

Roll No.

91549

**B. Sc. (Bio-Technology) 2nd Sem.
(New Scheme) Examination – May, 2016**

GENETICS

Paper : BT-203

Time : Three Hours]

[Maximum Marks : 40

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : There are *nine* questions in all. Question No. 1 is *compulsory*. Attempt *four* more questions, selecting *one* question from each Unit.

1. Write on the following : 1 × 10

- (a) Monoploid and haploid
- (b) Incomplete dominance
- (c) Chemical composition of chromosome
- (d) Intron

- (e) Back cross
- (f) Expressivity
- (g) Pseudoallele
- (h) Inbreeding
- (i) Linkage
- (j) Chromosome aberration

UNIT - I

- ~~2.~~ (a) What is concept dominance ? Explain the incomplete dominance with example. 5
- (b) Differentiate between mitosis and meiosis. 3
- 3. (a) Define the laws of independent assortment. Explain with the help of example. 5
- (b) Why the Mendel choose Pea plants for his experiment ? Write the seven characters of pea plants which he chosen for experiment. 3

UNIT - II

- 4. (a) Define epistasis. Explain the dominant epistasis with example. 5

- (b) Unique and repetitive DNA. 3
5. What is euchromatin ? How it is different from heterochromatin ? Describe the heterochromatin in detail. 8

UNIT – III

6. Define mutation. What are the causes of mutation ?
Explain the different kinds of mutation. 7
7. (a) Write the mechanism of sex determination. 4
(b) Write notes on inversion. 3

UNIT – IV

8. (a) Define crossing over. Give the molecular mechanism of crossing over. 4
(b) Explain the cytoplasmic inheritance with example. 3
9. (a) Allelic and genotypic frequency. 4
(b) Genomic imprinting. 3