

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Agri.)

Semester : IV (Old)	Term : II	Academic Year : 2017-18
Course No. : BOT 245	Title : Breeding of Field and Horticultural Crops	
Credits : 3 (2+1)		
Day & Date : Thursday, 03.05.2018	Time : 14.00 to 17.00	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 What do you mean by combining ability? State its types and explain the role of combining ability in crop breeding.
- Q.2 Define biotic stress. Explain the types of genetic resistance to disease and various sources of disease resistance.
- Q.3 State the Hardy-Weinberg law. Explain the factors disturbing/affecting the equilibrium in Mendelian population.
- Q.4 Complete the following table:

Sr. No.	Crop	Origin	Botanical Name	Family	Chromosome No	Wild relatives
1.	Wheat					
2.	Chickpea					
3.	Groundnut					
4.	Brinjal					

- Q.5 Define plant genetic resources. Enlist various types of germplasm and explain different activities related to germplasm conservation.
- Q.6 Explain major steps involved in ideotype breeding. Give the main features of Rice ideotype.
- Q.7 What are Intellectual Property Rights? Enlist benefits of IPR and explain in detail plant breeders rights.
- Q.8 Write breeding objectives, constraints encountered in hybridization and breeding achievements in mango.
- Q.9 Define mutation. Explain causes and characteristics of mutation. Give the types of mutation with examples.
- Q.10 Differentiate between (Any Two).
- a) Drought avoidance and drought tolerance
 - b) Synthetic and composite varieties in maize
 - c) Additive variance and dominance variance

(P.T.O.)

SECTION "B"

Q.11 Fill in the blanks.

- 1) Proline and Betaine accumulation appears to be indicator of _____.
- 2) In _____ a large number of plants of similar phenotype are selected and their seeds are mixed together to constitute the new variety.
- 3) The full form of ICARDA is _____.
- 4) The botanical name of flax is _____.
- 5) The full form of NRCG located at Manjari _____.
- 6) AICMIP was the first All India coordinated project initiated in 1957 under the guidance and assistance of _____ foundation, USA.
- 7) _____ method allows equal survival of all segregants.
- 8) _____ research Institute formerly known as MACS, Pune.

Q.12 a) Define the following terms.

- 1) Allopolyploidy
- 2) Multiline varieties
- 3) Inbred
- 4) Isogenic lines

b) Give the contribution of following scientists:

- 1) Karpenchenko
- 2) Dr. C.A.Barber and T.S.Venkatraman
- 3) Thomas Fairchild
- 4) Hull, F.H. (1945)

