

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END THEORY EXAMINATION

B.Sc.(Hons.) Agriculture

Semester	: III (New)	Term	: First	Academic Year	: 2022-23
Course No.	: GPB 232	Title	: Fundamentals of Plant Breeding		
Credits	: 2 (1+1)				
Day & Date	: Thursday, 09.02.2023	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 heterosis. Enlist different theories of heterosis. Explain dominance hypothesis of heterosis with objections.
- Q.2 Define recurrent selection. Enlist its types. Explain in brief the procedure for reciprocal recurrent selection.
- Q.3 Define Plant Breeding. Explain in brief general objectives of plant breeding.
- Q.4 Explain in brief clonal selection. Write merits and demerits of clonal selection.
- Q.5 Enlist different breeding methods in self pollinated crops. Discuss in brief advantages and limitations of pure line selection.
- Q.6 Define polyploidy. Discuss in brief applications of autopolyploidy in crop improvement with their limitations.
- Q.7 How to develop a multiline variety? State the characteristics of a good multiline. Give its achievements in plant breeding.
- Q.8 What is hybridization? Explain in detail steps involved in hybridization.
- Q.9 Write short notes on:
- a) Plant introduction
 - b) Mechanisms promoting cross pollination
- Q.10 Define molecular marker. Enlist different types of molecular markers. Describe any one in detail.

SECTION 'B'

- Q.11 Define the following terms:
- 1) Acclimatization
 - 2) Recurrent parent
 - 3) Heritability
 - 4) Inbreeding depression
- Q.12 Fill in the blanks:
- 1) CIMMYT stands for _____.
 - 2) _____ is a source of dwarfing gene in rice.
 - 3) First artificial hybrid between Carnation and Sweet William was made by _____.
 - 4) Flower opens only after pollination, is known as _____.

