

## DNA Structure, DNA Replication, Protein Synthesis Review for Quiz

### ❖ DNA Structure and DNA Replication

- Backbone is comprised of what two parts?
- “Rungs” of ladder are comprised of what four bases?
- Overall shape of DNA is called?
- Enzyme responsible for “unzipping” DNA: \_\_\_\_\_ (ase)
- Enzyme responsible for adding new nucleotides: \_\_\_\_\_ (ase)
- What three parts comprise a nucleotide (draw a nucleotide)?
- What role does DNA replication play in the cell cycle (new cells coming from existing cells)?
- C pairs with \_\_\_\_\_?
- A pairs with \_\_\_\_\_?
- Why is base pairing important?
- List three examples when DNA replication needs to take place.
- How is DNA replication different from transcription (list two specific ways)?
- What is the final product of DNA replication?

### ❖ Protein Synthesis (transcription and translation)

- In what organelle does transcription take place?
- What enzyme is responsible for the “unzipping” of DNA and for bringing in new nucleotides in transcription?
- What is copied during transcription (i.e.; what is the original “template”)?
- What is the name of the “copy”?
- Once the mRNA copy is constructed, what organelle does it travel to?
- How many bases make up a codon?
- What, specifically, does ONE codon code for?
- What is the final product of translation?
- What does rRNA do?
- What are the monomers of a protein?
- What is a gene?
- Why is a gene important during transcription and translation (protein synthesis)?
- What is a mutation?
- List three ways that a mutation can affect the final protein product.
- List three ways that a mutation can affect the final protein product.