

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

**B.Sc. (Agri.)**

Semester	: III (New)	Term	: I	Academic Year	: 2014-15
Course No.	: BOT 233	Title	: Principles of Plant Breeding		
Credits	: 3(2+1)				
Day & Date	: Friday, 10.10.2014	Time	: 9.00 to 12.00	Total Marks	: 80

- 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 diagrams wherever necessary.

**SECTION "A"**

- Q.1 Define plant Breeding. Explain objectives of plant breeding.
- Q.2 Define male sterility. Enlist different types of male sterility and describe cytoplasmic genetic male sterility.
- Q.3 a) Enlist breeding methods used in self-pollinated crops.  
b) Describe mode of pollination in cross pollinated crops.
- Q.4 Define polyploidy. Give the classification of polyploidy. Describe the role of polyploidy in Agriculture.
- Q.5 Distinguish between Mass selection and Pure line selection.
- Q.6 Define recurrent selection. Give its types and explain simple recurrent selection.
- Q.7 What is hybridization? Describe different steps involved in hybridization.
- Q.8 Write short notes on (Any Two).  
1) Effect of inbreeding depression    2) Asexual reproduction    3) Microgametogenesis
- Q.9 Define mutation. Explain types of mutagens with example and give application of mutation breeding in crop improvement.
- Q.10 Define heterosis. Enlist theories and explain dominance hypothesis of heterosis.

**SECTION "B"**

- Q.11 Define the following terms.  
1) Plant introduction    2) Parthenogenesis    3) Acclimatization    4) Back cross  
5) Monoecy    6) Self-incompatibility    7) Hardy-Weinberg law    8) Random drift
- Q.12 a) Give contribution of the following Scientists.  
1) W.L. Johannsen    2) Thomas Fairchild  
3) Goulden C.H.    4) K. Ramaiah
- b) Fill in the blanks.  
1) NBPGRI stands for \_\_\_\_\_.
- 2) Gametophytic incompatibility was first described by \_\_\_\_\_ in 1925 in *Nicotiana glauca*.
- 3) \_\_\_\_\_ method is used to transfer resistance in high yielding varieties.
- 4) Polycross test is the most commonly used test in \_\_\_\_\_ crops.

