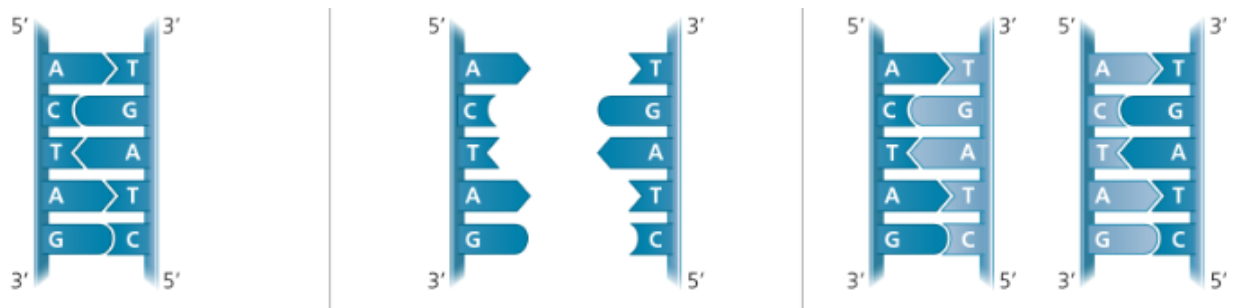


The Molecular Basis of Inheritance Chapter 16

1. a) Describe the model of DNA proposed by Watson and Crick.
 - b) DNA has a negative charge. Identify the characteristic of a nucleotide that is the cause of this negative charge.
 - c) Explain what is meant by the term antiparallel.
2. Given the polynucleotide sequence GAATTC, identify 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. Use the diagram above to describe the process of DNA replication.
5. Explain the importance of complimentary base pairing in DNA replication.
6. a) Describe the effect on a bacterial cell of inhibiting DNA pol III.
 - b) Describe the leading and lagging daughter DNA strands you would expect to see in a bacterial cell in which DNA pol I were inhibited.
 - c) Describe the effect on DNA replication if RNA primase were inhibited.
7. Describe how errors are corrected during DNA replication. Explain the importance of DNA proofreading and repair.
8. Explain why natural selection would not be possible if all errors made during DNA replication were corrected.
9. Explain the importance of telomeres.