Name:





- 1. What is the name of the site where the two DNA strands split apart? <u>replication fork</u>
- 2. What does the *helicase* enzyme do? <u>breaks hydrogen bonds between base pairs</u>
- 3. What enzyme attaches new nucleotides to the old stands of DNA? <u>DNA polymerase</u>
- 4. How does DNA Polymerase know which nitrogen base to add to each of the old bases?

Base pair rule. A can only fit with T and C can only fit with G

4.a Working as a DNA polymerase attach the correct bases to the two halves of the DNA strand!

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

5. What is the name of the process when DNA makes copies of itself? <u>transcription</u>

6. What information does DNA store? <u>All the genetic information to produce an organism</u>

7. How do RNA and DNA work together? <u>DNA stores the information and RNA reads it and uses it</u>

8. What is the final product of RNA? <u>protein</u>

9. What are the major differences between RNA and DNA (Write it out in sentence form)?

\_\_\_\_DNA is a double helix whereas RNA is single stranded. DNA contains Thymine but in RNA the Thymine is replaced with Uracil. There is only one kind of DNA but there are three kinds of RNA. The sugar in DNA is deoxyribose and the sugar in RNA is ribose.\_\_\_

10. What is the name of the process of REWRITTING DNA as RNA? <u>transcription</u>

12. Now you make a RNA copy of the following DNA strand!

-A-U-
-T-A-
-G-C-
-C-G-
-A-U-
-C-G-
-T-A-
-A-U-
-G-C-
-T-A-

13. What is the RNA copy of DNA called and why? <u>messenger RNA because it carries the</u> "message" of the DNA to a ribosome\_\_\_\_

14. What is a codon, and why is it the "words" of the RNA language? <u>Codons are groups of 3</u> bases in mRNA that are the "words" or RNA language because they get "translated" into amino acids\_\_\_\_\_

15. What is translation? <u>3 different kinds of RNA are working together to assemble amino</u> acids into a protein chain\_\_\_

16. List each of the RNAs below and then describe their main function.

a. m\_RNA FUNCTION: \_\_messenger - carries message from nucleus to ribosome\_\_\_

b.\_t\_RNA FUNCTION: <u>transfer – picks up amino acids from cytoplasm and carries</u> them to a ribosome\_\_\_

c. r\_RNA FUNCTION: \_\_ribosomal - reads mRNA and makes a protein using tRNA\_\_

17. What lines up with the codon on the mRNA? <u>tRNA anticodons</u>

17.a What are the anticodons for the following mRNA sequence: AUGUUUCGAAUC ?

UACAAAGCUUAG

18. Write down the final note (5.) here <u>Amino acids detach from the tRNA and attach to a</u> growing protein chain. tRNA heads off to find another amino acid and begins again\_\_\_\_\_