2023
B.A./B.Sc.
Third Semester
CORE – 7
BOTANY
Course Code: BOC 3.31
(Genetics)

Total Mark: 70 *Pass Mark: 28*
Time: 3 hours

Answer five *questions, taking* one *from each unit.*

UNIT–I

1. Write notes on the following: 7×2=14
   (a) Epistasis
   (b) Autosomes and sex chromosomes

2. (a) Supported with examples, discuss on recessive and dominant traits. 7
   (b) Discuss on penetrance and expressivity. 7

UNIT–II

3. Discuss the role of kappa particles in *Paramecium*. 14

4. (a) How is nuclear inheritance different from cytoplasmic inheritance? 7
   (b) Discuss mitochondrial inheritance with an example. 7

UNIT–III

5. Elaborate on the cytological basis of crossing over. 14

6. (a) Discuss on any numerical based on gene mapping. 7
   (b) Write a note on recombination frequency. 7

UNIT–IV

7. Discuss in detail the different types of mutation. 14

8. (a) Give a detailed discussion on autopolyploidy. 7

(b) What are transposons? Discuss its role in mutation and evolution. 2+5=7

UNIT–V

9. Elaborate on the factors affecting Hardy-Weinberg's law. 14

10. (a) Write a note on speciation. 7

(b) How does T4(rII) react with K12(λ) and B strains of *E. coli*? 7