

**Chapter 24: DNA Biology NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

***Read pages 488-497 and answer the following questions***.

1. Draw a double helix structure of DNA. Label a nucleotide, sugar, phosphate, nitrogenous base. Be sure to show H-Bonds.
2. What is complementary base pairing? What are purines? What are pyrimidines? Which bases pair in DNA?
3. What does it mean that the 2 DNA strands are antiparallel? What is the 5’ end? What is the 3’ end? Draw this.
4. What is the function of DNA replication? When is it needed?
5. Define semi-conservative replication.
6. Describe the 4 steps of DNA replication.
7. What is the function of the enzyme DNA helicase?
8. What is the function of the enzyme DNA polymerase?
9. What is the function of the enzyme DNA ligase?
10. What are four differences between DNA and RNA?
11. What is a gene?
12. What are the three types of RNA and what are there functions?
13. Define transcription. What is the product of transcription?
14. What is the function of RNA polymerase?
15. What is the difference between primary mRNA and mature mRNA?
16. What is the difference between introns and exons? How is an exon modified?
17. Define translation. What is the product of translation?
18. What is a triplet code?
19. Why do most amino acids have more than one codon? (For example CCG and CCA code for proline?)
20. What is the function of transfer RNA (tRNA) during translation?
21. What is an anticodon?
22. What is the function of ribosomal RNA (rRNA) during translation?
23. Where are ribosomes located in a cell and where is rRNA produced?
24. What is a polyribosome?
25. \*\*What sequence of bases (mRNA, tRNA) determines the amino acids of a polypeptide?
26. Briefly summarize the steps of Translation below:

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| ***Chain Initiation*** | ***Chain Elongation*** | ***Chain Termination*** |
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