

M.Sc. (Botany) (CBCS Pattern) Semester-I  
**PSCBOTT04 Paper-IV - Cytology & Genetics**

P. Pages : 1

Time : Three Hours



**GUG/S/25/11153**

Max. Marks : 80

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- Notes : 1. All questions are compulsory and carry equal marks.  
2. Draw well labelled diagram wherever necessary.

- 1.** Write in detail about sex determination and dosage compensation in *Drosophila*. **16**
- OR**
- Write notes on:
- a) Suppressors and Pleiotropic genes. **8**
- b) Chromosome theory of inheritance. **8**
- 2.** Describe molecular organization of centromere and telomere. **16**
- OR**
- Write notes on:
- a) Karyotype analysis and evolution. **8**
- b) Polytene and Lampbrush chromosome. **8**
- 3.** Write in detail on transmission of trisomics and monosomics and their use in chromosome mapping. **16**
- OR**
- Write notes on:
- a) Effects of Aneuploidy in plants. **8**
- b) Origin and breeding behaviour of duplications. **8**
- 4.** Define Epigenetics? Write in detail about the paramutations in maize. **16**
- OR**
- Write notes on:
- a) Spontaneous and induced mutation **8**
- b) Role of Histone & DNA Methylation. **8**
- 5.** Write short notes on:
- a) Multiple alleles. **4**
- b) B-chromosomes. **4**
- c) Translocation tester sets. **4**
- d) Site directed mutagenesis. **4**

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