Protein synthesis!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

Read Q and answers below then answer questions 1-13 on your own paper.

1. **How do we know what proteins to make?**

A: The directions for each protein is written in the DNA code.

A: The code is written in bases using A, T, C, G

1. **How do we make some proteins different than other people?**

A: The order (sequence) of our DNA can be different (it will have directions for a different protein)

1. **What is a protein?**

A: A protein is a chain of amino acids bonded together by peptide bonds. It is known as a polypeptide.

1. **How can proteins be different?**
2. Proteins act differently because of the order that different amino acids are hooked together.
3. **Where are all these proteins made?**

A: At the ribosomes

1. **DNA can NOT leave the nucleus. How do the directions get to the ribosomes?**

**A:** The CODE is Rewritten onto a molecule called mRNA. Its called Transcription.

1. **What’s the difference?**

A: mRNA can leave the nucleus

A: mRNA is single stranded

A: mRNA contains U (uracil) instead of T (thymine)

1. **How does the chain of amino acids end up in the correct order?**

A: Every 3 letters is “READ” and codes for an amino acid. This is called TRANSLATION.

1. **How do the amino acids get to the ribosomes?**

A: A molecule called tRNA brings them. The t = transfer

1. Which of these shows the correct order for the central dogma of molecular biology?
   1. DNA to protein to RNA C. protein to DNA to RNA

RNA to DNA to protein D. DNA to RNA to protein

1. What is the mRNA code complementary to the DNA code below?

**AAC GCC AAA GGG**

1. How are the amino acids linked together during translation?
2. What is the relationship between an organism’s DNA and protein produced?
3. In the production of proteins, what is the function of messenger­RNA molecules?
4. Proteins are composed of polypeptide chains. What are polypeptide chains composed of?
5. In which part of the cell does the initial process of transcription take place?
6. What is the complementary messenger­RNA sequence for the DNA sequence C­A­A­G­G­T?
7. Which type of RNA delivers the genetic code to the ribosome?
8. Which is the DNA complement of ATA GCG GCC?
9. What two organelles are involved in protein synthesis?
10. What is the function of transfer RNA?
11. Which is a way that RNA differs from DNA?

Answer Below: