

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

**B.Sc. Honours (Agriculture) (Sem-3)**  
**FUNDAMENTALS OF PLANT BREEDING**

Subject Code : BSAG-302-19

M.Code : 78657

Date of Examination : 26-06-2023

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

**1. Write briefly :**

- a) Megasporogenesis
- b) Hardy Weinberg law
- c) GMOs
- d) Patent
- e) Clonal selection
- f) DNA markers
- g) Composites
- h) Physical mutagen
- i) Multiline
- j) Marker Assisted Selection (MAS).

## SECTION-B

2. What are pure lines? Describe Johannsen's pure line theory and its genetic basis.
3. What is polyploidy breeding? Describe the methods of production of autopolyploids and their importance in crop improvement.
4. What is PPVFRA and PBRs, explain plant breeders' and farmers' rights.
5. What are the various population improvement programmes in maize cultivar development. Compare ear to row and modified ear to row methods.
6. What is distant/wide hybridization? Explain in detail, the various barriers being faced and their solutions in wide hybridization.

## SECTION-C

7. What is an inbred line? Discuss in detail, the methods of development of superior inbred lines to develop high yielding heterotic hybrids in pearl millet.
8. Discuss in detail, the pedigree method of handling the segregating generations along with its merits. Also mention any one of its modifications in detail.
9.
  - a) What do you understand from participatory plant breeding? What are the various steps to achieve it and its role in the crop improvement programme?
  - b) What are SSR markers, how these can be used in MAS for the development of an elite cultivar in rice?

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**