Honors Biology

DNA part 2 study guide

Why does a cell replicate DNA?

When does a cell replicate DNA

What are the steps of the cell cycle, what are they called and what happens in each stage?

What four enzymes are involved in replication?

What enzyme unwinds the two DNA strands?

What is the advantage of a replication bubble?

What is the enzyme that marks where replication is to begin?

What enzyme puts nucleotides together? What direction must it work?

What removes the primase from the strand?

What enzyme proofreads the daughter strand?

Diagram a replication bubble?

Why do we need Okazaki fragments?

Diagram the steps of mitosis (both pictures and step by step explanation).

How is mitosis different from Cytokinesis?

Using a graph of the number of cells in each phase of mitosis, deduce the time of each phase.

Explain why a cell divides.

Compare and contrast DNA and RNA.

Explain what is DNA’s job?

Where does transcription occur?

Explain the three steps of transcription?

What is the primary enzyme found in transcription?

What are the jobs that RNA polymerase does during transcription?

What is the “Central Dogma” of biology and who developed it?

What is the difference between transcription and translation?

Diagram and explain the structure of a ribosome.

Explain the steps of translation.

What is the goal of translation?

Compare and contrast the three kinds of RNA.

Where does translation occur?

How does the ribosome know when to stop translating?

Be able to read a strand of DNA and determine the proper amino acid sequence based on that strand of DNA.

Explain how the different types of mutations (insertions, deletions, and substitutions) affect the order of Amino Acids in the peptide chains.

List and explain the organelles in a cell that are involved in protein synthesis (use insulin as an example).