

## **Study Guide: From RNA to protein**

1. Explain the key differences between mRNA, rRNA and tRNA.
2. What is transcription and where does it occur in the cell?
3. What is translation and where does it occur in a cell?
4. What is the anti-sense strand of DNA, and is it always the same strand of the double helix?
5. What are the key stages in transcription, and what is the code for initiation?
6. What is the switch for termination of transcription?
7. What occurs at the 5' and 3' ends in processing the pre-mature mRNA into mRNA?
8. What is splicing and what are the implications of alternative splicing events on protein formation?
9. Why is the genetic code said to be called degenerate?
10. What is the significance of the A, P, and E sites in the large sub-unit of the ribosome?
11. What happens to mRNA and the ribosome after transcription termination?
12. Which DNA strand is listed in sequence databases and why?
13. How can a 'frameshift' occur and what are the probable consequences?
14. What is the significance of post-translational modification on protein structure and function?