

Topic # 10

Nucleic Acids, DNA, Genes, and Replication

(Campbell and Reece p. 86-89, 296-307, 218-226)

I. Nucleic acids.

A. Nucleotides.

B. DNA.

C. RNA.

II. Gene definition.

III. DNA replication.

A. The basics – double helix.

B. DNA polymerases.

1. Complex of enzymes
2. Replication origins.
3. Proceeds in both directions
4. Possible mistakes

5. DNA repair.

C. Mutations.

IV. Mitotic cell division. (218-226)

A. Chromosomes.

B. Duplication.

C. Interphase.

1. G1.

2. S.

3. G2.

D. M phase - mitosis and cytokinesis.

1. Prophase.

2. Metaphase.

3. Anaphase.

4. Telophase.

E. Product:

V. Key Terms.

adenine
anaphase
base substitution
cell cycle (G1, S, G2, and M)
Centromere
chromatid
Chromosomes
cytokinesis
cytosine
Deoxyribose
DNA
DNA polymerase
double helix
guanine

haploid
interphase
metaphase
mitosis
mutation
nucleic acid
nucleotide
prophase
purine
pyrimidine
replication
Ribose
RNA
telophase
thymine

uracil