

Roll No. ....

(05/16-I)

**5185**

**B. Sc. EXAMINATION**

(Second Semester)

**BOTANY**

Second Paper

Genetics

*Time : Three Hours*

*Maximum Marks : 40*

**Note :** Attempt *Five* questions in all. Attempt *four* more questions by selecting *two* questions from each Unit. Q. No. 1 is compulsory.

1. (a) Define Phenotype.
- (b) What are Alleles ?
- (c) Define a linkage group.
- (d) What are dominant genes ?
- (e) Define Translation.
- (f) Expand *r*RNA.

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(g) Give scientific name of Mendel's experimental plant.

(h) Define a Hybrid. 1×8

### Unit I

2. Differentiate between DNA and RNA. 8

3. Write notes on the following :

(a) Genetic code 5

(b) Okazaki fragments. 3

4. A cross between two sandy colour Hogs give  $F_2$  ratio of 15 : 1 sandy and albino hogs. Define and explain the gene interaction. 8

5. What is Linkage ? To which Mendel law it proves wrong ? How linkage between two genes can be ascertained ? Give chromosomal theory of linkage. 8

### Unit II

6. What do you mean by mutations ? Discuss various mutagenic agents. Give the significance of the mutations. 8

7. Write notes on the following :

(a) DNA Damage and repair 4

(b) Polyribosome. 4

8. Explain the process of protein synthesis. 8

9. Write notes on the following :

(a) Plastid inheritance 5

(b) Split genes. 3