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| 1. | Genetics is the study of      |  |  | | --- | --- | | A. | variation of inherited traits. |  |  |  | | --- | --- | | B. | how organisms reproduce. |  |  |  | | --- | --- | | C. | how life originated. |  |  |  | | --- | --- | | D. | how the environment causes disease. |  |  |  | | --- | --- | | E. | the chemical composition of cells. | |

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| 2. | In which choice are the entries listed from smallest to largest?      |  |  | | --- | --- | | A. | Cell - genome - gene - DNA building block |  |  |  | | --- | --- | | B. | DNA building block - gene - chromosome - genome |  |  |  | | --- | --- | | C. | DNA building block - RNA building block - protein |  |  |  | | --- | --- | | D. | Gene - cell - DNA - genome |  |  |  | | --- | --- | | E. | Chromosome - genome - cell - DNA building block | |

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| 3. | The complete genetic material of an organism is its      |  |  | | --- | --- | | A. | genome. |  |  |  | | --- | --- | | B. | chromosome. |  |  |  | | --- | --- | | C. | phenotype. |  |  |  | | --- | --- | | D. | genotype. |  |  |  | | --- | --- | | E. | proteome. | |

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| 4. | The number of copies of our genome in most of our cells is \_\_.      |  |  | | --- | --- | | A. | 1 |  |  |  | | --- | --- | | B. | 2 |  |  |  | | --- | --- | | C. | 3 |  |  |  | | --- | --- | | D. | 4 |  |  |  | | --- | --- | | E. | 5 | |

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| 5. | An estimated \_\_\_\_\_ DNA base pairs comprise the human genome.      |  |  | | --- | --- | | A. | 32,000 |  |  |  | | --- | --- | | B. | 320,000 |  |  |  | | --- | --- | | C. | 3.2 million |  |  |  | | --- | --- | | D. | 3.2 billion |  |  |  | | --- | --- | | E. | 3.2 trillion | |

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| 6. | In general, RNA molecules      |  |  | | --- | --- | | A. | comprise the chromosomes. |  |  |  | | --- | --- | | B. | use the information in specific DNA sequences to construct proteins. |  |  |  | | --- | --- | | C. | use the information in specific proteins to construct DNA molecules. |  |  |  | | --- | --- | | D. | entwine with DNA molecules to encode proteins. |  |  |  | | --- | --- | | E. | form double helices that encode DNA sequences. | |

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| 7. | Variants of a gene are called      |  |  | | --- | --- | | A. | nucleotides. |  |  |  | | --- | --- | | B. | genotypes. |  |  |  | | --- | --- | | C. | phenotypes. |  |  |  | | --- | --- | | D. | alleles. |  |  |  | | --- | --- | | E. | single nucleotide polymorphisms. | |

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| 8. | Humans have \_\_ pairs of chromosomes.      |  |  | | --- | --- | | A. | 16 |  |  |  | | --- | --- | | B. | 23 |  |  |  | | --- | --- | | C. | 38 |  |  |  | | --- | --- | | D. | 46 |  |  |  | | --- | --- | | E. | 32 | |

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| 9. | A change in a gene's DNA sequence is a(n)      |  |  | | --- | --- | | A. | allele. |  |  |  | | --- | --- | | B. | genotype. |  |  |  | | --- | --- | | C. | nucleotide. |  |  |  | | --- | --- | | D. | mutation. |  |  |  | | --- | --- | | E. | genome. | |

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| 10. | The field that investigates the different proteins in specialized cell types is      |  |  | | --- | --- | | A. | genomics. |  |  |  | | --- | --- | | B. | proteomics. |  |  |  | | --- | --- | | C. | proteolysis. |  |  |  | | --- | --- | | D. | proctology. |  |  |  | | --- | --- | | E. | probiotics. | |

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| 11. | A genotype refers to      |  |  | | --- | --- | | A. | particular allele combinations. |  |  |  | | --- | --- | | B. | expression patterns of certain genes. |  |  |  | | --- | --- | | C. | the environmental components of a trait. |  |  |  | | --- | --- | | D. | the number of chromosomes that a person has. |  |  |  | | --- | --- | | E. | the size of a person's genome. | |

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| 12. | A chart that displays paired chromosomes in size order is a       |  |  | | --- | --- | | A. | pedigree. |  |  |  | | --- | --- | | B. | phenotype. |  |  |  | | --- | --- | | C. | genotype. |  |  |  | | --- | --- | | D. | karyotype. |  |  |  | | --- | --- | | E. | genome. | |

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| 13. | A human cell has      |  |  | | --- | --- | | A. | 22 pairs of sex chromosomes and one pair of autosomes. |  |  |  | | --- | --- | | B. | 22 pairs of autosomes and one pair of sex chromosomes. |  |  |  | | --- | --- | | C. | 23 pairs of autosomes. |  |  |  | | --- | --- | | D. | 23 pairs of autosomes and a pair of Y chromosomes. |  |  |  | | --- | --- | | E. | 46 pairs of autosomes and one pair of sex chromosomes. | |

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| 14. | A variant in a DNA sequence present in at least 1% of a population is a(n)      |  |  | | --- | --- | | A. | polymorphism. |  |  |  | | --- | --- | | B. | micromutation. |  |  |  | | --- | --- | | C. | macromutation. |  |  |  | | --- | --- | | D. | allele. |  |  |  | | --- | --- | | E. | genome. | |

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| 15. | The largest autosome is      |  |  | | --- | --- | | A. | the Y chromosome. |  |  |  | | --- | --- | | B. | the X chromosome. |  |  |  | | --- | --- | | C. | chromosome 22. |  |  |  | | --- | --- | | D. | chromosome 1. |  |  |  | | --- | --- | | E. | chromosome 14. | |

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| 16. | A single nucleotide polymorphism is      |  |  | | --- | --- | | A. | an individual's genotype for a particular trait. |  |  |  | | --- | --- | | B. | a single base site in the genome that varies among individuals in a population. |  |  |  | | --- | --- | | C. | a single copy of a gene. |  |  |  | | --- | --- | | D. | a gene that is expressed differently in males and females. |  |  |  | | --- | --- | | E. | the DNA base that begins a gene. | |

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| 17. | In a study, 3,794 of 4,000 people who have acne have a particular set of SNPs. Only 184 of 3,984 people who do not have acne, but are otherwise similar to the people with acne, have that SNP pattern. Therefore, these parts of the genome with this SNP pattern may include genes whose products affect the skin. This investigation is an example of a      |  |  | | --- | --- | | A. | genome sequencing experiment. |  |  |  | | --- | --- | | B. | genome-wide association study. |  |  |  | | --- | --- | | C. | genome-wide mutation study. |  |  |  | | --- | --- | | D. | gene expression profile. |  |  |  | | --- | --- | | E. | pharmacogenomics study. | |

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| 18. | One way to study the human genome is to      |  |  | | --- | --- | | A. | determine the twisting patterns of the two sides of the double helix. |  |  |  | | --- | --- | | B. | determine the sequence of sugars and phosphates. |  |  |  | | --- | --- | | C. | determine the DNA sequence. |  |  |  | | --- | --- | | D. | conduct a phenotype-wide association study. |  |  |  | | --- | --- | | E. | mix the genomes of two individuals. | |

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| 19. | Gene expression profiles of different cell types reflect different sets of      |  |  | | --- | --- | | A. | genes. |  |  |  | | --- | --- | | B. | mRNAs. |  |  |  | | --- | --- | | C. | proteins. |  |  |  | | --- | --- | | D. | genomes. |  |  |  | | --- | --- | | E. | SNPs. | |

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| 20. | A human body has about \_\_\_\_\_\_\_\_\_ cells.      |  |  | | --- | --- | | A. | 3.2 billion |  |  |  | | --- | --- | | B. | 20,600 |  |  |  | | --- | --- | | C. | 50 to 100 trillion |  |  |  | | --- | --- | | D. | 10 to 100 million |  |  |  | | --- | --- | | E. | a quadrillion | |

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| 21. | The four basic tissue types are      |  |  | | --- | --- | | A. | blood cells, skin cells, neurons, and muscle cells. |  |  |  | | --- | --- | | B. | DNA, RNA, proteins, and lipids. |  |  |  | | --- | --- | | C. | adipose cells, muscle cells, bone cells, and sex cells. |  |  |  | | --- | --- | | D. | connective tissue, epithelium, muscle, and nervous tissue. |  |  |  | | --- | --- | | E. | the stomach, the small intestine, the liver, and the pancreas. | |

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| 22. | Cells differentiate by      |  |  | | --- | --- | | A. | expressing different subsets of genes. |  |  |  | | --- | --- | | B. | expressing the entire genome, then silencing some genes. |  |  |  | | --- | --- | | C. | dividing. |  |  |  | | --- | --- | | D. | activating all of the DNA that encodes protein. |  |  |  | | --- | --- | | E. | becoming stem cells. | |

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| 23. | The difference between phenotype and genotype is that      |  |  | | --- | --- | | A. | phenotype refers to the genetic instructions and genotype to their expression. |  |  |  | | --- | --- | | B. | genotype refers to the genetic instructions and phenotype to their expression. |  |  |  | | --- | --- | | C. | the phenotype is RNA and the genotype is DNA. |  |  |  | | --- | --- | | D. | the phenotype is DNA and the genotype is RNA. |  |  |  | | --- | --- | | E. | the phenotype appears before the genotype is set. | |

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| 24. | Shawn's mother and Heather's mother are sisters. Shawn and Heather have \_\_ of their genes in common.      |  |  | | --- | --- | | A. | 1/2 |  |  |  | | --- | --- | | B. | 1/4 |  |  |  | | --- | --- | | C. | 1/8 |  |  |  | | --- | --- | | D. | 1/16 |  |  |  | | --- | --- | | E. | 1/32 | |

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| 25. | The study of DNA, RNA, and proteins constitutes      |  |  | | --- | --- | | A. | transmission genetics. |  |  |  | | --- | --- | | B. | molecular genetics. |  |  |  | | --- | --- | | C. | population genetics. |  |  |  | | --- | --- | | D. | evolutionary genetics. |  |  |  | | --- | --- | | E. | primate genetics. | |

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| 26. | A gene pool consists of all the alleles in a(n)      |  |  | | --- | --- | | A. | population. |  |  |  | | --- | --- | | B. | individual. |  |  |  | | --- | --- | | C. | family. |  |  |  | | --- | --- | | D. | neighborhood. |  |  |  | | --- | --- | | E. | nation. | |

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| 27. | A trait or disorder that is multifactorial is      |  |  | | --- | --- | | A. | present in more than one family member. |  |  |  | | --- | --- | | B. | found only in one part of the world. |  |  |  | | --- | --- | | C. | caused by one or more genes plus environmental influences. |  |  |  | | --- | --- | | D. | caused by a single gene, with no environmental input. |  |  |  | | --- | --- | | E. | seen in only males or females. | |

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| 28. | Kanisha and her friend both receive their grades for their physics midterms. Kanisha got an A, but her friend received a D. "You must have the physics gene," remarks her friend. "I don't. I might as well not bother studying." The friend's attitude illustrates the idea of       |  |  | | --- | --- | | A. | genetic discrimination. |  |  |  | | --- | --- | | B. | genetic determinism. |  |  |  | | --- | --- | | C. | genetic engineering. |  |  |  | | --- | --- | | D. | genetic modification. |  |  |  | | --- | --- | | E. | a genetic polymorphism. | |

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| 29. | Body weight must be a multifactorial trait because       |  |  | | --- | --- | | A. | it is obviously inherited. |  |  |  | | --- | --- | | B. | it responds to lifestyle changes. |  |  |  | | --- | --- | | C. | it is within a certain range. |  |  |  | | --- | --- | | D. | it is inherited to an extent, but can be altered by diet and/or exercise. |  |  |  | | --- | --- | | E. | it varies greatly. | |

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| 30. | DNA profiling has been used to  2-14-2013      |  |  | | --- | --- | | A. | identify victims of terrorist attacks and natural disasters. |  |  |  | | --- | --- | | B. | cure metabolic diseases caused by mutations in single genes. |  |  |  | | --- | --- | | C. | treat male infertility. |  |  |  | | --- | --- | | D. | predict how children will do in school. |  |  |  | | --- | --- | | E. | predict if someone will develop cancer. | |

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| 31. | A test performed on secretions on a piece of fabric left at a crime scene that is used to implicate an apprehended suspect is       |  |  | | --- | --- | | A. | DNA replication. |  |  |  | | --- | --- | | B. | RNA transcription. |  |  |  | | --- | --- | | C. | DNA profiling. |  |  |  | | --- | --- | | D. | DNA sharing. |  |  |  | | --- | --- | | E. | gene expression profiling. | |

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| 32. | Nacho suffers from terrible migraine headaches. He enters a clinical trial to test whether certain single nucleotide polymorphisms (SNPs) are associated with response to one drug but not another. This is an approach called       |  |  | | --- | --- | | A. | gene therapy. |  |  |  | | --- | --- | | B. | pharmacogenomics. |  |  |  | | --- | --- | | C. | genetic determinism. |  |  |  | | --- | --- | | D. | applied pharmacology. |  |  |  | | --- | --- | | E. | genotherapy. | |

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| 33. | One way that single-gene diseases differ from other diseases is that       |  |  | | --- | --- | | A. | they most often affect people late in life. |  |  |  | | --- | --- | | B. | they affect consecutive generations. |  |  |  | | --- | --- | | C. | they occur at the same frequency in every population. |  |  |  | | --- | --- | | D. | they are not treatable. |  |  |  | | --- | --- | | E. | it is possible to predict occurrence in specific relatives. | |

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| 34. | The distinction between mutations and gene expression is that       |  |  | | --- | --- | | A. | mutations affect only autosomes and gene expression affects only sex chromosomes. |  |  |  | | --- | --- | | B. | mutations are dangerous and gene expression promotes health. |  |  |  | | --- | --- | | C. | mutations are changes in the DNA sequence, whereas gene expression refers to the extent to which a gene is transcribed and translated, producing protein. |  |  |  | | --- | --- | | D. | gene expression refers to changes in the DNA sequence, whereas mutation refers to the processes of DNA replication, RNA transcription, and protein synthesis. |  |  |  | | --- | --- | | E. | mutations occur in RNA and gene expression affects DNA. | |

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| 35. | Constructing a "diseasome" is a way to connect diseases that share certain gene expression patterns. A goal of this approach is to       |  |  | | --- | --- | | A. | cure cancer. |  |  |  | | --- | --- | | B. | identify new drug targets. |  |  |  | | --- | --- | | C. | cure all diseases that involve the same set of genes. |  |  |  | | --- | --- | | D. | discover how our long-ago ancestors were related. |  |  |  | | --- | --- | | E. | determine which populations have which diseases. | |

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| 36. | The Genetic Information Nondiscrimination Act defines a genetic test as an analysis of       |  |  | | --- | --- | | A. | human DNA, RNA, proteins, or chromosomes. |  |  |  | | --- | --- | | B. | blood or saliva. |  |  |  | | --- | --- | | C. | a person's stem cells. |  |  |  | | --- | --- | | D. | a person's cancer cells. |  |  |  | | --- | --- | | E. | fats, carbohydrates, or proteins. | |

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| 37. | Curious about genetic testing, Neka takes a direct-to-consumer genetic test panel. He discovers that he has inherited gene variants that are associated with increased risk of alcoholism. He reports these facts during an interview for purchasing a life insurance policy, because he thinks that the Genetic Information Nondiscrimination Act will protect him from being denied life insurance based on results of a genetic test. Neka is denied coverage, however, because       |  |  | | --- | --- | | A. | the law is not in effect yet. |  |  |  | | --- | --- | | B. | the law does not protect people who voluntarily give information. |  |  |  | | --- | --- | | C. | the law only applies to health insurance and employers, not life insurance. |  |  |  | | --- | --- | | D. | the law does not apply to direct-to-consumer tests. |  |  |  | | --- | --- | | E. | patients must sign up for GINA at the time of testing. | |

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| 38. | Biotechnology grew out of       |  |  | | --- | --- | | A. | veterinary medicine. |  |  |  | | --- | --- | | B. | human health care. |  |  |  | | --- | --- | | C. | civil engineering. |  |  |  | | --- | --- | | D. | psychology. |  |  |  | | --- | --- | | E. | agriculture. | |

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| 39. | A melon that has been altered to produce a protein normally made only in a cabbage is      |  |  | | --- | --- | | A. | transformed. |  |  |  | | --- | --- | | B. | transgenic. |  |  |  | | --- | --- | | C. | genomic. |  |  |  | | --- | --- | | D. | transgendered. |  |  |  | | --- | --- | | E. | recessive. | |

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| 40. | Sequencing all the DNA in the fluid that leaks from the bottom of a garbage can is an example of      |  |  | | --- | --- | | A. | stem cell science. |  |  |  | | --- | --- | | B. | gene expression profiling. |  |  |  | | --- | --- | | C. | metagenomics. |  |  |  | | --- | --- | | D. | DNA profiling. |  |  |  | | --- | --- | | E. | prenatal diagnosis. | |

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| 1. | Genetics is the study of      |  |  | | --- | --- | | **A.** | variation of inherited traits. |  |  |  | | --- | --- | | B. | how organisms reproduce. |  |  |  | | --- | --- | | C. | how life originated. |  |  |  | | --- | --- | | D. | how the environment causes disease. |  |  |  | | --- | --- | | E. | the chemical composition of cells. | |

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| *Blooms Level: 01. Remember Lewis - Chapter 01 #1 Topic: Genetics* |

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| 2. | In which choice are the entries listed from smallest to largest?      |  |  | | --- | --- | | A. | Cell - genome - gene - DNA building block |  |  |  | | --- | --- | | **B.** | DNA building block - gene - chromosome - genome |  |  |  | | --- | --- | | C. | DNA building block - RNA building block - protein |  |  |  | | --- | --- | | D. | Gene - cell - DNA - genome |  |  |  | | --- | --- | | E. | Chromosome - genome - cell - DNA building block | |

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| *Blooms Level: 04. Analyze Lewis - Chapter 01 #2 Section: 01.01 Topic: Chemicals of Life* |

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| 3. | The complete genetic material of an organism is its      |  |  | | --- | --- | | **A.** | genome. |  |  |  | | --- | --- | | B. | chromosome. |  |  |  | | --- | --- | | C. | phenotype. |  |  |  | | --- | --- | | D. | genotype. |  |  |  | | --- | --- | | E. | proteome. | |

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| *Blooms Level: 02. Understand Lewis - Chapter 01 #3 Section: 01.01 Topic: Genomics* |

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| 4. | The number of copies of our genome in most of our cells is \_\_.      |  |  | | --- | --- | | A. | 1 |  |  |  | | --- | --- | | **B.** | 2 |  |  |  | | --- | --- | | C. | 3 |  |  |  | | --- | --- | | D. | 4 |  |  |  | | --- | --- | | E. | 5 | |

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| *Blooms Level: 01. Remember Lewis - Chapter 01 #4 Section: 01.01 Topic: Genomics* |

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| 5. | An estimated \_\_\_\_\_ DNA base pairs comprise the human genome.      |  |  | | --- | --- | | A. | 32,000 |  |  |  | | --- | --- | | B. | 320,000 |  |  |  | | --- | --- | | C. | 3.2 million |  |  |  | | --- | --- | | **D.** | 3.2 billion |  |  |  | | --- | --- | | E. | 3.2 trillion | |

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| *Blooms Level: 01. Remember Lewis - Chapter 01 #5 Section: 01.01 Topic: DNA Structure* |

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| 6. | In general, RNA molecules      |  |  | | --- | --- | | A. | comprise the chromosomes. |  |  |  | | --- | --- | | **B.** | use the information in specific DNA sequences to construct proteins. |  |  |  | | --- | --- | | C. | use the information in specific proteins to construct DNA molecules. |  |  |  | | --- | --- | | D. | entwine with DNA molecules to encode proteins. |  |  |  | | --- | --- | | E. | form double helices that encode DNA sequences. | |

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| *Blooms Level: 06. Create Lewis - Chapter 01 #6 Section: 01.02 Topic: RNA Structure and Types* |

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| 7. | Variants of a gene are called      |  |  | | --- | --- | | A. | nucleotides. |  |  |  | | --- | --- | | B. | genotypes. |  |  |  | | --- | --- | | C. | phenotypes. |  |  |  | | --- | --- | | **D.** | alleles. |  |  |  | | --- | --- | | E. | single nucleotide polymorphisms. | |

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| *Blooms Level: 05. Evaluate Lewis - Chapter 01 #7 Section: 01.02 Topic: DNA* |

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| 8. | Humans have \_\_ pairs of chromosomes.      |  |  | | --- | --- | | A. | 16 |  |  |  | | --- | --- | | **B.** | 23 |  |  |  | | --- | --- | | C. | 38 |  |  |  | | --- | --- | | D. | 46 |  |  |  | | --- | --- | | E. | 32 | |

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| *Blooms Level: 01. Remember Lewis - Chapter 01 #8 Section: 01.02 Topic: Chromosomes* |

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| 9. | A change in a gene's DNA sequence is a(n)      |  |  | | --- | --- | | A. | allele. |  |  |  | | --- | --- | | B. | genotype. |  |  |  | | --- | --- | | C. | nucleotide. |  |  |  | | --- | --- | | **D.** | mutation. |  |  |  | | --- | --- | | E. | genome. | |

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| *Blooms Level: 02. Understand Lewis - Chapter 01 #9 Section: 01.02 Topic: DNA* |

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| 10. | The field that investigates the different proteins in specialized cell types is      |  |  | | --- | --- | | A. | genomics. |  |  |  | | --- | --- | | **B.** | proteomics. |  |  |  | | --- | --- | | C. | proteolysis. |  |  |  | | --- | --- | | D. | proctology. |  |  |  | | --- | --- | | E. | probiotics. | |

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| *Blooms Level: 04. Analyze Lewis - Chapter 01 #10 Section: 01.02 Topic: Proteomics* |

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| 11. | A genotype refers to      |  |  | | --- | --- | | **A.** | particular allele combinations. |  |  |  | | --- | --- | | B. | expression patterns of certain genes. |  |  |  | | --- | --- | | C. | the environmental components of a trait. |  |  |  | | --- | --- | | D. | the number of chromosomes that a person has. |  |  |  | | --- | --- | | E. | the size of a person's genome. | |

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| *Blooms Level: 02. Understand Lewis - Chapter 01 #11 Section: 01.02 Topic: Genes* |

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| 12. | A chart that displays paired chromosomes in size order is a       |  |  | | --- | --- | | A. | pedigree. |  |  |  | | --- | --- | | B. | phenotype. |  |  |  | | --- | --- | | C. | genotype. |  |  |  | | --- | --- | | **D.** | karyotype. |  |  |  | | --- | --- | | E. | genome. | |

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| *Blooms Level: 02. Understand Lewis - Chapter 01 #12 Section: 01.02 Topic: Chromosomes* |

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| 13. | A human cell has      |  |  | | --- | --- | | A. | 22 pairs of sex chromosomes and one pair of autosomes. |  |  |  | | --- | --- | | **B.** | 22 pairs of autosomes and one pair of sex chromosomes. |  |  |  | | --- | --- | | C. | 23 pairs of autosomes. |  |  |  | | --- | --- | | D. | 23 pairs of autosomes and a pair of Y chromosomes. |  |  |  | | --- | --- | | E. | 46 pairs of autosomes and one pair of sex chromosomes. | |

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| *Blooms Level: 01. Remember Lewis - Chapter 01 #13 Section: 01.02 Topic: Chromosomes* |

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| 14. | A variant in a DNA sequence present in at least 1% of a population is a(n)      |  |  | | --- | --- | | **A.** | polymorphism. |  |  |  | | --- | --- | | B. | micromutation. |  |  |  | | --- | --- | | C. | macromutation. |  |  |  | | --- | --- | | D. | allele. |  |  |  | | --- | --- | | E. | genome. | |

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| *Blooms Level: 02. Understand Lewis - Chapter 01 #14 Section: 01.02 Topic: DNA* |

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| 15. | The largest autosome is      |  |  | | --- | --- | | A. | the Y chromosome. |  |  |  | | --- | --- | | B. | the X chromosome. |  |  |  | | --- | --- | | C. | chromosome 22. |  |  |  | | --- | --- | | **D.** | chromosome 1. |  |  |  | | --- | --- | | E. | chromosome 14. | |

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| *Blooms Level: 02. Understand Lewis - Chapter 01 #15 Section: 01.02 Topic: Chromosomes* |

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| 16. | A single nucleotide polymorphism is      |  |  | | --- | --- | | A. | an individual's genotype for a particular trait. |  |  |  | | --- | --- | | **B.** | a single base site in the genome that varies among individuals in a population. |  |  |  | | --- | --- | | C. | a single copy of a gene. |  |  |  | | --- | --- | | D. | a gene that is expressed differently in males and females. |  |  |  | | --- | --- | | E. | the DNA base that begins a gene. | |

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| *Blooms Level: 05. Evaluate Lewis - Chapter 01 #16 Section: 01.02 Topic: DNA* |

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| 17. | In a study, 3,794 of 4,000 people who have acne have a particular set of SNPs. Only 184 of 3,984 people who do not have acne, but are otherwise similar to the people with acne, have that SNP pattern. Therefore, these parts of the genome with this SNP pattern may include genes whose products affect the skin. This investigation is an example of a      |  |  | | --- | --- | | A. | genome sequencing experiment. |  |  |  | | --- | --- | | **B.** | genome-wide association study. |  |  |  | | --- | --- | | C. | genome-wide mutation study. |  |  |  | | --- | --- | | D. | gene expression profile. |  |  |  | | --- | --- | | E. | pharmacogenomics study. | |

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| *Blooms Level: 04. Analyze Lewis - Chapter 01 #17 Section: 01.02 Topic: Genomics* |

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| 18. | One way to study the human genome is to      |  |  | | --- | --- | | A. | determine the twisting patterns of the two sides of the double helix. |  |  |  | | --- | --- | | B. | determine the sequence of sugars and phosphates. |  |  |  | | --- | --- | | **C.** | determine the DNA sequence. |  |  |  | | --- | --- | | D. | conduct a phenotype-wide association study. |  |  |  | | --- | --- | | E. | mix the genomes of two individuals. | |

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| *Blooms Level: 06. Create Lewis - Chapter 01 #18 Section: 01.02 Topic: Genomics* |

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| 19. | Gene expression profiles of different cell types reflect different sets of      |  |  | | --- | --- | | A. | genes. |  |  |  | | --- | --- | | **B.** | mRNAs. |  |  |  | | --- | --- | | C. | proteins. |  |  |  | | --- | --- | | D. | genomes. |  |  |  | | --- | --- | | E. | SNPs. | |

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| *Blooms Level: 06. Create Lewis - Chapter 01 #19 Section: 01.02 Topic: Applications of Genetics Topic: Genetic Testing* |

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| 20. | A human body has about \_\_\_\_\_\_\_\_\_ cells.      |  |  | | --- | --- | | A. | 3.2 billion |  |  |  | | --- | --- | | B. | 20,600 |  |  |  | | --- | --- | | **C.** | 50 to 100 trillion |  |  |  | | --- | --- | | D. | 10 to 100 million |  |  |  | | --- | --- | | E. | a quadrillion | |

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| *Blooms Level: 01. Remember Lewis - Chapter 01 #20 Section: 01.02 Topic: Cells* |

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| 21. | The four basic tissue types are      |  |  | | --- | --- | | A. | blood cells, skin cells, neurons, and muscle cells. |  |  |  | | --- | --- | | B. | DNA, RNA, proteins, and lipids. |  |  |  | | --- | --- | | C. | adipose cells, muscle cells, bone cells, and sex cells. |  |  |  | | --- | --- | | **D.** | connective tissue, epithelium, muscle, and nervous tissue. |  |  |  | | --- | --- | | E. | the stomach, the small intestine, the liver, and the pancreas. | |

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| *Blooms Level: 05. Evaluate Lewis - Chapter 01 #21 Section: 01.02 Topic: The Body* |

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| 22. | Cells differentiate by      |  |  | | --- | --- | | **A.** | expressing different subsets of genes. |  |  |  | | --- | --- | | B. | expressing the entire genome, then silencing some genes. |  |  |  | | --- | --- | | C. | dividing. |  |  |  | | --- | --- | | D. | activating all of the DNA that encodes protein. |  |  |  | | --- | --- | | E. | becoming stem cells. | |

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| *Blooms Level: 05. Evaluate Lewis - Chapter 01 #22 Section: 01.02 Topic: Cells* |

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| 23. | The difference between phenotype and genotype is that      |  |  | | --- | --- | | A. | phenotype refers to the genetic instructions and genotype to their expression. |  |  |  | | --- | --- | | **B.** | genotype refers to the genetic instructions and phenotype to their expression. |  |  |  | | --- | --- | | C. | the phenotype is RNA and the genotype is DNA. |  |  |  | | --- | --- | | D. | the phenotype is DNA and the genotype is RNA. |  |  |  | | --- | --- | | E. | the phenotype appears before the genotype is set. | |

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| *Blooms Level: 06. Create Lewis - Chapter 01 #23 Section: 01.02 Topic: Mendelian inheritance* |

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| 24. | Shawn's mother and Heather's mother are sisters. Shawn and Heather have \_\_ of their genes in common.      |  |  | | --- | --- | | A. | 1/2 |  |  |  | | --- | --- | | B. | 1/4 |  |  |  | | --- | --- | | **C.** | 1/8 |  |  |  | | --- | --- | | D. | 1/16 |  |  |  | | --- | --- | | E. | 1/32 | |

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| *Blooms Level: 04. Analyze Lewis - Chapter 01 #24 Section: 01.02 Topic: Mendelian inheritance* |

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| 25. | The study of DNA, RNA, and proteins constitutes      |  |  | | --- | --- | | A. | transmission genetics. |  |  |  | | --- | --- | | **B.** | molecular genetics. |  |  |  | | --- | --- | | C. | population genetics. |  |  |  | | --- | --- | | D. | evolutionary genetics. |  |  |  | | --- | --- | | E. | primate genetics. | |

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| *Blooms Level: 02. Understand Lewis - Chapter 01 #25 Section: 01.02 Topic: Molecular Genetics* |

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| 26. | A gene pool consists of all the alleles in a(n)      |  |  | | --- | --- | | **A.** | population. |  |  |  | | --- | --- | | B. | individual. |  |  |  | | --- | --- | | C. | family. |  |  |  | | --- | --- | | D. | neighborhood. |  |  |  | | --- | --- | | E. | nation. | |

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| *Blooms Level: 02. Understand Lewis - Chapter 01 #26 Section: 01.02 Topic: Population Genetics* |

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| 27. | A trait or disorder that is multifactorial is      |  |  | | --- | --- | | A. | present in more than one family member. |  |  |  | | --- | --- | | B. | found only in one part of the world. |  |  |  | | --- | --- | | **C.** | caused by one or more genes plus environmental influences. |  |  |  | | --- | --- | | D. | caused by a single gene, with no environmental input. |  |  |  | | --- | --- | | E. | seen in only males or females. | |

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| *Blooms Level: 02. Understand Lewis - Chapter 01 #27 Section: 01.03 Topic: Multifactoral Traits* |

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| 28. | Kanisha and her friend both receive their grades for their physics midterms. Kanisha got an A, but her friend received a D. "You must have the physics gene," remarks her friend. "I don't. I might as well not bother studying." The friend's attitude illustrates the idea of       |  |  | | --- | --- | | A. | genetic discrimination. |  |  |  | | --- | --- | | **B.** | genetic determinism. |  |  |  | | --- | --- | | C. | genetic engineering. |  |  |  | | --- | --- | | D. | genetic modification. |  |  |  | | --- | --- | | E. | a genetic polymorphism. | |

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| *Blooms Level: 04. Analyze Lewis - Chapter 01 #28 Section: 01.03 Topic: Genetics* |

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| 29. | Body weight must be a multifactorial trait because       |  |  | | --- | --- | | A. | it is obviously inherited. |  |  |  | | --- | --- | | B. | it responds to lifestyle changes. |  |  |  | | --- | --- | | C. | it is within a certain range. |  |  |  | | --- | --- | | **D.** | it is inherited to an extent, but can be altered by diet and/or exercise. |  |  |  | | --- | --- | | E. | it varies greatly. | |

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| *Blooms Level: 05. Evaluate Lewis - Chapter 01 #29 Section: 01.03 Topic: Multifactoral Traits* |

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| 30. | DNA profiling has been used to  2-14-2013      |  |  | | --- | --- | | **A.** | identify victims of terrorist attacks and natural disasters. |  |  |  | | --- | --- | | B. | cure metabolic diseases caused by mutations in single genes. |  |  |  | | --- | --- | | C. | treat male infertility. |  |  |  | | --- | --- | | D. | predict how children will do in school. |  |  |  | | --- | --- | | E. | predict if someone will develop cancer. | |

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| *Blooms Level: 03. Apply Lewis - Chapter 01 #30 Section: 01.04 Topic: Genetic Testing* |

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| 31. | A test performed on secretions on a piece of fabric left at a crime scene that is used to implicate an apprehended suspect is       |  |  | | --- | --- | | A. | DNA replication. |  |  |  | | --- | --- | | B. | RNA transcription. |  |  |  | | --- | --- | | **C.** | DNA profiling. |  |  |  | | --- | --- | | D. | DNA sharing. |  |  |  | | --- | --- | | E. | gene expression profiling. | |

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| *Blooms Level: 03. Apply Lewis - Chapter 01 #31 Section: 01.04 Topic: Genetic Testing* |

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| 32. | Nacho suffers from terrible migraine headaches. He enters a clinical trial to test whether certain single nucleotide polymorphisms (SNPs) are associated with response to one drug but not another. This is an approach called       |  |  | | --- | --- | | A. | gene therapy. |  |  |  | | --- | --- | | **B.** | pharmacogenomics. |  |  |  | | --- | --- | | C. | genetic determinism. |  |  |  | | --- | --- | | D. | applied pharmacology. |  |  |  | | --- | --- | | E. | genotherapy. | |

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| *Blooms Level: 04. Analyze Lewis - Chapter 01 #32 Section: 01.04 Topic: Medical Genetics* |

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| 33. | One way that single-gene diseases differ from other diseases is that       |  |  | | --- | --- | | A. | they most often affect people late in life. |  |  |  | | --- | --- | | B. | they affect consecutive generations. |  |  |  | | --- | --- | | C. | they occur at the same frequency in every population. |  |  |  | | --- | --- | | D. | they are not treatable. |  |  |  | | --- | --- | | **E.** | it is possible to predict occurrence in specific relatives. | |

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| *Blooms Level: 05. Evaluate Lewis - Chapter 01 #33 Section: 01.04 Topic: Medical Genetics* |

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| 34. | The distinction between mutations and gene expression is that       |  |  | | --- | --- | | A. | mutations affect only autosomes and gene expression affects only sex chromosomes. |  |  |  | | --- | --- | | B. | mutations are dangerous and gene expression promotes health. |  |  |  | | --- | --- | | **C.** | mutations are changes in the DNA sequence, whereas gene expression refers to the extent to which a gene is transcribed and translated, producing protein. |  |  |  | | --- | --- | | D. | gene expression refers to changes in the DNA sequence, whereas mutation refers to the processes of DNA replication, RNA transcription, and protein synthesis. |  |  |  | | --- | --- | | E. | mutations occur in RNA and gene expression affects DNA. | |

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| *Blooms Level: 05. Evaluate Lewis - Chapter 01 #34 Section: 01.04 Topic: Genes* |

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| 35. | Constructing a "diseasome" is a way to connect diseases that share certain gene expression patterns. A goal of this approach is to       |  |  | | --- | --- | | A. | cure cancer. |  |  |  | | --- | --- | | **B.** | identify new drug targets. |  |  |  | | --- | --- | | C. | cure all diseases that involve the same set of genes. |  |  |  | | --- | --- | | D. | discover how our long-ago ancestors were related. |  |  |  | | --- | --- | | E. | determine which populations have which diseases. | |

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| *Blooms Level: 06. Create Lewis - Chapter 01 #35 Section: 01.04 Topic: Medical Genetics* |

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| 36. | The Genetic Information Nondiscrimination Act defines a genetic test as an analysis of       |  |  | | --- | --- | | **A.** | human DNA, RNA, proteins, or chromosomes. |  |  |  | | --- | --- | | B. | blood or saliva. |  |  |  | | --- | --- | | C. | a person's stem cells. |  |  |  | | --- | --- | | D. | a person's cancer cells. |  |  |  | | --- | --- | | E. | fats, carbohydrates, or proteins. | |

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| *Blooms Level: 01. Remember Lewis - Chapter 01 #36 Section: 01.04 Topic: Medical Genetics* |

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| 37. | Curious about genetic testing, Neka takes a direct-to-consumer genetic test panel. He discovers that he has inherited gene variants that are associated with increased risk of alcoholism. He reports these facts during an interview for purchasing a life insurance policy, because he thinks that the Genetic Information Nondiscrimination Act will protect him from being denied life insurance based on results of a genetic test. Neka is denied coverage, however, because       |  |  | | --- | --- | | A. | the law is not in effect yet. |  |  |  | | --- | --- | | B. | the law does not protect people who voluntarily give information. |  |  |  | | --- | --- | | **C.** | the law only applies to health insurance and employers, not life insurance. |  |  |  | | --- | --- | | D. | the law does not apply to direct-to-consumer tests. |  |  |  | | --- | --- | | E. | patients must sign up for GINA at the time of testing. | |

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| *Blooms Level: 04. Analyze Lewis - Chapter 01 #37 Section: 01.04 Topic: Medical Genetics* |

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| 38. | Biotechnology grew out of       |  |  | | --- | --- | | A. | veterinary medicine. |  |  |  | | --- | --- | | B. | human health care. |  |  |  | | --- | --- | | C. | civil engineering. |  |  |  | | --- | --- | | D. | psychology. |  |  |  | | --- | --- | | **E.** | agriculture. | |

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| *Blooms Level: 02. Understand Lewis - Chapter 01 #38 Section: 01.04 Topic: Applications of Genetics* |

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| 39. | A melon that has been altered to produce a protein normally made only in a cabbage is      |  |  | | --- | --- | | A. | transformed. |  |  |  | | --- | --- | | **B.** | transgenic. |  |  |  | | --- | --- | | C. | genomic. |  |  |  | | --- | --- | | D. | transgendered. |  |  |  | | --- | --- | | E. | recessive. | |

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| *Blooms Level: 02. Understand Lewis - Chapter 01 #39 Section: 01.04 Topic: Biotechnology* |

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| 40. | Sequencing all the DNA in the fluid that leaks from the bottom of a garbage can is an example of      |  |  | | --- | --- | | A. | stem cell science. |  |  |  | | --- | --- | | B. | gene expression profiling. |  |  |  | | --- | --- | | **C.** | metagenomics. |  |  |  | | --- | --- | | D. | DNA profiling. |  |  |  | | --- | --- | | E. | prenatal diagnosis. | |

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| *Blooms Level: 02. Understand Lewis - Chapter 01 #40 Section: 01.04 Topic: Genomics* |

1 Summary

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| *Category* | *# of Questions* |
| Blooms Level: 01. Remember | 7 |
| Blooms Level: 02. Understand | 12 |
| Blooms Level: 03. Apply | 2 |
| Blooms Level: 04. Analyze | 7 |
| Blooms Level: 05. Evaluate | 7 |
| Blooms Level: 06. Create | 5 |
| Lewis - Chapter 01 | 79 |
| Section: 01.01 | 4 |
| Section: 01.02 | 21 |
| Section: 01.03 | 3 |
| Section: 01.04 | 11 |
| Topic: Applications of Genetics | 2 |
| Topic: Biotechnology | 1 |
| Topic: Cells | 2 |
| Topic: Chemicals of Life | 1 |
| Topic: Chromosomes | 4 |
| Topic: DNA | 4 |
| Topic: DNA Structure | 1 |
| Topic: Genes | 2 |
| Topic: Genetic Testing | 3 |
| Topic: Genetics | 2 |
| Topic: Genomics | 5 |
| Topic: Medical Genetics | 5 |
| Topic: Mendelian inheritance | 2 |
| Topic: Molecular Genetics | 1 |
| Topic: Multifactoral Traits | 2 |
| Topic: Population Genetics | 1 |
| Topic: Proteomics | 1 |
| Topic: RNA Structure and Types | 1 |
| Topic: The Body | 1 |