

2.6 Transcription & Translation

Question Paper

Course	DP IB Biology
Section	2. Molecular Biology
Topic	2.6 Transcription & Translation
Difficulty	Easy

Time allowed: 10
Score: /5
Percentage: /100

Question 1

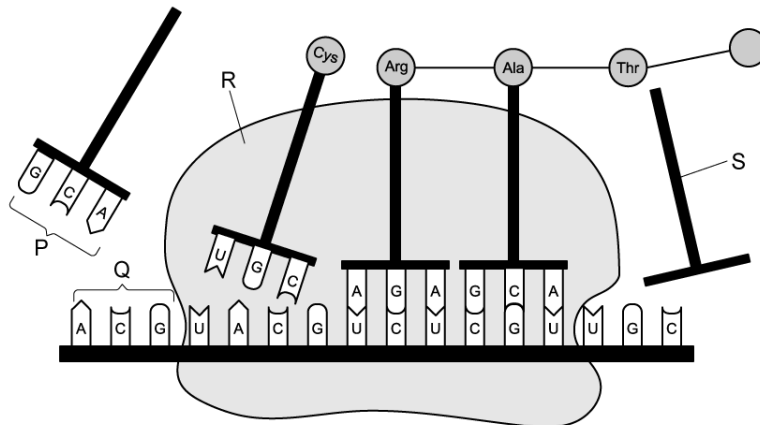
Which of the following steps is **not** involved in the process of transcription?

- A. The DNA double helix separates into single strands
- B. DNA polymerase binds to one of the single strands and moves along the gene
- C. Free RNA nucleotides are joined together by covalent bonds
- D. The RNA molecule detaches from the DNA template strand at the end of the gene

[1 mark]

Question 2

The following diagram shows the process of translation.



Which row of the following table correctly identifies the labelled components?

	P	Q	R	S
A.	anticodon	codon	ribosome	mRNA
B.	codon	anticodon	ribosome	tRNA
C.	anticodon	codon	ribosome	tRNA
D.	codon	anticodon	mRNA	ribosome

[1 mark]

Question 3

In a genetic engineering experiment, a piece of double-stranded DNA containing 18 000 nucleotides coding for a specific polypeptide is transcribed and translated.

What is the total number of amino acids in this polypeptide?

- A. 3 000
- B. 6 000
- C. 9 000
- D. 18 000

[1 mark]

Question 4

A section of a DNA molecule contains the following base sequences:

ATA CCT GCA

Which of the following would represent the base sequences of the codons on the mRNA molecule after transcription?

- A. ATA CCT GCA
- B. AUA CCU GCA
- C. TAT GGACGT
- D. UAU GGA CGU

[1 mark]

Question 5

Which one of the following would **not** be an advantage of using bacteria to produce human insulin?

- A. Some bacteria can survive at very high temperatures, which will make the insulin less likely to denature
- B. The insulin produced by the genetically modified bacteria is identical to human insulin
- C. Bacteria uses the same genetic code as humans which makes gene transfer possible between the species
- D. Bacteria can produce large quantities of insulin in a relatively short amount of time

[1 mark]