

B.Sc. (CBCS Pattern) Sem-V  
**012B - DSE-I - Botany Paper-II : Genetics and Plant Breeding-II**

P. Pages : 2

Time : Three Hours



**GUG/W/22/13100**

Max. Marks : 50

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

**1.** Write on:

- a) Modern Concept of gene. 5
- b) Salient features of Genetic Code. 5

**OR**

Write short notes on:

- c) Symbols and signs in pedigree analysis. 2½
- d) Wobble hypothesis. 2½
- e) Semiconservative DNA replication. 2½
- f) mRNA. 2½

**2.** Write on:

- a) Structure of chromosome. 5
- b) Chromosome banding. 5

**OR**

- c) Karyotype. 2½
- d) Polytene chromosome. 2½
- e) Lampbrush chromosome. 2½
- f) Centromere Position. 2½

**3.** Write on:

- a) Heterosis and its application. 5
- b) Monogenic inheritance. 5

**OR**

- c) Seed banks. 2½
- d) DNA banks. 2½
- e) Polygenic inheritance. 2½
- f) Inbreeding depression 2½

4. Write on:

- a) Mutational breeding and its types. 5
- b) Polyploidy breeding. 5

**OR**

- c) Importance of distant hybridization. 2½
- d) Limitations of distant hybridization 2½
- e) FlavrSavr 2½
- f) Golden rice 2½

5. Write **any ten** questions in one or two lines only (Diagrams or Not necessary) 10

- a) Operon
- b) Si RNA
- c) Gene pool
- d) Histone
- e) Telocentric chromosome.
- f) B-Chromosome
- g) Overdominance.
- h) Germplasm.
- i) In-situ conservation.
- j) Allopolyploids
- k) Bt-Cotton
- l) Agrobacterium.

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