**From Genes To Proteins** (p. 208 – 214)

**I. Decoding The Information In DNA**

 **1. List three main differences between RNA (ribonucleic acid) and DNA.**

 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **2. Match the following terms with the correct definitions.**

 1. \_\_\_\_\_\_\_\_ Transcription A. Process by which proteins are made from DNA

 2. \_\_\_\_\_\_\_\_ Translation B. Reading and assembling of amino acid chains

 3. \_\_\_\_\_\_\_\_ Protein Synthesis C. Protein instructions passed from a gene to RNA

**II. Transfer Of Information From DNA To RNA**

 **1. Define the term RNA polymerase.**

 RNA polymerase –

 **2. Circle the letter of each sentence that is true about transcription.**

 a. During transcription, DNA polymerase binds to RNA & separates the DNA strands.

 b. One strand of DNA is used as a template to assemble nucleotides into a strand of RNA.

 c. RNA polymerase binds only to DNA promoters, which have specific base sequences.

 d. Promoters are signals in RNA that indicate when to begin transcription.

 **3. Both strands of DNA serve as templates during transcription.**

 Circle One : True False

 **4. Transcription occurs in the nucleus (eukaryotic).**

 Circle One : True False

**III. The Genetic Code : Three-Nucleotide “Words”**

 **1. Define the term messenger RNA.**

 Messenger RNA –

 **2. Proteins are made by joining \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into long chains**

 **called polypeptides.** (Not in the book.)

 **3. What is the genetic code?** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **4. Define the term codons.**

 Codons –

 **5. Circle the letter of the number of possible three-base codons.**

 a. 4 b. 12 c. 64 d. 128

 **6. All amino acids are specified by only one codon.**

 Circle One : True False

 **7. Circle the letter of the codon that is not a stop codon.**

 a. UAA b. UGA c. UAG d. AUG

**IV. RNA’s Role In Translation**

 **1. Match the following terms with the correct definitions.**

 1. \_\_\_\_\_\_\_\_ Transfer RNA A. Sequence of tRNA complementary to mRNA

 2. \_\_\_\_\_\_\_\_ Anticodons B. RNA molecules that are part of ribosomes

 3. \_\_\_\_\_\_\_\_ Ribosomal RNA C. RNA that carry a specific amino acid on one end

 **2. List the seven steps of protein synthesis.**

 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **3. For the most part, the genetic code is universal.**

 Circle One : True False