TDC (CBCS) Odd Semester Exam., 2023

BOTANY

(Honours)

(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

Answer *ten* questions, selecting any *two* from each Unit : 2×10=20

UNIT—I

1. Define lethal alleles.

2. What do you mean by rII locus?

3. What is pedigree analysis?

UNIT—II

4. What is chloroplast mutation?

5. Write a brief note on variegation in Four O'clock plant.

6. What is mitochondrial mutation?

UNIT—III

7. What is interference?

8. Define sex linkage.

9. Define two-factor crosses.

UNIT—IV

10. Define position effect.

11. Write a note on euploidy.

12. Define mutation. Give an example of a chemical mutagen.

UNIT—V

13. What is gene pool?

14. What is gene frequency?

15. Define speciation.

SECTION—B

Answer *five* questions, selecting *one* from each Unit : 6×5=30

UNIT—I

16. Write in detail about chromosome theory of inheritance with suitable examples. 6

17. Write in detail about principles of inheritance with suitable examples. 6

UNIT—II

18. Write an essay on extra-nuclear inheritance. 6

19. Write in detail about infective heredity with reference to Kappa particles in *Paramecium*. 6

UNIT—III

20. Discuss in detail about sex-linked inheritance. 6

21. Write briefly on the following : 3+3=6

(a) Coincidence

(b) Gene mapping

UNIT—IV

22. Give an account on chromosomal abberations with examples. 6

23. Write briefly on the following : 3+3=6

(a) Role of transposons in mutation

(b) DNA repair mechanism

UNIT—V

24. Describe Hardy-Weinberg law with suitable examples. Also write about the factors affecting gene frequency in Hardy-Weinberg populations. 4+2=6

25. Write briefly on the following : 3+3=6

(a) Genetic drift

(b) Genetic variation

★ ★ ★