

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Hons.) Horticulture

Semester : II (New)	Term : II	Academic Year : 2017-18
Course No. : H/BOT 123	Title : Principles of Plant Breeding	
Credits : 3 (2+1)		
Day & Date : Wednesday, 25.04.2018	Time : 09.00 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. Give its aims and explain objectives of plant breeding.
- Q.2 Define pollination. Explain various mechanisms that promote self and cross pollination.
- Q.3 Define self incompatibility. Give different types of self incompatibility along with the main features of self incompatibility.
- Q.4 Enlist different breeding methods of cross pollinated plants. Give the procedure for development of synthetic variety.
- Q.5 What is hybridization? Explain various steps involved in hybridization.
- Q.6 What is heterosis? Enlist the different theories of heterosis and explain dominance hypothesis of heterosis.
- Q.7 Define mutation breeding. Give the advantages and limitations of mutation breeding.
- Q.8 Define male sterility. Enlist the types of male sterility found in crop plants. Explain genetic male sterility.
- Q.9 Write short notes (Any Two).
- a) Inbreeding depression
 - b) Heritability
 - c) Complex cross
- Q.10 Differentiate between (Any Two).
- a) Pure line selection and mass selection
 - b) Qualitative traits and quantitative traits
 - c) Asexual reproduction and sexual reproduction

SECTION "B"

- Q.11 a) Give the contribution of following scientist in one sentence.
- 1) Thomas Fairchild
 - 2) Stadler L.J.
 - 3) Johannsen W.L.
 - 4) Shull G.H.
- b) Fill in the blanks.
- 1) _____ is the crossing between genetically dissimilar plants.
 - 2) Reselection generation after generation with intermating of selected plants is called _____.
 - 3) _____ is the quickest method of plant breeding.
 - 4) The gene which restores male fertility in the male sterile line is known as _____.
- Q.12 Define the following terms.
- 1) Germplasm
 - 2) Mutation
 - 3) Clone
 - 4) Simple cross
 - 5) Allogamy
 - 6) Domestication
 - 7) Pedigree
 - 8) Apomixis

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