



**2020/TDC(CBCS)/ODD/SEM/  
BOTHCC-303T/140**

**TDC (CBCS) Odd Semester Exam., 2020  
held in March, 2021**

**BOTANY**

**( 3rd Semester )**

Course No. : BOTHCC-303T

**( Genetics )**

Full Marks : 50

Pass Marks : 20

Time : 3 hours

*The figures in the margin indicate full marks  
for the questions*

**SECTION—A**

1. Answer any *ten* of the following questions :

2×10=20

- (a) Define lethal alleles.
- (b) rII locus
- (c) What is pedigree analysis?



( 2 )

( 3 )

- (d) Define pleiotropy.
- (e) Write a short note on variegation in Four O'clock plant.
- (f) Write a short note on chloroplast mutation.
- (g) Write a short note on mitochondrial mutations.
- (h) Write a short note on infective heredity.
- (i) What is the relationship between distance among genes and percentage of recombination?
- (j) How is recombination frequency calculated?
- (k) Define sex linkage.
- (l) Define two-factor crosses.
- (m) Write briefly on deletion mutation.
- (n) Write briefly on position effect.
- (o) What is inversion mutation?
- (p) What is translocation mutation?
- (q) What is gene pool?
- (r) Define gene frequency.

- (s) Define genetic variation.
- (t) What are qualitative inheritance and quantitative inheritance?

SECTION—B

Answer any five questions

2. Write in detail about chromosome theory of inheritance with suitable examples. 6
3. Write in detail about principles of inheritance with suitable examples. 6
4. Write an essay on extra-nuclear inheritance. 6
5. Discuss in depth about maternal effect and its use in heredity and evolutionary study. 6
6. Discuss in detail about sex-linked inheritance. 6
7. Write briefly on :  $3 \times 2 = 6$ 
  - (a) Interference
  - (b) Coincidence
8. Describe in detail about physical mutagen with suitable example. 6



(( 4 ))

9. Describe CIB method of mutation detection. 6
10. Describe Hardy-Weinberg law with suitable examples. Also write about the factors effecting gene frequency in Hardy-Weinberg population. 4+2=6
11. Describe in detail about speciation. 6

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