



**2021/TDC/CBCS/ODD/
BOTHCC-303T/140**

**TDC (CBCS) Odd Semester Exam., 2021
held in March, 2022**

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

Answer/Write short notes on/Choose the correct
answer of any *ten* of the following : $2 \times 10 = 20$

1. Autosomes
2. Dominant traits
3. Epistasis



(2)

4. Mitochondrial diseases are received from
 - (a) mother
 - (b) father
 - (c) siblings
 - (d) environment

5. The transmission of genes that occurs outside the nucleus is called
 - (a) extranuclear inheritance
 - (b) cytoplasmic inheritance
 - (c) Both (a) and (b)
 - (d) None of the above

6. Extranuclear inheritance commonly occurs in
 - (a) nucleus
 - (b) cytoplasmic organelles
 - (c) cell membrane
 - (d) guard cells

7. What is genetic map unit (m.u.) or a centimorgan?

(3)

8. What is the Robust method of detection of linkage?
9. What is a gene map?
10. Transposons
11. Euploidy
12. DNA repair
13. Define allele.
14. Genotype
15. Phenotype

SECTION—B

Answer any *five* of the following questions : $6 \times 5 = 30$

16. Describe in detail the reasons for Mendel's success on pea experiment.
17. What is codominance? Give details of perfect codominance seen in human blood groups.
 $2+4=6$
18. Describe in detail the mitochondrial mutation in Yeast.



(4)

19. What is extrachromosomal inheritance?
Write a note on Kappa particles in Paramecium. 2+4=6
20. Write a note on crossing-over and its cytological basis.
21. Write short notes on : 3×2=6
(a) Recombination frequency
(b) Linked genes
22. Describe in detail about chemical mutagen with suitable examples.
23. What are the different types of gene mutations? Write in detail.
24. What are the roles of natural selection and mutation in speciation?
25. Write short notes on : 3×2=6
(a) Genetic drift
(b) Genetic variation
