

MAHARASHITRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END THEORY EXAMINATION

B.Sc.(Hons.) Horticulture

Semester	: II (New)	Term	: Second	Academic Year	: 2022-23
Course No.	: II/BOT 123	Title	: Principles of Plant Breeding		
Credits	: 3 (2+1)				
Day & Date	: Monday, 31.07.2023	Time	: 9:00 to 12:00 hrs.	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 diagram wherever necessary.

SECTION 'A'

- Q.1 Define plant breeding. Describe in brief its objectives and achievements.
- Q.2 Define self incompatibility. Enlist its types and describe different ways to overcome it.
- Q.3 Write short notes on (Any Two):
- a) Inbreeding depression
 - b) Autopolyploidy
 - c) Components of polygenic variation
- Q.4
- a) Define mutation and give its characteristics.
 - b) Describe pedigree method of breeding.
- Q.5 Define apomixis. Describe its types and applications.
- Q.6 Define male sterility. Enlist its types and describe cytoplasmic genetic male sterility.
- Q.7 Define heterosis. Describe its types and explain genetic bases of heterosis.
- Q.8 What is hybridization? Describe the steps involved in it.
- Q.9 Describe modes of pollination in plants and give different mechanisms to ensure cross pollination.
- Q.10 Define sporogenesis. Describe the process of microsporogenesis and microgametogenesis.

SECTION 'B'

- Q.11 a) Define the following terms:
- 1) Interspecific hybridization
 - 2) Mutagen
 - 3) Dichogamy
 - 4) Back cross
- b) Give contributions of the following Scientists:
- 1) C.B. Davenport
 - 2) N.I. Vavilov
 - 3) N.E. Borlaug
 - 4) R.J. Camerarius

(P.T.O.)

Q.12 Fill in the blanks:

- 1) An individual with one extra chromosome than the normal somatic chromosome number, is known as _____.
- 2) The parent which is repeatedly used in back cross method, is called as _____.
- 3) The process of bringing wild species under human management, is called as _____.
- 4) Cross which involves more than two parents, is called as _____ cross.
- 5) Heterosis is confined to _____ generation only.
- 6) Removal of male reproductive organ from bisexual flower, is called _____.
- 7) The most effective method for the transfer of disease resistant gene in well adapted variety is _____ breeding.
- 8) _____ pollinated crops show high inbreeding depression.

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