



QUESTION WORKBOOK

DNA and RNA: four letters and a rule about pairing

Nucleic acids, genomes and protein synthesis · Unit B05

AQA 3.4.1 · OCR A 2.1.3 · Edexcel A Topic 2.4-2.6 · CAIE 6.1

5 questions · 16 marks

NAVY SCREEN EDITION

SECTION A · Short, 1 to 2 marks

- A1** Name the three components of a single DNA nucleotide, and name the bond that joins one nucleotide to the next along a strand. [2]

SECTION B · Standard, 3 to 5 marks

- B1** Compare the structure of a DNA molecule with the structure of a messenger RNA molecule. [4]

- B2** A nucleic acid extracted from a virus contains adenine 31%, guanine 19%, cytosine 27% and thymine 23%. Suggest what these figures tell you about the structure of the molecule, and suggest one further measurement that would test your conclusion. [4]

- B3** Explain why every base pair in a DNA molecule is the same width, and explain what this means for the shape of the molecule as a whole. [3]

- B4** A sample of double-stranded DNA contains 3200 bases in total, of which 960 are guanine. Calculate the number of adenine bases in the sample. [3]