



QUESTION WORKBOOK

Translation: turning a message into a working protein

Nucleic acids, genomes and protein synthesis · Unit B05

AQA 3.4.2 · OCR A 2.1.3, 6.1.1 · Edexcel A Topic 2.9 · CAIE 6.2

6 questions · 21 marks

NAVY SCREEN EDITION

SECTION A · Short, 1 to 2 marks

- A1** Name the site on a ribosome that holds the tRNA carrying the growing polypeptide chain, and name the bond formed between two adjacent amino acids. [2]

SECTION B · Standard, 3 to 5 marks

- B1** Describe what happens at a ribosome from the moment a second tRNA arrives until the ribosome has moved along the mRNA by one codon. [5]

- B2** Explain why a plasma cell, which secretes large quantities of antibody, contains a great many mitochondria. [4]

B3 Some antibiotics stop bacterial protein synthesis by binding to 70S ribosomes, and have no effect on the 80S ribosomes in human cytoplasm. Suggest why such drugs can nevertheless produce side effects in the patient. [4]

B4 The coding sequence of a mature mRNA molecule contains 927 bases and ends with a stop codon. Calculate the number of amino acids in the polypeptide produced and the number of peptide bonds within it. [3]

B5 Describe what happens to a polypeptide destined for secretion after it has been released from the ribosome. [3]
