DNA and RNA Study Guide – ANSWER KEY

1. What is the structure of DNA?

DNA is a double helix model, much like a zipper on a jacket.

2. What are the four nitrogenous bases in DNA?

Adenine, Guanine , Cytosine, Thymine

3. What are the four nitrogenous bases in RNA?

Adenine, Guanine, Cytosine, Uracil

4. A single strand of DNA acts as a template for:

mRNA

5. What are the three parts of a Nucleotide?

Phosphate Group, Five Carbon Sugar, Nitrogenous Base

6. In messenger RNA, each codon specifies a particular

Amino Acid

7. Before a cell divides, it must duplicate its own DNA in a process known as…

DNA Replication

8. The genetic code in DNA depends upon the order or sequence of…

Nitrogenous Bases

9. If one strand of DNA has the nitrogenous base sequence ATCGT, the sequence of bases on the COMPLEMENTARY STRAND of DNA is…

TAGCA

10. What type of RNA is responsible for bringing amino acids to the ribosome for protein synthesis?

tRNA

11. The messenger RNA will carry the DNA's instructions out of the nucleus to the:

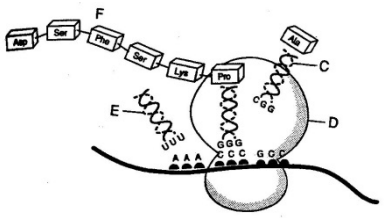
Ribosome

12. Given the following DNA strand, what would the mRNA strand be?

T A C G T T G C A

A U G C A A C G U

Use the figure below to answer the following questions:



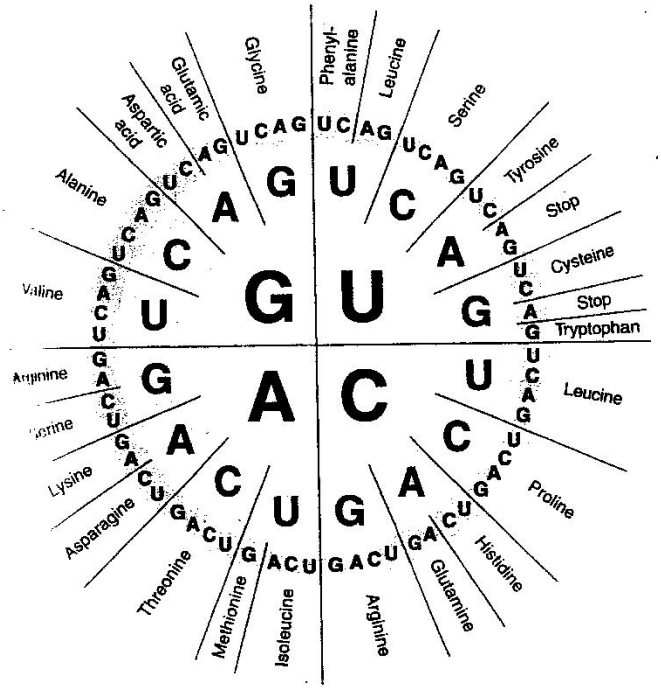
13. What is the figure demonstrating?

Translation

14. The process by which the genetic code of DNA is copied into a strand of RNA is…

Transcription

Use the following table to answer the following questions



15. Analyze the following DNA sequence:

A T G C G A T C T A G C

U A C G C U A G A U C G

What is the correct order of amino acids represented by this DNA sequence?

Tyrosine-Alanine-Arginine-Serine

16. List three stop codons.

UGA UAA UAG

17. When DNA separates into two strands, the DNA would ***most likely*** be directly involved in which of the following processes?

DNA Replication

18. If an adenine nucleotide is deleted from a nucleotide sequence in a DNA molecule, which of the following would result from this deletion?

A Mutation