



CHEMISTRY ONLINE
— **TUITION** —

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BIOLOGY

BIOLOGICAL MOLECULES

LEVEL & BOARD:	AQA (A - LEVEL)
TOPIC:	Nucleic Acids
PAPER TYPE:	Solution 3
TOTAL QUESTIONS:	03
TOTAL MARKS:	17

Nucleic Acid - 3

1.

(a) 8

(b) Phosphodiester bond

(c)

- DNA helicase causes breaking of hydrogen bonds between DNA strands.
- DNA polymerase catalyzes the formation of DNA by moving along the strand, joining the nucleotides together by phosphodiester bonds.

•

(d)

- ATP has ribose and DNA nucleotide has deoxyribose.
- ATP has 3 phosphate groups and DNA nucleotide has 1 phosphate group.
- ATP base always adenine and in DNA nucleotide base can be different.

2.

(a) Deoxyribose.

(b)

Thymine: 18%

Guanine: 32%

(c) DNA polymerase

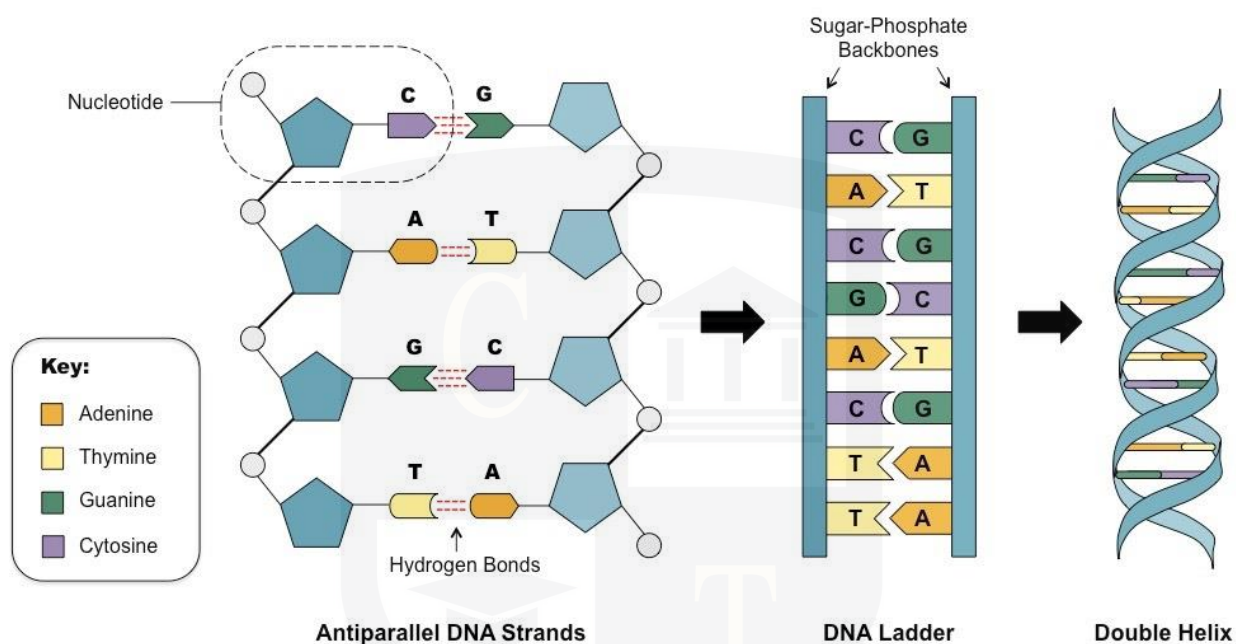
(d)

- Figure 1 shows DNA has antiparallel strands.
- Figure 1 shows shape of the nucleotides aligned differently.
- Enzymes have active sites with specific shape.
- Only the 3' end can bind with active site of enzyme of DNA polymerase.

I am Sorry !!!!

3.

(a)



(b)

DNA strand	Percentage of each base			
	A	C	G	T
Stand 1	16	34	21	29
Stand 2	29	21	34	16

(c) The shape of the 3' and 5' ends are different. DNA polymerase is the enzyme that attaches nucleotides to the strand and so it is only complementary to the 5' end to the strand.

I am Sorry !!!!!



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- Founder & CEO of Chemistry Online Tuition Ltd.
- Completed Medicine (M.B.B.S) in 2007
- Tutoring students in UK and worldwide since 2008
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