

Exam. Code : 107402

Subject Code: 1656

B.Sc. (Bio Technology) 2<sup>nd</sup> Semester (Batch 2021-24)

**GENETICS**

**Paper—BTL-152**

Time Allowed—3 Hours]

[Maximum Marks—40

**Note** :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each Section. The **FIFTH** question may be attempted from any Section. All questions carry equal marks.

**SECTION—A**

1. Differentiate between :—
  - (a) Back cross and test cross
  - (b) Dihybrid and trihybrid cross.
2. Write short notes on :—
  - (i) Incomplete dominance and Codominance
  - (ii) Multiple allelism.

**SECTION—B**

3. Explain the nucleosome structure of chromatin with the help of diagram.

4. Explain briefly :—
- (i) Polytene and Lampbrush chromosomes
  - (ii) Repetitive DNA.

#### SECTION—C

5. Differentiate between paracentric and pericentric inversions with the help of diagrams.
6. Write short notes on :—
- (a) Maternal Inheritance
  - (b) Cytoplasmic male sterility
  - (c) Kappa particles
  - (d) Aneuploidy.

#### SECTION—D

7. What is chromosomal theory of Linkage ? Explain the types and significance of linkage.
8. Briefly explain the following :—
- (a) Hardy Weinberg Principle
  - (b) Transduction.