

## **The Molecular Basis of Inheritance**

### **Chapter 16**

1. Describe the model of DNA proposed by Watson and Crick, including a description of the monomers and how they are connected together, and the antiparallel nature of the two strands.
2. Given the polynucleotide sequence GAATTC, explain what further information you would need in order to determine which is the 5' end?
3. If a species has 35% adenine in its DNA, determine the percent of the other three bases.
4. What is the importance of complimentary base pairing in DNA replication?
5. Outline the process of DNA replication. Be sure to include all of the relevant enzymes.
6. DNA replication proceeds along both strands in both directions from the origin. What is the solution to the problem of the antiparallel strands?
7. Why are primers required in DNA replication?
8. Explain why the ends of DNA molecules cannot be replicated and how this problem is solved.
9. Explain how errors are corrected during and after DNA replication. Explain the importance of DNA proofreading and repair.
10. What makes complimentary base pairing so useful for DNA replication and detecting errors?
11. What is the problem associated with replicating the ends of chromosomes? How is the problem solved?