# Foundations of Genetic Genealogy

Genealogy And Genetics · Answer Key · 18 Questions

**1. Which molecule carries the genetic instructions used in the growth and development of all living organisms?**

A) RNA
**B) DNA**
C) Protein
D) Lipid

**2. What are the rod-shaped structures in the nucleus of a cell that contain DNA?**

**A) Chromosomes**
B) Ribosomes
C) Mitochondria
D) Lysosomes

**3. How many pairs of chromosomes do most humans typically have in their cells?**

A) 12
**B) 23**
C) 46
D) 50

**4. Which type of DNA is passed down almost exclusively from mothers to their children?**

A) Nuclear DNA
**B) Mitochondrial DNA**
C) X-linked DNA
D) Y-chromosomal DNA

**5. Which sex chromosome is typically found in males but not in females?**

A) X chromosome
**B) Y chromosome**
C) Z chromosome
D) W chromosome

**6. What is the term for a specific segment of DNA that acts as a unit of heredity?**

A) Nucleotide
B) Genome
**C) Gene**
D) Cell

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**7. Approximately what percentage of DNA do all humans share?**

A) 50%
B) 75%
**C) 99.9%**
D) 25%

**8. In genetic terms, what are the different versions of the same gene called?**

**A) Alleles**
B) Proteins
C) Traits
D) Mutations

**9. Which process involves the passing of genetic information from parents to offspring?**

A) Mutation
**B) Heredity**
C) Evolution
D) Adaptation

**10. What is the scientific name for the complete set of genetic material in an organism?**

A) Phenotype
**B) Genome**
C) Genotype
D) Chromosome

**11. Which substance forms the 'rungs' of the DNA double helix ladder?**

A) Sugars
**B) Nitrogenous bases**
C) Phosphates
D) Proteins

**12. What is the observable physical characteristic of an individual resulting from their genetic makeup?**

A) Genotype
**B) Phenotype**
C) Allele
D) Mutation

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**13. Through which process do children receive half of their nuclear DNA from each biological parent?**

A) Mitosis
**B) Meiosis**
C) Cloning
D) Fission

**14. Which nitrogenous base always pairs with Adenine in a DNA molecule?**

A) Guanine
B) Cytosine
**C) Thymine**
D) Uracil

**15. What is the term for an alteration in the DNA sequence?**

**A) Mutation**
B) Replication
C) Expression
D) Translation

**16. What determines the unique order of nitrogenous bases in an individual's DNA?**

A) Environment
**B) Genetic code**
C) Diet
D) Age

**17. Which branch of science focuses specifically on the study of heredity and variation in organisms?**

A) Geology
**B) Genetics**
C) Physics
D) Chemistry

**18. What structure is famously described as a 'double helix'?**

A) Protein
B) RNA
**C) DNA**
D) Carbohydrate

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