

2023 Bi H1 Q3

Section: DNA and the Genome

Topic: Gene Expression

Question Summary

The question asks which section of DNA does not code for a protein, but is still involved in another function within the genome.

Worked Solution

The question describes a DNA sequence that does not match any protein-coding gene. Such regions are called non-coding DNA — they are not translated into proteins, but can still serve important roles.

Some non-coding regions are transcribed into RNA molecules that perform other functions, such as:

- tRNA (transfer RNA) – carries amino acids to the ribosome.
- rRNA (ribosomal RNA) – forms part of ribosomes.

Since the sequence does not code for a protein but may be used to make RNA, the correct answer is tRNA.

■ Answer: A — tRNA

Revision Tips

- Non-coding DNA can produce functional RNA (tRNA, rRNA) but not proteins.
- mRNA is always transcribed from coding regions.
- Exons are the coding segments of genes, while introns and other non-coding regions are not translated.
- Remember:
 - Coding DNA -> mRNA -> protein
 - Non-coding DNA -> tRNA or rRNA