**MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE**
**SEMESTER END THEORY EXAMINATION**

**B.Sc.(Hons.) Agriculture**

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|---|---|---|---|---|---|
| Semester | : III | Term | : First | Academic Year | : 2024-25 |
| Course No. | : GPB 232 | Title | : Fundamentals of Plant Breeding | | |
| Credits | : 2 (1+1) | | | | |
| Day & Date | : Friday, 18.10.2024 | Time | : 09:00 to 11:00 hrs. | Total Marks | : 40 |

**Note :**
1. Solve **ANY EIGHT** questions from **SECTION 'A'.**
2. All questions from **SECTION 'B'** are compulsory.
3. All questions carry equal marks.
4. Draw neat diagram wherever necessary.

## SECTION 'A'

Q.1 Define Plant Breeding. Write in detail the objectives of Plant Breeding.

Q.2 What is Male sterility? Give its types and explain in detail the cytoplasmic genetic male sterility.

Q.3 What is Pedigree? Explain in detail pedigree breeding method and its features.

Q.4 What is Wide hybridization? Explain types of wide hybridization with suitable examples and give applications of wide hybridization in crop improvement.

Q.5 Define Mutation breeding and explain types of mutagens with examples.

Q.6 Define Pollination. Write in brief the mechanisms promoting self-pollination.

Q.7 Differentiate between Mass selection and Pure line selection.

Q.8 What is Backcross? What are the requirements of a backcross?

Q.9 Write short notes on:
a) Multiline b) Apomixis

Q.10 Define Heterosis. Enlist three main theories of heterosis. Explain Dominance hypothesis in detail.

## SECTION 'B'

Q.11 Do as directed:

1) Enlist any two breeding methods for cross pollinated crops.
2) Give any two characteristics of pure line.
3) Differentiate between Synthetics and Composites. (Any Two)
4) Enlist any two types of Recurrent selection.

Q.12 Fill in the blanks.

1) _____ developed Mexican semidwarf wheat varieties.
2) Chromosome number of rice is _____.
3) _____ is a sudden heritable change in a characteristic of an organism.
4) Family of *Gossypium* species is _____.

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