# Botany [Honours]

## [CBCS]

## B.Sc. Third Semester End Examination-2023

## (Regular & Supplementary Paper)

### PAPER-C7T

### GENETICS

***Full Marks: 40*** ***Time: 02 Hrs***

*The figures in the right hand margin indicate marks*

*Candidates are required to give their answers in their own words as far as practicable*

*Illustrate the answers wherever necessary*

## Group A

**1. Answer any FIVE questions of the following:** **5x2= 10**

a. What is the genotypic ratio of a dihybrid cross?

b. What is incomplete dominance?

c. What is reciprocal translocatikon?

d. What is test cross?

e. What is conditional lethal allele? Give an example.

f. What is allele frequency?

g. What is trisomy? Give an example.

h. Name two intercalating chemical mutagens. Give an example of transposon.

## Group B

**2. Answer any FOUR questions of the following: 4x5 = 20**

a) Draw a diagram of the rII locus of T4 bacteriophage giving the lenths of both cistrons.

b) Describe the different types of linkage. What are the factors affecting linkage? 3+2

c) What are kappa particles? Explain their role?

d) Describe the CIB method in detection of mutation in Drosophila

e) Distinguish between pleiotropy and epistasis. Discuss multiple allelism with suitable example.

f) Discuss Hardy-Weinberg Law. What is meant by sympatric speciation?

## Group C

**3. Answer any ONE question of the following: 1x10 = 10**

a) Briefly describe the different types of crossing over with suitable diagram. What is recombinant frequency? What are the results of pericentric inversion with single crossing over?

(3+2)+2+3

b) Illustrate chromosomal inversion with suitable diagram. Explain the cis-trans complementation test for functional allelism. What is the advantage of having "split" genes in eukaryotes? 3+5+2

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