

Chapter 31 – Nucleic Acids– Concepts

1. Structure

Difference between Nucleosides and Nucleotides	Differences between DNA and RNA (5)
Difference between Ribose and Deoxyribose	
Naming/Abbreviations for Nucleosides and Nucleotides	Numbering for Bases and Sugars
High-Energy Phosphate Anhydride Bonds	Chemical reaction for ATP
Complementary (2)	Importance of Hydrogen Bonding (2)

2. DNA Replication

Define: Heredity, Genome, Gene, Mitosis, Meiosis	Process of Replication (Difference between the two strands, sketch a picture))
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3. Cancer

Define Cancer:	Causes/Contributing Factors
Oncogene	
Tumor-Suppressing Gene	Methods to Treat/Cure Cancer 1. Disruption of Replication (2) 2. Unnatural Nucleosides 3. Cellular Control Methods (2)
Apoptosis	

4. Miscellaneous Topics

Human Genome Project	Genetic Engineering
Mutations	Steroids – structure/use

5. RNA

Overview: Differences between RNA and DNA	tRNA (role + basic structure) – sketch a picture
mRNA (role + basic structure)	
rRNA (role + basic structure)	sRNA/ncRNA (4 types)
Post transcription modification (3)	Transcription

6. Genetic Code

Use of Table 31.3/Cheat sheet	Given the DNA/mRNA/AA code derive the other codes
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7. Translation

Define:	Step 2 - Elongation
Step 0 - Preparatory	Step 3 - Termination
Step 1 - Initiation	Basic Ribosome Structure (small/large, E/P/A)