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(FYUGP)

(4th Semester)

BOTANY

(MAJOR)

Paper : BCC–7

(Genetics)

Full Marks : 75

Pass Marks : 40%

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Write a note on chromosome theory of inheritance. Explain multiple alleles and epistasis with suitable examples. 5+10=15

Or

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

   (a) Penetrance and expressivity

   (b) Principles of inheritance

   (c) Lethal alleles

(Turn Over)

3. What is infective heredity? Explain infective heredity of Kappa particles in *Paramecium.*

$$2+13=15$$

Or

4. Discuss in detail the mitochondrial inheritance in yeast. 15

5. What is crossing over? Discuss the cytological basis of crossing over. $2+13=15$

Or

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

(a) Recombination frequency

(b) Linkage

(c) Interference

7. Give an account on *cis-trans* complementation test for functional allelism. 15

Or

8. Write a detailed note on chromosomal aberrations. 15

(Continued)

9. Elaborate on genetic variation and speciation. 15

Or

10. Write notes on the following : 7½×2=15

    (a) Allele frequencies and genotype frequencies

    (b) Hardy-Weinberg law

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