

A Level Biology B

H422/02 Scientific literacy in biology

Question Set 4

1. (a) (i) Fig. 4 shows a simplified diagram of part of a DNA molecule.

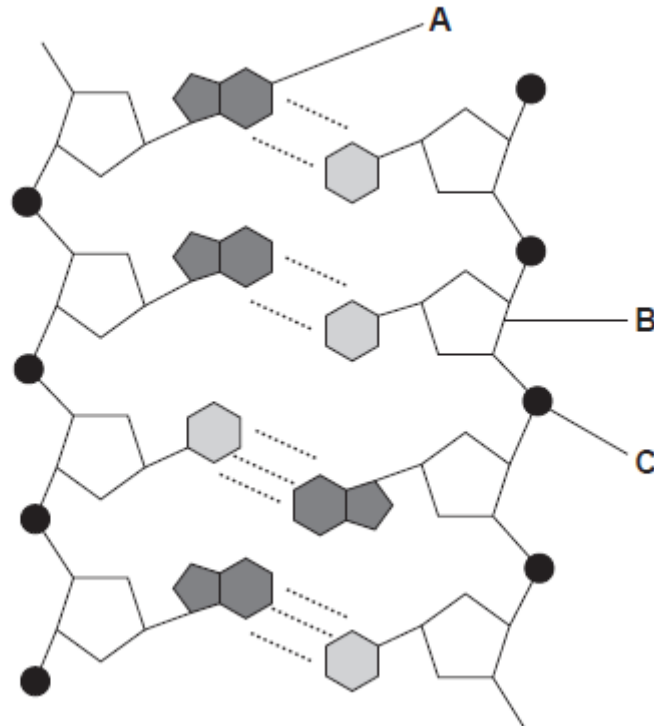


Fig. 4

Identify the parts of the DNA molecule labelled **A**, **B** and **C** in Fig. 4.

[3]

- (ii) The table below shows the results of an analysis of the base composition for each strand of a DNA molecule.

Complete the table by adding the missing values for strands 1 and 2.

DNA strand	Percentage of each base			
	A	C	G	T
strand 1		35	22	
strand 2	18			

[2]

- (b) Hydrogen bonding is central to the function of nucleic acids.

Explain how hydrogen bonding contributes to the process of semi-conservative replication of DNA.

[2]

- (c) Hereditary non-polyposis colorectal cancer (HNPCC) is a type of bowel cancer caused by a mutation in genes that normally repair DNA.

Explain why mutations in DNA repair genes lead to development of cancer in the bowel and other organs.

[3]

Total Marks for Question Set 4: 10

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