

M.Sc. (Botany) (NEP Pattern) - Semester-III  
**03MSCBOT02 - Paper-II : Cytology & Genetics**

P. Pages : 1

Time : Three Hours



**GUG/W/24/15953**

Max. Marks : 80

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

1. Discuss sex determination and dosage compensation in plants. 16

**OR**

Write notes on:

- a) Mendel's laws of inheritance. 8  
b) Penetrance and expressivity. 8

2. Explain in brief Polytene and Lamp brush chromosomes. 16

**OR**

Write notes on:

- a) Packaging of DNA. 8  
b) Chromosome Banding. 8

3. Discuss in detail effects of aneuploidy on plants. 16

**OR**

Write notes on:

- a) Inversion and Translocation. 8  
b) Robertsonian Translocation 8

4. Define Epigenetics. Explain role of histones and DNA methylation in brief. 16

**OR**

Write notes on:

- a) Physical and chemical mutagens. 8  
b) Transposable genetic elements. 8

5. Write short note on.

- a) Multiple alleles. 4  
b) Euchromatin 4  
c) Duplication 4  
d) Callipyge sheep 4

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