DNA AND FAVORITE PROTEIN GUIDED READING QUESTIONS

Section 3.10: Protein Structure:

- Be able to define primary, secondary, tertiary and quaternary structure of the protein.
- What causes each type of folding to occur?

Section 3.11: Nucleic Acids

- What are the functions of nucleic acids?
- What is the monomer of nucleic acids?
- What is the structure of a nucleotide?
- What process joins nucleotides together/ or breaks them apart?
- What are the two types of nucleic acids? What are the differences between the two?
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Section 8.5: Discovering the structure of DNA

- What is a nucleotide, provide four examples, and describe what nucleotides have to do with DNA.
- Contrast purines vs. pyrimidines.
- Example why DNA is referred to as a double helix.
- What does DNA hold the instructions to make?

Section 4.8

- Provide the general functions for the following cellular organelles: the nucleus, endoplasmic reticulum, golgi complex, ribosomes, and nucleolus.

Sections 8.7-8.14

- What is a gene? How do you make a protein from a gene?
- Contrast amino acid and protein.
- What is the central dogma of protein synthesis?
- Describe the major purpose of transcription.
- What is mRNA and what is its purpose?
- What is RNA polymerase? What is its purpose?
- What is a codon? What do codons code for? What are codons used for?
- Describe the major purpose of translation.
- What role does the ribosome play in translation?
- What is tRNA? What role does it play in translation?

- Compare and contrast codon vs. anticodon? What role do each of them play in translation?
- In five steps or less, can you summarize the process of translation. In other words, briefly summarize the process in which protein is produced from mRNA.
- What happens at the E, P, and A sites of the ribosome during translation?
- Contrast the sections of genes called introns and exons.
- Explain the role of both RNA polymerase and the operator of a gene in terms of transcription?
- What role do repressors and enhancers play in gene expression?
- What is a mutation?
- Explain three types of point mutations: insertion, deletion, and substitution.
- What is a frame-shift mutation?
- Besides point mutations, what other types of mutation can take place in DNA? Explain at least one other type of mutation with detail.