

Name _____

Period _____

Ms. Foglia

Date _____

AP: CHAPTER 16: THE MOLECULAR BASIS OF INHERITANCE

1. After Morgan and fellow scientists developed the Chromosomal Theory of Inheritance, the search was on for the chemical mechanism of inheritance. What are the two components of the chromosome?

2. From initial logic, which component would be the most likely candidate for the genetic material and why?

3. What did Griffith, Avery, and others accomplish with bacteria?

4. Define transformation. _____

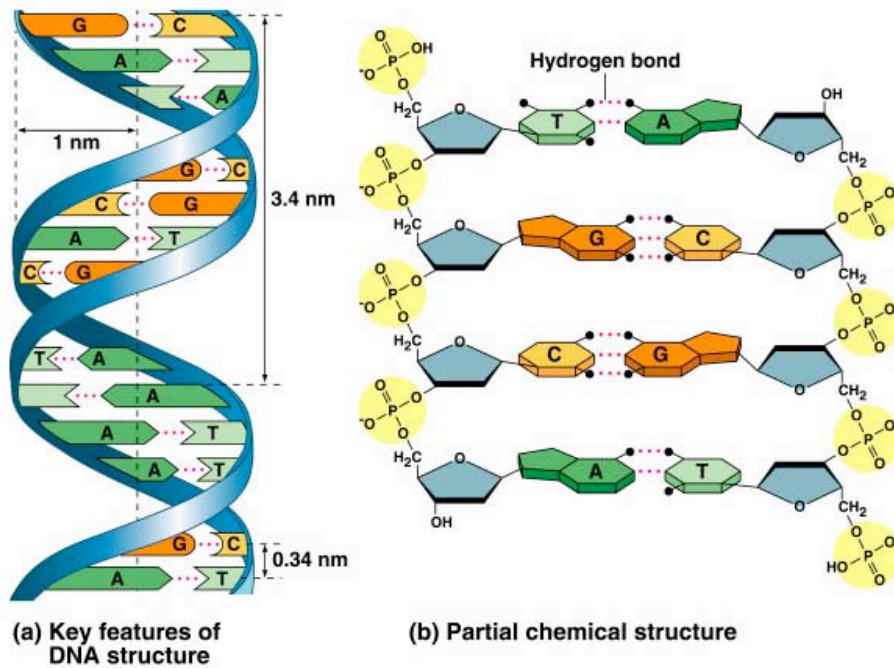
5. What did the experiments done by Alfred Hershey and Martha Chase show?

6. What are Chargaff's rules?

7. If a species has 35% adenine in its DNA, determine the percent of the other three bases.

8. What was the role of Maurice Wilkins and Rosalind Franklin in determining the structure of DNA?

9. Use the diagram to describe the structure of DNA. Include several comments.



10. What is the advantage of the double stranded aspect of the DNA? _____

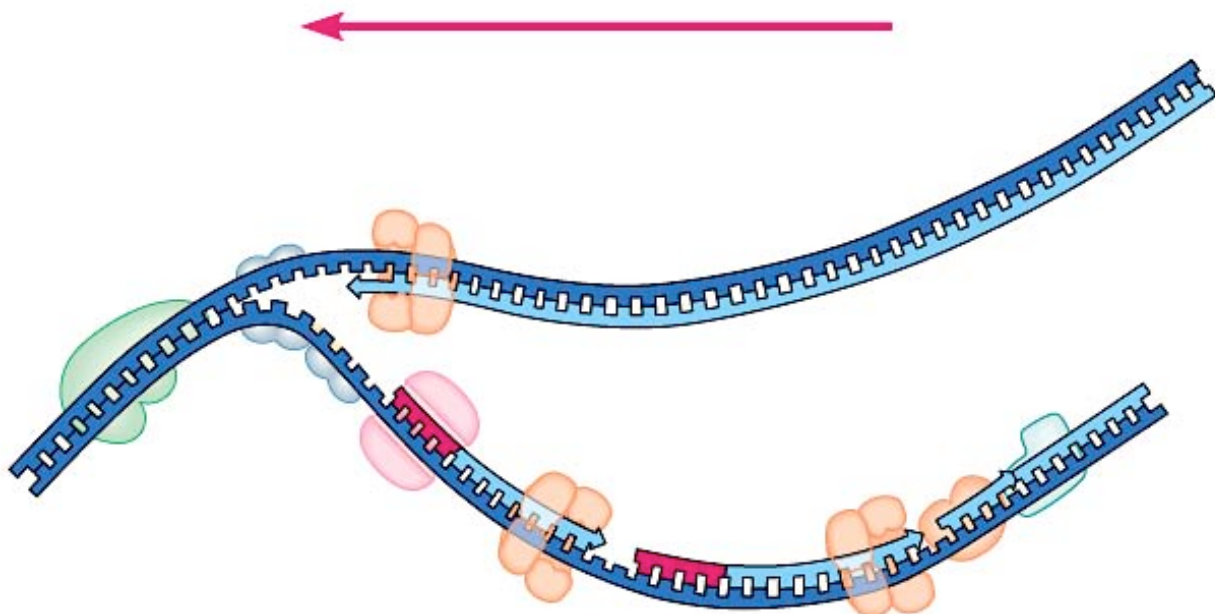
11. Which model of DNA replication is accepted? _____

12. What happens at the DNA replication fork?

13. Make a list of the enzymes involved in replication and their role.

14. Why does the DNA have to add nucleotides in the 5' to 3' direction?

15. Label the diagram of DNA replication. Include the directions and the terms.



16. Describe the "priming of the DNA" before replication. _____

17. List some of the steps involved in DNA repair. _____

18. What is the problem that occurs at the ends of the chromosome during replication?

19. What is a telomere and its role in cell division. _____

20. Why was there no selection pressure for prokaryotes to evolve a telomere-like solution on their chromosome? _____

21. Why is telomerase an active area in cancer research? _____

