MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Agri.)

Semester	: **III (New)**	**Term**	: **I**	**Academic Year**	: **2017-18**
Course No.	: BOT 233	**Title**	: **Principles of Plant Breeding**		
Credits	: 3(2+1)				
Day & Date	: Wednesday, 15.11.2017	**Time**	: 9.00 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 What is Heterosis? Enlist the theories and explain dominance hypothesis of heterosis with objections.

Q.2 Define male sterility. Enlist the different types of male sterility found in crop plants. Explain Genetic male sterility along with its merits and demerits.

Q.3 Define plant breeding. Give its aim and explain objectives of plant breeding.

Q.4 Define mutation. Explain types of mutagens with example and give applications of mutation breeding in crop improvement.

Q.5 Define pollination. Give its types and explain various mechanisms that promote cross pollination.

Q.6 Define distant hybridization. Enlist its types. Describe applications of distant hybridization in crop improvement with suitable examples.

Q.7 Define recurrent selection. Explain briefly procedure of reciprocal recurrent selection and the merits and demerits of recurrent selection.

Q.8 Enlist different breeding methods of self pollinated crops. Differentiate between pure line selection and mass selection.

Q.9 What is synthetic variety? Give the procedure of development of synthetic variety and its advantages.

Q.10 Write short notes (Any Two).

a) Clonal selection

b) Evolutionary history of hexaploid wheat

c) Parthenogenesis

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SECTION "B"

Q.11 a) Give contribution of the following scientists.

1) Dr. C.T. Patel
2) Thomas Fairchild
3) Jensen N.F.
4) N.G.P.Rao

b) Fill in the blanks.

1) _____refers to the development of embryo from synergids or antipodal cells without fertilization.
2) NBPGR stands for _____.
3) Mixture of several similar pure lines having different genes for disease resistance is called _____.
4) The process of bringing a wild species under human management is known as_____.

Q.12 Define the following terms.

1) Dioecious
2) Hybrid vigour
3) Introduction
4) Hermaphrodite
5) Floral biology
6) Inbreeding depression
7) Quarantine
8) Three way cross

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