

Chapter – 5 | Molecular Basis of Inheritance**QUIZ
PART-02**

1. DNA is a polymer of:

- A. Amino acids
- B. Deoxyribonucleotides
- C. Ribose sugars
- D. Proteins (B)

Explanation : DNA is a long polymer made up of deoxyribonucleotides.

2. Which sugar is present in DNA?

- A. Ribose
- B. Glucose
- C. Deoxyribose
- D. Fructose (C)

Explanation : DNA contains deoxyribose sugar, while RNA contains ribose sugar.

3. A nucleotide is formed by the combination of:

- A. Sugar + nitrogenous base
- B. Nitrogenous base + sugar + phosphate
- C. Protein + phosphate
- D. Sugar + amino acid (B)

Explanation : A nucleotide consists of a nitrogenous base, pentose sugar, and phosphate group.

4. The bond between a nitrogenous base and sugar in a nucleoside is:

- A. Peptide bond
- B. Hydrogen bond
- C. N-glycosidic linkage
- D. Phosphodiester bond (C)

Explanation : Nitrogenous base attaches to the 1' carbon of sugar through an N-glycosidic linkage to form nucleoside.

5. Which nitrogenous base is present in RNA but absent in DNA?

- A. Thymine
- B. Adenine
- C. Uracil
- D. Guanine (C)

Explanation : RNA contains uracil instead of thymine.

6. Watson and Crick proposed the double helix model of DNA in:

- A. 1869
- B. 1928
- C. 1953
- D. 1962 (C)

Explanation : Watson and Crick proposed the DNA double helix model in 1953 using X-ray diffraction data.

7. According to Chargaff's rule, adenine is equal to:

- A. Guanine
- B. Cytosine
- C. Thymine
- D. Uracil (C)

Explanation : In DNA, adenine pairs with thymine, and their amounts are equal.

8. How many hydrogen bonds are present between guanine and cytosine?

- A. One
- B. Two
- C. Three
- D. Four (C)

Explanation : Guanine and cytosine form three hydrogen bonds, providing stability to DNA.

9. The two strands of DNA double helix are:

- A. Parallel
- B. Antiparallel
- C. Identical
- D. Circular (B)

Explanation : One DNA strand runs 5' → 3' while the other runs 3' → 5', showing antiparallel polarity.

10. The process of formation of RNA from DNA is called:

- A. Translation
- B. Replication
- C. Transcription
- D. Reverse transcription (C)

Explanation : Transcription is the process where DNA information is copied into mRNA.