

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

**B.Sc. (Hons.) Horticulture**

<b>Semester</b> : III (New)	<b>Term</b> : I	<b>Academic Year</b> : <del>2019-20</del>
<b>Course No.</b> : H/BIOT 231	<b>Title</b> : Elementary Plant Biotechnology	
<b>Credits</b> : 2 (1+1)		
<b>Day &amp; Date</b> : Monday, 11.11.2019	<b>Time</b> : 09.00 to 11.00	<b>Total Marks</b> : 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 embryo culture. Enlist the types of embryo culture and explain its applications.
- Q.2 Enlist different blotting techniques. Explain "Southern blotting".
- Q.3 Define nutritional medium. Explain the components of tissue culture medium.
- Q.4 What is meant by micropropagation? Explain the different stages of micropropagation.
- Q.5 Define genetic engineering. Enlist different methods of gene transfer.
- Q.6 What is artificial seed? Enlist the different steps of production of artificial seed and give the advantages of artificial seed.
- Q.7 What is somaclonal variation? What are causes of somaclonal variation?
- Q.8 Define molecular marker. Enlist the types of markers. Explain in brief any one.
- Q.9 What do you mean by marker assisted selection? Enlist the applications and advantages of marker assisted selection.
- Q.10 Define anther culture. Explain the factors affecting anther culture.

**SECTION "B"**

- Q.11 Define the following terms.

1) Vector

2) Callus

3) Totipotency

4) Somatic Hybrid

- Q.12 Give the contributions of following scientists.

1) Kary Mullis

2) Murashige and Skoog

3) Smith

4) Haberlandt

