene flow, genetic drift, or natural selection.

REFERENCES: 42-46

OTHER: Factual

NOTES: Modify

138. What are founder effects, and what can result from this?

ANSWER: Founder effects are a type of genetic drift that occurs when a small founding population, which does not possess all of the alleles present in the original population, breaks off. This can result in speciation.

REFERENCES: 45

OTHER: Conceptual

NOTES: New

139. What are some factors that increase the frequency of gene flow?

ANSWER: Interbreeding, migration, and geographical and social factors can increase gene flow.

REFERENCES: 46

OTHER: Conceptual

NOTES: Pickup

140. What is adaptation, and what is its role in natural selection?

ANSWER: Adaptation is a series of beneficial adjustments to the environment that can change the organism over time.

REFERENCES: 48

OTHER: Applied

NOTES: Pickup

141. What is sickle-cell anemia, and how is it adaptive?

ANSWER: This is a disease of misshapen red blood cells that clog the circulatory system. It is primarily carried by those of African ancestry who come from areas where malaria rates are high; carriers of sickle cells have an ability to better survive malaria.

REFERENCES: 47

OTHER: Conceptual

NOTES: Pickup

142. Describe some of the genetic variation that is most common to people native to colder regions of the world.

ANSWER: Individuals adapted to colder regions of the world tend to have bulkier bodies, a lower density of sweat glands, some circulatory system modifications, and shorter stature.

REFERENCES: 48

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OTHER: Conceptual
NOTES: Pickup

143. Compare and contrast cladogenesis with anagenesis.
ANSWER: Both are processes of speciation, but in cladogenesis, the original species branches out and separates, and in anagenesis, the original species itself changes over time into a new species.
REFERENCES: 49
OTHER: Conceptual
NOTES: Pickup

144. How does punctuated equilibrium differ from the Darwin model of gradual change over time?
ANSWER: Punctuated equilibrium is a model that argues that periods of stable change are occasionally punctuated by periods of rapid change.
REFERENCES: 49
OTHER: Conceptual
NOTES: New

Essay

145. Creationism has changed shape over the past decade. Discuss some of the major disagreements between creationism and evolution. Has your study of evolution in this chapter changed your understanding of this debate?
ANSWER: will vary
OTHER: Conceptual
NOTES: Pickup

146. Although human populations are subject to the same laws of natural selection as other species, humans also have extensive and elaborate culture. Choose and discuss two examples of cultural processes that complicate simple environmental adaptation.
ANSWER: will vary
OTHER: Conceptual
NOTES: Pickup

147. Discuss protein synthesis and the various ways that biological variation can (and does) occur within the individual organism during this process.
ANSWER: will vary
OTHER: Conceptual
NOTES: New

148. Describe how each of the four evolutionary forces contributes to an organism's adaptation.
ANSWER: will vary
OTHER: Conceptual
NOTES: Pickup

149. How does speciation occur? Use examples and discuss the evolutionary processes that are involved.
ANSWER: will vary
OTHER: Conceptual
NOTES: New

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