

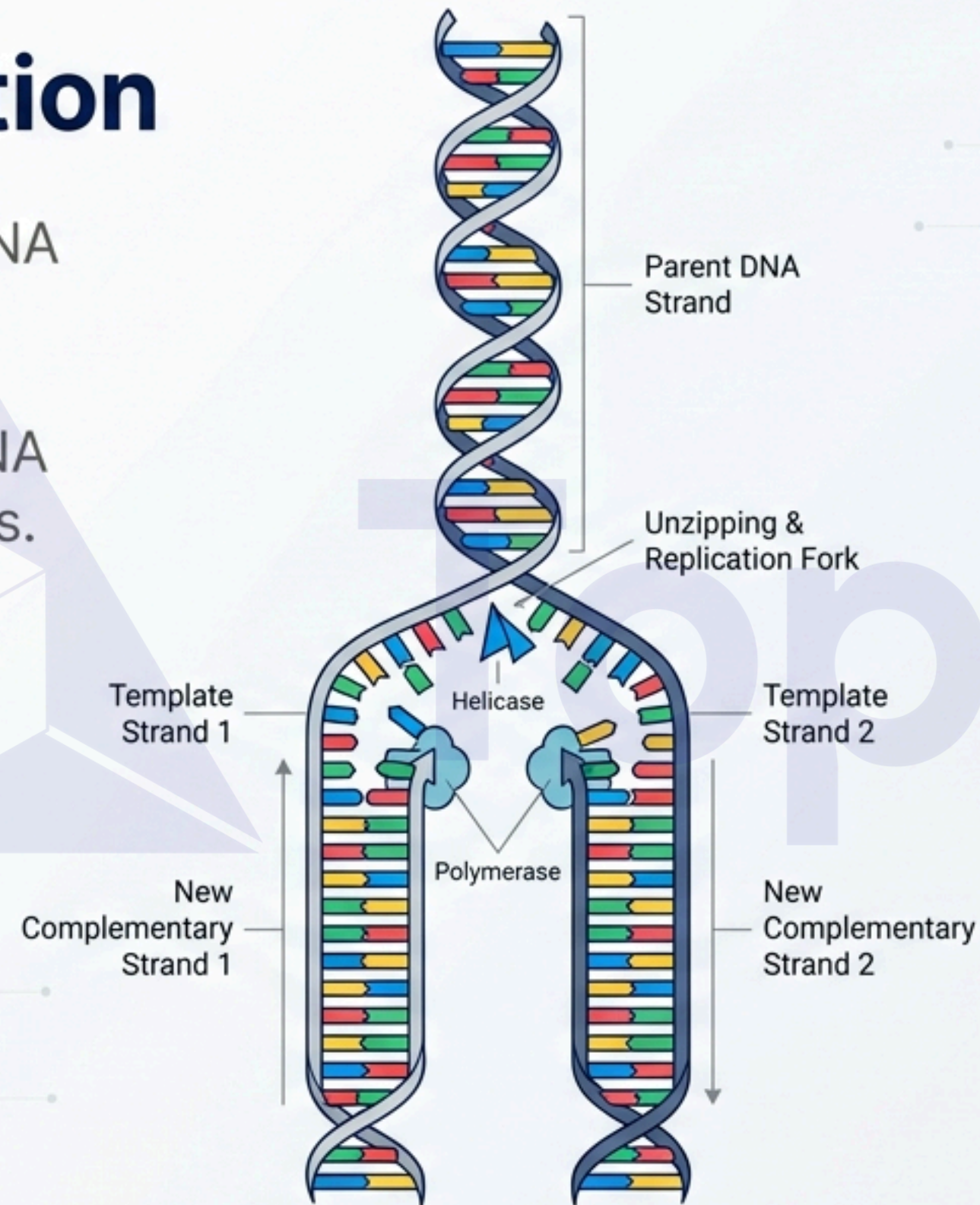
UNIT 10 • BIOMOLECULES

Biological Functions of Nucleic Acids



Self-Duplication

During cell division, a DNA molecule is capable of self-duplication, transferring identical DNA strands to daughter cells.



Output: 100% Identical
Genetic Transfer



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The Message



Contains the coded reserve of genetic information.

The Synthesis



Various RNA molecules (mRNA, rRNA, tRNA) actually synthesize the proteins.

Watch for this exam trap:
Do not credit DNA with direct protein synthesis.

DNA  Protein

DNA → RNA → Protein

 RNA carries out the actual synthesis.

Key Takeaways

- DNA ensures heredity via precise self-duplication during cell division.
-
- DNA holds the genetic message, but RNA carries out the actual protein synthesis.

The Chemical Basis of Heredity

DNA is exclusively responsible for maintaining the identity of different species of organisms over millions of years.



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