

2022

3rd Semester Examination

BOTANY (Honours)

Paper : C 7-T

(Genetics)

[CBCS]

Full Marks : 40

Time : Two Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

1. Answer any *five* questions of the following : $2 \times 5 = 10$

- (a) Explain co-dominance with example.
- (b) How does transposon cause mutation?
- (c) Explain epistasis by citing an example.
- (d) State about two diseases of human caused due to autosomal defects.
- (e) What is genetic drift?
- (f) Mention the characteristic features of polygenic inheritance.
- (g) What is position effect?
- (h) What is auto-allopolyploidy?

P.T.O.

Group - B

2. Answer any **four** questions of the following : $5 \times 4 = 20$

- (a) What do you mean by DNA repair mechanisms? Mention the enzymes responsible for DNA repairing.
- (b) Explain the Chromosome theory of inheritance.
- (c) Illustrate Hardy-Weinberg Law explaining the equation and the factors influencing it.
- (d) Describe cytoplasmic inheritance with suitable example.
- (e) What is crossing over? Explain the molecular basis of crossing over.
- (f) Illustrate multiple allelic inheritance with example.

Group - C

3. Answer any **one** question of the following : $10 \times 1 = 10$

(a) What is point mutation? How does it differ from frame shift mutation? Briefly describe the mechanism of action of two chemical mutagens.

1+2+7

(b) Write short notes on below : $2\frac{1}{2} \times 4 = 10$

- (i) Transversion
- (ii) Cis-Trans complementation test
- (iii) CIB method
- (iv) Euploidy.