2 0 2 4

(FYUGP)

(4th Semester)

BOTANY

(Major)

Paper Code : BCC 7

(Genetics)

Full Marks : 75

Pass Marks : 40%

Time : 3 hours

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

1. Explain Mendel's law of independent assortment with suitable examples and add a note on phenomenon of dominance. 15

OR

2. Write notes on the following : 5×3=15

    (a) Autosomes and sex chromosome

    (b) Probability and pedigree analysis

    (c) Epistasis

3. Explain in detail cytoplasmic inheritance in *Mirabilis jalapa.*   15

OR

4. Elaborate maternal effects-shell coiling in snail.   15

5. What is recombination frequency? Explain two-factor and three-factor crosses.   15

OR

6. Write notes on the following :   5×3=15

   (a) Interference

   (b) Coincidence

   (c) Sex linkage

7. Explain gene concept-classical vs molecular concepts of gene.   15

OR

8. (a) Add a note on multiple alleles in ABO blood group.

   (b) Write a note on ionizing and non-ionizing radiation as mutagens. 7½+7½=15

9. Discuss the role of natural selection, mutation and genetic drift.   15

OR

10. Explain with examples (any *two*) :   7½×2=15

    (a)   Genotype frequencies

    (b)   Genetic variation

    (c)   Speciation

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