

CHAPTER 14: From DNA to Protein

1. What was Beadle and Tatum's hypothesis regarding enzymes?

2. How has that hypothesis been modified?

3. What occurs during transcription?

4. What occurs during translation?

5. List the highlights of the three stages of transcription.

a. Initiation _____

b. Elongation _____

c. Termination _____

6. What happens to the transcript RNA before it leaves the nucleus in eukaryotes?

7. What is the genetic code and why is said to be universal?

8. List several features about the genetic code.

9. Briefly explain how Marshall Nirenberg and Heinrich Matthaei "cracked the genetic code?"

10. Identify the roles of the players of the translation process.

a. Transfer RNA – _____

b. Aminoacyl-tRNA synthetase – _____

c. Ribosomes – _____

12. Identify and briefly describe the steps of translation. Initiation... Elongation... Termination...

13. What is the advantage of polyribosomes?

14. Give an example of how a polypeptide gets into the ER for additional processing.

15. How does protein synthesis differ between prokaryotes and eukaryotes?

16. Use the diagram to trace the flow of chemical information from the gene to the protein product.

