

DNA Structure Quiz PDF

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What is the basic structural unit of DNA?

- Amino acid
- Nucleotide
- Lipid
- Carbohydrate

What type of bond holds the two strands of DNA together?

- Ionic bond
- Covalent bond
- Hydrogen bond
- Metallic bond

What is the shape of the DNA molecule?

- Single helix
- Double helix
- Triple helix
- Quadruple helix

Discuss the role of DNA in heredity and how it is passed from one generation to the next.

What is the importance of the genetic code, and how does it relate to protein synthesis?

Explain how DNA sequencing is used in modern biology and its applications.

Which of the following are true about the antiparallel nature of DNA strands? (Select all that apply)

- One strand runs 5' to 3', the other 3' to 5'
- Both strands run in the same direction
- It is essential for replication
- It allows base pairing

Explain the significance of the double helix structure in DNA.

Describe the process of DNA replication, highlighting the role of key enzymes.

How do mutations in DNA affect protein synthesis? Provide examples.

Which of the following is NOT a nitrogenous base found in DNA?

- Adenine
- Thymine
- Uracil
- Guanine

What roles do histones play in DNA structure? (Select all that apply)

- Protect DNA from damage
- Help in DNA replication
- Organize DNA into nucleosomes
- Facilitate DNA transcription

Which of the following are components of a nucleotide? (Select all that apply)

- Phosphate group
- Ribose sugar
- Nitrogenous base
- Deoxyribose sugar

Which of the following are types of mutations in DNA? (Select all that apply)

- Point mutation
- Insertion
- Deletion
- Transcription

In which direction does DNA polymerase synthesize new DNA strands?

- 3' to 5'
- 5' to 3'
- 2' to 4'
- 1' to 2'

Which nitrogenous base pairs with Adenine in DNA?

- Cytosine
- Guanine
- Thymine
- Uracil

What are the functions of DNA polymerase? (Select all that apply)

- Synthesizes new DNA strands
- unzips the DNA helix
- Proofreads and corrects errors
- Joins Okazaki fragments

Which enzyme is responsible for unzipping the DNA double helix during replication?

- DNA polymerase
- DNA ligase
- DNA helicase
- RNA polymerase

What component of the nucleotide forms the backbone of the DNA strand?

- Nitrogenous base
- Phosphate group
- Deoxyribose sugar
- Both B and C

Which processes are involved in gene expression? (Select all that apply)

- Transcription
- Translation
- Replication
- Mutation