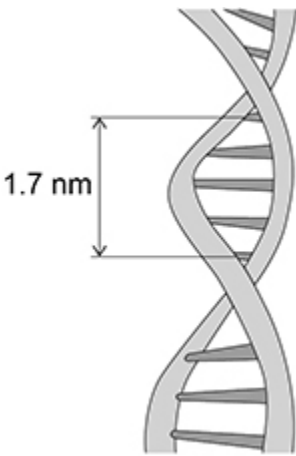




1.

The diagram below shows part of a DNA molecule.



(a) Name the type of bond between:

complementary base pairs \_\_\_\_\_

adjacent nucleotides in a DNA strand \_\_\_\_\_

(2)

(b) The length of a gene is described as the number of nucleotide base pairs it contains.

Use information in above diagram to calculate the length of a gene containing  $4.38 \times 10^3$  base pairs.

Answer \_\_\_\_\_ nm

(2)

(c) Describe **two** differences between the structure of a tRNA molecule and the structure of an mRNA molecule.

1 \_\_\_\_\_

\_\_\_\_\_

2 \_\_\_\_\_

\_\_\_\_\_

(2)





























- (i) Humans and grasshoppers have very similar percentages of each base in their DNA but they are very different organisms.

Use your knowledge of DNA structure and function to explain how this is possible.

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**(2)**

- (ii) The DNA of the virus is different from that of other organisms. Use the table above and your knowledge of DNA to suggest what this difference is. Explain your answer.

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**(2)**

**(Total 7 marks)**