

Chapter 11 Review

1. Each gene is responsible for encoding a _____ rather than an entire protein.
2. Each amino acid consists of a central carbon atom attached to: an _____ group, a _____ group, a _____ atom, and a _____ group.
3. Amino acids are joined together by _____ bonds.
4. Polypeptides are _____ with an amino end and a carboxyl end.
5. The sequence of amino acids in the polypeptide is encoded by the sequence of _____ base pairs in the gene.
6. The function of a protein is dependant on its _____.
7. Mutations in a gene can change the primary structure of a polypeptide and affect its _____ and _____.
8. _____ is an initiation codon.
9. _____, _____, and _____ are stop codons.
10. The genetic code is linear in nature and is read from the _____' to _____' on mRNA.
11. The genetic code is read in _____ form, which is in groups of three nucleotides on mRNA.
12. The genetic code is _____ -- each codon specifies either a single amino acid or termination of translation.
13. The genetic code is _____ -- a single amino acid can be encoded by

- more than one codon.
14. The genetic code is _____ -- this means initiation of translation sets a reading frame and each RNA nucleotide is part of only one codon.
 15. The genetic code is nearly _____ -- it is the same or nearly the same in all organisms.
 16. The translation of an mRNA molecule takes place on a _____.
 17. The cellular structures responsible for translation and polypeptide synthesis are the _____.
 18. tRNA molecules deliver amino acids to codons during _____.
 19. List the four major steps of protein synthesis:
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 20. List the steps of the initiation of translation:
 - a. _____
 - b. _____
 - c. _____
 21. Eukaryotes have the Shine-Delgarno sequence. (true, false)
 22. In elongation, amino acids are joined to form a _____.

23. Name the three sites that can be occupied by tRNA on the ribosome:

a. _____

b. _____

c. _____

24. At _____, translation ends when the _____
codon is encountered.