

Chapter 2 – Testbank Multiple-Choice Questions

1. DNA is defined as
 - a. Deoxyribonucleic acid
 - b. Deoxyribonucleic alkali
 - c. Digoxin neural assessment
 - d. Diploid nucleotide analysis

Answer: a

2. DNA is made up of nucleotides. How many bases do nucleotides have?
 - a. Two
 - b. Three
 - c. Four
 - d. Five

Answer: c

3. Which term refers to the fact that human cells, except for sexual cells, contain two sets of chromosomes?
 - a. Diploid
 - b. Karyotype
 - c. Mitosis
 - d. Polymerase

Answer: a

4. What is the term for sexual cell division?
 - a. Meiosis
 - b. Mitosis
 - c. Mutation
 - d. Replication

Answer: a

5. The sex cells, either eggs or sperm, are _____ in humans, meaning that they contain one copy of each chromosome rather than two.
 - a. complementary
 - b. haploid
 - c. homologous
 - d. linear

Answer: b

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6. Most common blood group alleles result from which type of DNA modification?
- a. Chromosome crossover
 - b. Gene deletion
 - c. Multiple nucleotide transposition
 - d. Single nucleotide polymorphism

Answer: d

7. RNA is defined as
- a. Recessive nucleotide analysis
 - b. Red blood cell nuclear antigen
 - c. Ribonucleic acid
 - d. Ribonucleic alkali

Answer: c

8. What is the abbreviation for the amino acid glutamine?
- a. Gln
 - b. Glu
 - c. Gly
 - d. Gtm

Answer: a

9. What is the function of ribosomes?
- a. Produce complementary strand of mRNA
 - b. Transcribe DNA into mRNA
 - c. Translate mRNA into protein
 - d. Unwind DNA

Answer: c

10. The site of the gene on the chromosome is the
- a. allele
 - b. codon
 - c. locus
 - d. null

Answer: c

11. When alleles at a given locus on both chromosomes are identical they are

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- a. antithetical
- b. indecipherable
- c. heterozygous
- d. homozygous

Answer: d

12. Which of the following is the method used for predicting genotype frequencies of offspring?

- a. Combination grouping
- b. Dominant grouping
- c. Dosage effect
- d. Punnett square

Answer: d

13. Which statement is true?

- a. Blood group antigen molecules are produced as a result of alleles at a nonspecific gene locus.
- b. Carbohydrate blood group antigens are produced directly by the allele.
- c. Enzymes are proteins that catalyze a chemical reaction.
- d. Red blood cell antigens cannot be a structural part of the red blood cell membrane.

Answer: c

14. Which type of gene expresses a trait that does not allow the expression of a trait encoded by an alternative allele at the same locus on the other chromosome?

- a. Aggressive
- b. Co-dominant
- c. Dominant
- d. Recessive

Answer: c

15. In a pedigree, an X-linked trait will exhibit a recognizable pattern of inheritance because

- a. females carry one X and one Y chromosome and males carry one X and one Y chromosome
- b. females carry two X chromosomes and males carry one X and one Y chromosome
- c. females carry two X chromosomes and males carry two Y chromosomes
- d. females carry two Y chromosomes and males carry one X and one Y chromosome

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Answer: b

16. What term is used to describe an allele present on the same chromosome?

- a. Amorph
- b. Cis
- c. Genotype
- d. Karyotype

Answer: b

17. The tendency for genes that are close together on the same chromosome to be inherited as a unit is called

- a. codonage
- b. linkage
- c. morphing
- d. replicating

Answer: b

18. All of the following statements are true *except*

- a. The null phenotype is the inheritance of genes that code for no expression of the usual blood group antigens for that system.
- b. An amorphic gene expresses a phenotype and can be called the silent gene.
- c. Interaction among alleles or the products of different genes may modify the expression of a trait.
- d. The HLA genes are linked and are inherited as haplotypes.

Answer: b

19. Which term refers to a genetic system that expresses two or more phenotypes?

- a. Amorphic
- b. Genotype
- c. Phenotype
- d. Polymorphic

Answer: d

20. Which of the following resulted in the determination of over 99% of the nucleotide sequences in the human genome?

- a. DNA microarrays
- b. Hardy-Weinberg equation

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- c. Human Genome Project
- d. Knowledge of PCR

Answer: c

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