MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Agri.)

Semester	: IV (New)	**Term**	: II	**Academic Year**	: 2012-13
Course No.	: BOT 245	**Title**	: Breeding of Field and Horticultural Crops		
Credits	: 3 (2+1)				
Day & Date	: Friday, 26.04.2013	**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 a) Define ideotype. (2)

b) State the steps involved in the ideotype development. (3)

c) Enlist the characteristics of an ideal Ideotype. (3)

Q.2 Describe in brief the various approaches for breeding varieties resistant to biotic stresses and discuss their merits and limitations. (8)

Q.3 Give the breeding methods used, breeding objectives along with names of released varieties in following crops. (8)

1) Bajra 2) Rice 3) Maize 4) Chilli

Q.4 Define genetic variance. State the different components of genetic variance and discuss the additive genetic variance. (8)

Q.5 Discuss on breeding of mango on following aspects. (8)

1) Breeding methods 2) Breeding objectives

3) Cultivated species 4) Released varieties

Q.6 Complete the following table. (8)

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

Q.7 a) Describe the procedure of back cross to transfer a dominant gene. (6)

b) State the applications of a back-cross programme. (2)

Q.8 What do you mean by combining ability? Explain the role of combining ability in crop breeding. (8)

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Q.9 a) What is recurrent selection? (2)

b) List the various types of recurrent selection schemes. (2)

c) Describe the simple Recurrent selection. (4)

Q.10 Discuss the breeding for drought resistance under the following points. (8)

1) Genetics of drought resistance 2) Sources of drought resistance

3) Creation of the drought environment

SECTION "B"

Q.11 Define the following terms. (8)

1) Distant hybridization
2) Polyploidy
3) Mutation
4) Gene Pool
5) Genetic Erosion
6) Clone
7) Stability
8) Migration

Q.12 a) Expand the following abbreviations. (4)

1) NRC
2) IPR
3) BARC
4) GATT

b) Fill in the blanks. (4)

1) Origin of soybean is _____.

2) The science which deals with the application of statistical concepts and procedures to the study of biological problems is known as _____.

3) A method of breeding in which individual plants are selected in F_2 and the subsequent generations and record is maintained is known as _____.

4) When introduced variety is released for commercial cultivation without any alteration in its genotype is known as _____.

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