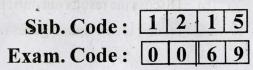
(i) Printed Pages: 3

Roll No.

(ii) Questions :9



B.Sc. (Hons.) 3rd Semester

1125

BIO-TECHNOLOGY

Paper : BIOT-Sem–III–IV–T : Plant Tissue CultureTime Allowed : Three Hours][Maximum Marks : 67

Note :- Attempt **five** questions in all by selecting **one** question from each Unit. Section A is compulsory.

SECTION-A

1. Compulsory Question :

- (a) What is Non-disjunction?
- (b) Define Position Effect.
- (c) Define Coefficient of Coincidence.
- (d) What is Recombination Frequency?
- (e) Maternal Inheritance or Cytoplasmic Inheritance? 3×5

UNIT-I

2. (a) Describe the Mendel's Law of segregation with examples showing the segregation in F1 and F2 generation. 6

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(b) Discuss the results obtained by Morgan in his experiments related to sex linked genes in *Drosophila melanogaster*.

7

- 3. (a) What is Non-disjunction and how it helps to prove the chromosomal theory of inheritance? 6
 - (b) Describe the various types of numerical chromosomal aberrations with example. 7

UNIT-II

- 4. (a) Give the reason for obtaining 9: 7 and 13:3 ratios in certain crosses. Explain with example and checkerboard. 6
 - (b) How are genes mapped on a chromosome on basis of recombination and linkage? 7
- 5. (a) How is somatic cell hybridization used for gene linkage studies?
 - (b) Give an account of three hereditary effects and their genetic basis in humans.

UNIT-III

6. (a) What do you understand by gene and genotype frequencies? Derive the law which gives the mathematical relationship between the two.
7

(b) / Give an account of Chemical Mutagens.

7. Give a detailed account of various kinds of mutation induced by chemical and physical mutagens.
13

UNIT-IV

- 8. What is one gene-one enzyme hypothesis ? How are mutations found out in any biochemical pathway ? Explain with example.
- 9. (a) What are the various types of transduction that occur in bacteria?

How are auxotrophs isolated?

(b)

13

5