Concepts of Genetics 3rd edition Brooker Test Bank

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Concepts of Genetics, 3e **(Brooker)**
Chapter 1 Overview of Genetics

1) The basic unit of heredity is the _____.
A) individual
B) gene
C) macromolecule
D) trait

Answer: B
Section: 01.01
Topic: The Molecular Expression of Genes
Bloom's: 1. Remember
Learning Outcome: 01.01.02 Outline how DNA stores the information to make proteins.
Accessibility: Keyboard Navigation

2) A variation of a gene is called a(n) _____.
A) species
B) morph
C) genome
D) allele
E) proteome

Answer: D
Section: 01.02
Topic: The Relationship Between Genes and Traits
Bloom's: 1. Remember
Learning Outcome: 01.02.02 Define genetic variation.
Accessibility: Keyboard Navigation

3) Which of the following acts to accelerate chemical reactions in a cell?
A) nucleic acids
B) lipids
C) carbohydrates
D) enzymes

Answer: D
Section: 01.01
Topic: The Molecular Expression of Genes
Bloom's: 1. Remember
Learning Outcome: 01.01.03 Explain how proteins are largely responsible for cell structure and function.
Accessibility: Keyboard Navigation

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4) The building blocks of DNA are _____.
A) amino acids
B) carbohydrates
C) enzymes
D) nucleotides
E) lipids

Answer: D
Section: 01.01
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5) A cellular structure that contains genetic information is called a _____.
A) nucleotide
B) genetic code
C) chromosome
D) nucleic acid

Answer: C
Section: 01.01
Topic: The Molecular Expression of Genes
Bloom's: 1. Remember
Learning Outcome: 01.01.02 Outline how DNA stores the information to make proteins.
Accessibility: Keyboard Navigation

6) If a carbohydrate is going to be broken down for energy, which of the following molecules would be directly involved in the breakdown?
A) enzymes
B) nucleotides
C) microtubules
D) lipids
E) chromosomes

Answer: A
Section: 01.01
Topic: The Molecular Expression of Genes
Bloom's: 2. Understand
Learning Outcome: 01.01.03 Explain how proteins are largely responsible for cell structure and function.
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7) RNA is formed by the process of _____.
A) transcription
B) translation
C) both transcription and translation

Answer: A
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Learning Outcome: 01.01.02 Outline how DNA stores the information to make proteins.
Accessibility: Keyboard Navigation

8) A characteristic that an organism displays is called _____.
A) a gene
B) a chromosome
C) DNA
D) gene expression
E) a trait

Answer: E
Section: 01.02
Topic: The Relationship Between Genes and Traits
Bloom's: 1. Remember
Learning Outcome: 01.02.01 Outline how the expression of genes leads to an organisms traits.
Accessibility: Keyboard Navigation

9) If a geneticist is studying the prevalence of a trait in a species, they are at the _____ level of study.
A) population
B) organismal
C) cellular
D) molecular

Answer: A
Section: 01.02
Topic: The Relationship Between Genes and Traits
Bloom's: 2. Understand
Learning Outcome: 01.02.01 Outline how the expression of genes leads to an organisms traits.
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10) The study of the processes of transcription and translation is at the _____ level of biological organization.
A) population
B) organismal
C) cellular
D) molecular

Answer: D
Section: 01.02
Topic: The Relationship Between Genes and Traits
Bloom's: 1. Remember
Learning Outcome: 01.02.01 Outline how the expression of genes leads to an organisms traits.
Accessibility: Keyboard Navigation

11) Genetic variation is ultimately based upon which of the following?
A) morphological differences
B) variations in nucleotide sequence of the DNA
C) carbohydrate content of the cell
D) translation

Answer: B
Section: 01.02
Topic: The Relationship Between Genes and Traits
Bloom's: 2. Understand
Learning Outcome: 01.02.02 Define genetic variation.
Accessibility: Keyboard Navigation

12) A species that contains two copies of each chromosome is called _____.
A) a genetic mutation
B) a morph
C) haploid
D) diploid
E) alleles

Answer: D
Section: 01.02
Topic: The Relationship Between Genes and Traits
Bloom's: 1. Remember
Learning Outcome: 01.02.04 Describe how genes are transmitted in sexually reproducing species.
Accessibility: Keyboard Navigation

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13) A diploid cell within an organism's body that is not a reproductive cell is _____.
A) a gamete
B) a somatic cell
C) an allele
D) rare
E) a sperm cell

Answer: B
Section: 01.02
Topic: The Relationship Between Genes and Traits
Bloom's: 1. Remember
Learning Outcome: 01.02.04 Describe how genes are transmitted in sexually reproducing species.
Accessibility: Keyboard Navigation

14) In many organisms, one set of chromosomes comes from the maternal parent, while the other set comes from the paternal parent. Similar chromosomes in these sets are said to be _____.
A) morphs
B) alleles
C) haploid
D) homologs
E) physiological traits

Answer: D
Section: 01.02
Topic: The Relationship Between Genes and Traits
Bloom's: 1. Remember
Learning Outcome: 01.02.04 Describe how genes are transmitted in sexually reproducing species.
Accessibility: Keyboard Navigation

15) In humans, gametes are different than other cells of the body in that they are _____.
A) diploid
B) haploid
C) genetic mutations
D) morphs

Answer: B
Section: 01.02
Topic: The Relationship Between Genes and Traits
Bloom's: 1. Remember
Learning Outcome: 01.02.04 Describe how genes are transmitted in sexually reproducing species.
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16) What is natural selection?
A) When nongenetically based traits are passed from one generation to the next
B) A process that allows traits to remain the same over many generations
C) A process in which environmental constraints enable some phenotypes to be more successful than others
D) When one phenotype is as successful as all other phenotypes

Answer: C
Section: 01.02
Topic: The Relationship Between Genes and Traits
Bloom's: 2. Understand
Learning Outcome: 01.02.05 Describe the process of evolution.
Accessibility: Keyboard Navigation

17) _____ is the use of the information in gene sequences to synthesize functional proteins that affect cellular characteristics.
A) Loss-of-function mutation
B) Gene expression
C) The human genome project
D) Proteomics

Answer: B
Section: 01.01
Topic: The Molecular Expression of Genes
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Learning Outcome: 01.01.02 Outline how DNA stores the information to make proteins.
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18) The differences in inherited traits among individuals in a population are called _____.
A) species variation
B) genetic mutations
C) genetic variation
D) natural selection

Answer: C
Section: 01.02
Topic: The Relationship Between Genes and Traits
Bloom's: 1. Remember
Learning Outcome: 01.02.02 Define genetic variation.
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19) Three populations of an organism, each with drastically different external markings, but still members of the same species, would be called _____.
A) homologs
B) mutants
C) communities
D) alleles
E) morphs

Answer: E
Section: 01.02
Topic: The Relationship Between Genes and Traits
Bloom's: 1. Remember
Learning Outcome: 01.02.02 Define genetic variation.
Accessibility: Keyboard Navigation

20) Which one of the following is NOT one of the general classes of macromolecules that are necessary for cellular function?
A) nucleic acids
B) proteins
C) ions
D) carbohydrates
E) lipids

Answer: C
Section: 01.01
Topic: The Molecular Expression of Genes
Bloom's: 1. Remember
Learning Outcome: 01.01.01 Describe the biochemical composition of cells.
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21) The changes in the genetic makeup of a population over time is called _____.
A) homologous recombination
B) model organisms studies
C) genetic crosses
D) biological evolution
E) hypothesis testing

Answer: D
Section: 01.02
Topic: The Relationship Between Genes and Traits
Bloom's: 1. Remember
Learning Outcome: 01.02.05 Describe the process of evolution.
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22) Which of the following could be used to study the effects of drugs on gene expression?
A) population genetics
B) transmission genetics
C) molecular genetics
D) quantitative genetics

Answer: C
Section: 01.03
Topic: Fields of Genetics
Bloom's: 2. Understand
Learning Outcome: 01.03.01 Compare and contrast the three major fields of genetics: transmission, molecular, and population genetics.
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23) Which of the following uses a genetic cross to determine patterns of inheritance?
A) population genetics
B) transmission genetics
C) molecular genetics
D) evolutionary genetics

Answer: B
Section: 01.03
Topic: Fields of Genetics
Bloom's: 2. Understand
Learning Outcome: 01.03.01 Compare and contrast the three major fields of genetics: transmission, molecular, and population genetics.
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24) The traits of an individual organism can be influenced by both genes and the _____.
A) genome
B) environment
C) population size
D) genetic variation within a population

Answer: B
Section: 01.02
Topic: The Relationship Between Genes and Traits
Bloom's: 1. Remember
Learning Outcome: 01.02.03 Discuss the relationship between genes, traits, and the environment.
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25) Most cellular characteristics, such as structure and function, are the result of the synthesis and activity of different _____.
A) DNA
B) carbohydrates
C) lipids
D) proteins

Answer: D
Section: 01.01
Topic: The Molecular Expression of Genes
Bloom's: 1. Remember
Learning Outcome: 01.01.03 Explain how proteins are largely responsible for cell structure and function.
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26) Genetics is an experimental, as opposed to theoretical, science because _____.
A) hypotheses are tested by performing experiments
B) hypotheses are tested by reviewing the literature to see what others have found
C) no hypotheses are accepted or rejected unless they are voted on by a council of scientists
D) it does not rely on observations but only hypothesis testing experiments

Answer: A
Section: 01.04
Topic: The Science of Genetics
Bloom's: 1. Remember
Learning Outcome: 01.04.01 Describe what makes genetics an experimental science.
Accessibility: Keyboard Navigation

27) Performing a mating of two plants, one with a known genotype and the other with an unknown genotype, to determine the genotype of the individual with the unknown genotype would be an example what type of science?
A) discovery-based science
B) hypothesis testing
C) unethical experimentation
D) an impossible experiment

Answer: B
Section: 01.04
Topic: The Science of Genetics
Bloom's: 2. Understand
Learning Outcome: 01.04.01 Describe what makes genetics an experimental science.
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28) What is the first step that both scientists and students perform to answer questions in genetics?
A) Gathering background information
B) Reaching a conclusion
C) Analyzing data
D) Performing an experiment

Answer: A
Section: 01.04
Topic: The Science of Genetics
Bloom's: 1. Remember
Learning Outcome: 01.04.02 Outline different strategies for solving problems in genetics.
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