

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Hons.) Agriculture

Semester : III (New)	Term : I	Academic Year : 2018-19
Course No. : GPB 232	Title : Fundamentals of Plant Breeding	
Credits : 2 (1+1)		
Day & Date : Wednesday, 14.11.2018	Time : 9.00 to 11.00	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 diagrams wherever necessary.

SECTION "A"

- Q.1 Define plant breeding and explain in brief the general objectives of plant breeding.
- Q.2 Define heterosis, enlist genetic basis/theories of heterosis and explain in detail over dominance hypothesis.
- Q.3 What is male sterility? Give its types and explain in detail Cytoplasmic Genetic Male Sterility.
- Q.4 Describe in detail the procedure of mutation breeding and enlist its application in crop improvement.
- Q.5 Write short notes (Any Two).
- a) Pedigree breeding method and its features
 - b) Hardy and Weinberg law
 - c) Plant Introduction
- Q.6 Differentiate between (Any Two).
- a) Broad sense heritability and narrow sense heritability.
 - b) Synthetics and composites.
 - c) Genetic assortative and Genetic disassortative.
- Q.7 What is wide hybridization? Give its types and explain in brief barriers to wide hybridization.
- Q.8
- a) What is clone? Discuss the various characteristics of clones.
 - b) What is aneuploidy? Give its application in crop improvement.
- Q.9 Answer the following questions.
- a) Give classification of self-incompatibility on the basis of flower morphology.
 - b) Give the characteristics of pure line.
 - c) Enlist the various types of recurrent selection.
 - d) Enlist the breeding methods for cross pollinated crops.
- Q.10 Define backcross. Explain in brief the merits and demerits of backcrossing.

(P.T.O.)

Q.11 Give contribution of the following scientists.

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| 1) Patel C.T. | 2) Shull G.H. (1914) |
| 3) Borlaug N.E. | 4) Rimpu |

Q.12 Define the following terms.

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| 1) Acclimatization | 2) Inbreeding depression |
| 3) Variation | 4) Test cross |

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