

B.Sc. CBCS Pattern Semester-V  
**012B - Botany Paper-II (Genetics and Plant Breeding-II)**

P. Pages : 2

Time : Three Hours



**GUG/W/23/13100**

Max. Marks : 50

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

**1.** Write note on:

- a) Genetic code. 5  
b) Describe Hardy-Weinberg Law. 5

**OR**

Write short notes on-

- c) tRNA. 2½  
d) snRNA. 2½  
e) Wobble hypothesis. 2½  
f) Pedigree analysis – Symbols. 2½

**2.** Write note on:

- a) Explain Structure of Chromosome. 5  
b) Describe Polytene Chromosome. 5

**OR**

Write short notes on-

- c) Morphology of chromosome. 2½  
d) Types of chromosomes on the basis of centromere. 2½  
e) B-Chromosome. 2½  
f) G-banding. 2½

**3.** Write note on:

- a) Genetic basis of inbreeding depression. 5  
b) In situ-germplasm conservation. 5

**OR**

Write short notes on-

- c) Heterosis. 2½
- d) Polygenic inheritance – Wheat Kernel colour. 2½
- e) Autosomal Inheritance. 2½
- f) DNA bank. 2½

4. Write note on:

- a) Procedure of Mutation breeding. 5
- b) Vector mediated gene transfer. 5

**OR**

Write short notes on-

- c) Advantages of Polyploidy. 2½
- d) Application of Mutation Breeding. 2½
- e) Limitation of distant Hybridization. 2½
- f) Flavr savr Tomatoes. 2½

5. Write **any ten** question in one or two lines only (Diagrams are not necessary). 10

- a) Gene.
- b) Codon.
- c) Gene pool.
- d) Metacentric chromosome.
- e) Ideogram.
- f) Lampbrush.
- g) Heterosis.
- h) Monogenic inheritance.
- i) Seed Bank.
- j) Gamma garden.
- k) Herbicide resistance.
- l) Golden rice.

\*\*\*\*\*