

Roll No.

(04/17-1)

5185

B. Sc. EXAMINATION

(Second Semester)

BOTANY

Paper II

Genetics

Time : Three Hours

Maximum Marks : 40

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

(Compulsory Question)

1. (a) What is episome ?
(b) What are Ochre, Amber and Opal ?
(c) Define genome.
(d) Who gave mutation theory ?

- (e) What is Chargaff's rule ?
- (f) Differentiate backcross and test cross.
- (g) What is the function of DNA Ligase ?
- (h) Define lethal genes. 1×8

Unit I

2. Write notes on the following :

- (a) Genotype and Phenotype 2
- (b) Dominant epistasis and Recessive epistasis 4
- (c) Homozygous and Heterozygous. 2

3. (a) Define Linkage. 2+2+4
(b) What are Linkage groups ?
(c) Differentiate complete and incomplete linkage.

4. What is genetic code ? Describe the properties of genetic code. 2+6

5. (a) What is satellite and repetitive DNA ?
(b) Differentiate leading strand and lagging strand.
(c) Structure of DNA by Watson and Crick ?
2+3+3

Unit II

6. (a) Differentiate germinal and somatic mutation. 2
(b) Role of mutation in agriculture. 4
(c) What are jumping genes ? 2
7. Discuss briefly the mechanism of protein synthesis. 8
8. (a) What are inducible and repressible genes ?
(b) What is muton and recon ?
(c) Name three enzymes of lac-operon.
(d) What are van der Waals interactions ?
3+2+2+1
9. (a) Differentiate between nuclear and cytoplasmic inheritance.
(b) Write note on Plasmids. 4+4