

Protein Synthesis Test Study Guide

1. Which sequence of nucleotides in mRNA identifies an amino acid?
2. A segment of DNA has this base sequence : ACG TAG TCA GTA. Which is the base sequence of the complementary DNA strand?
3. Which enzyme is responsible for separating the double helix of DNA and assembling the single strand of mRNA that contains the code for making a protein?
4. During replication, a mutation occurs in a segment of DNA.
Original Base Sequence: ACT GAA TCA GTA
Replicated Base Sequence: TGA CTT AAG TCA T
Which mutation has **most likely** occurred?
5. Which **most likely** occurs when an amino acid bonds to a growing peptide chain during translation?
6. Which types of RNA are involved during protein synthesis?
7. During protein synthesis, the RNA sequence, UAC GAU CUA, is produced from the DNA sequence, ATG CTA GAT. Which process is occurring?
8. Thirty percent of a particular DNA strand is made of adenine. During transcription, a new mRNA molecule is made from this DNA strand. Which is **most** correct about the mRNA molecule produced?
9. Which **best** describes gene regulation?
10. What determines what kind of cell an undifferentiated cell will become?
11. All body cells in an organism contain the same DNA; however, the only DNA active in a cell is the DNA used to produce a certain protein. Which process is **most likely** being described?
12. Why are stem cells unique compared to other cells in the body?
13. Before a cell divides, DNA must replicate. In which part of the cell does DNA replication take place?
14. In complimentary DNA strands, which bases pair up together?
15. Which **best** describes the role of the parent strands in the illustration?
16. A segment of the DNA from a chimpanzee has the following sequence: TAC GAA GCA. Which mRNA would be transcribed from this segment of DNA?
17. In which way does the shape of tRNA **most** affect the synthesis of proteins?
18. Which **best** describes the complementary new strands of DNA once DNA replication has occurred?
19. Based on the diagram, which **best** describes the difference between RNA and DNA?