

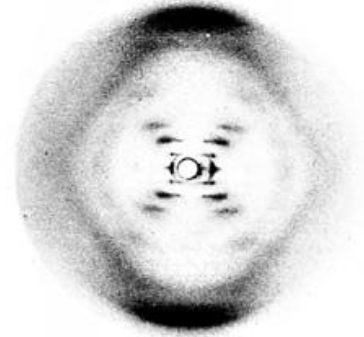
DNA

The molecular Basis of Inheritance

I) DNA Structure

A) Discovery

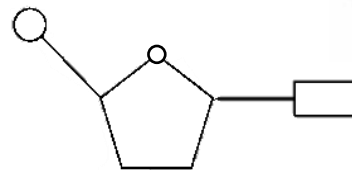
- 1) James _____ and Francis _____ won the Nobel Prize for determining the _____ of _____ in _____
- 2) Rosalind _____ was not given credit until after her death.
 - (a) She _____ DNA using _____; the pattern indicated DNA was shaped like a _____



B) DNA is a _____ of _____

C) Each _____ is composed of 3 subunits

- 1) _____ (phosphate)
- 2) A _____ (deoxyribose)
- 3) A _____ base



D) Four Possible Bases

- 1) _____ (A) – a _____
- 2) _____ (G) – a _____
- 3) _____ (T) – a _____
- 4) _____ (C) – a _____

E) Complimentary Base Pairing

- 1) Adenine (A) always pairs with Thymine (T) using _____
- 2) Guanine (G) always pairs with Cytosine (C) using _____

F) The _____ of these bases determines an organism's _____

G) DNA is composed of 2 long _____ of nucleotides

- 1) The strands are joined together like a ladder
- 2) The strands twist to form a _____
- 3) The _____ of _____ and _____ provide the rungs with a _____ width (what Franklin saw!)
- 4) The _____ molecules make up the sides of the ladder, while the _____ make up the rungs



II) Replication of DNA

A) _____ replication

- 1) Each _____ molecule consists of _____ of nucleotides and one from the _____ molecule
- 2) The two _____ molecules will be _____ to the parent molecule

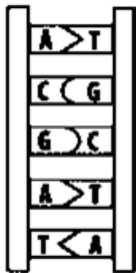
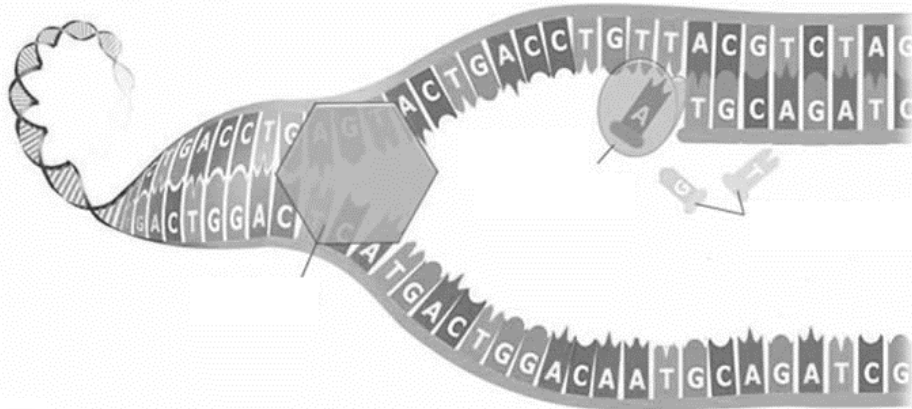
B) Process of Replication



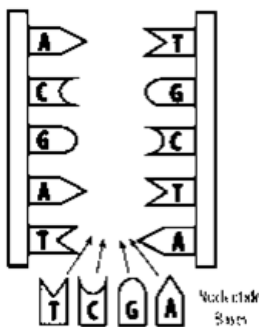
- 1) Before replication begins, the two strands of the parent molecule held together by _____
- 2) Enzyme _____ and “_____” the double stranded-DNA
- 3) New _____ DNA _____ fit into place along separated strands by complementary base pairing. These are positioned and joined by _____ by the enzyme _____
- (a) DNA polymerase _____ to make sure that each _____ and _____ and _____ incorrect nucleotides; if an error is not corrected this is a _____



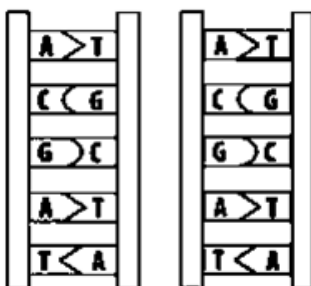
- 4) _____ seals any _____ in the sugar-phosphate _____
- 5) The two double helix molecules are _____ to each other and to the _____ molecule!



Parental DNA molecule contains so-called _____ hydrogen-bonded by _____.



Region of _____. Parental DNA is _____ and _____. New nucleotides are pairing with those in _____.



_____ is complete. Each double helix is composed of an _____ (_____) strand and a _____ (_____) strand.

Inquiry: Read 5.3 page 84 Answer these Questions

1. What two types of molecules are chromosomes made of?
2. What two roles do proteins play in chromosomes?
3. What is the function of histones in chromosomes?

Inquiry: Read page 503 Answer these questions;

1. What did Watson and Crick know from the work of others that helped them to build their model of DNA?
2. What is the significance of their statement, 'It has not escaped our notice that the specific pairing we have postulated immediately suggests a possible copying mechanism for the genetic material'?

Inquiry: Read p503-505 Answer p505 Check Your Progress #1-3

THE CHROMOSOME

