

**MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION**

B.Sc. (Hons.) Horticulture

Semester : III (New)	Term : I	Academic Year : 2018-19
Course No. : H/BIOT 231	Title : Elementary Plant Biotechnology	
Credits : 2 (1+1)		
Day & Date : Saturday, 17.11.2018	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 Biotechnology. Explain the scope and importance of biotechnology.
- Q.2 Define micropropagation. Describe the stages of micropropagation.
- Q.3 Define protoplast. Describe in brief methods of protoplast fusion.
- Q.4 What is synthetic seed? Give in detail the procedure of somatic embryogenesis.
- Q.5 Explain in detail the procedure of anther culture.
- Q.6 Enlist different methods of gene transfer. Explain *agrobacterium* mediated gene transfer method.
- Q.7 Define somaclonal variation. Describe in brief its application, advantages and limitations.
- Q.8 Enlist molecular markers used in plant breeding. Give features of Random amplified polymorphic DNA-RAPD markers.
- Q.9 Write short notes (Any Two).
 - a) Suspension culture
 - b) Cellular totipotency
 - c) Composition of nutrient media
- Q.10 Define nanotechnology. Give its applications in agriculture.

SECTION "B"

- Q.11 Define the following terms.
 - 1) Explant
 - 2) Callus
 - 3) Plasmid
 - 4) Cybrid
- Q.12 Give the contributions of the following scientists.
 - 1) Maheshwari and Guha
 - 2) G. Haberlandt
 - 3) Laibach
 - 4) Skoog and Miller

