

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END THEORY EXAMINATION
B.Sc.(Hons.) A.B.M.

Semester	: V (New)	Term	: First	Academic Year	: 2023-24		
Course No.	: BIOTECH 351	Title	: Introduction to Plant Biotechnology				
Credits	: 2 (2+0)	Time	: 14:00 to 17:00 hrs.			Total Marks	: 80
Day & Date	: Wednesday, 6.12.2023.						

- 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 diagram wherever necessary.

SECTION 'A'

- Q.1 Define Biotechnology. Write down the scope and application of plant biotechnology.
- Q.2 What is Micropropagation? Explain in detail about different stages of micropropagation.
- Q.3 Enlist different cell organelles with their functions and draw neat labelled diagram of plant cell.
- Q.4 What is Plant tissue culture? Write down its advantages and disadvantages.
- Q.5 Enlist different methods of gene transfer. Explain agrobacterium-mediated gene transfer method.
- Q.6 Define Gene cloning. Explain different steps involved in gene cloning.
- Q.7 What do you mean by Molecular marker? Enlist different types of molecular marker and explain RFLP marker in detail.
- Q.8 Enlist causes of somaclonal variation. Give its advantages and disadvantages.
- Q.9 Enlist the steps involved in synthetic seed production. Write down application of synthetic seed production.
- Q.10 Write short notes on (Any Two):
- a) Vectors and its types
 - b) Transgenics in crop improvement
 - c) Applications of genetic engineering in crop improvement

SECTION 'B'

Q.11 Define the following terms:

- | | |
|---------------------|--------------------------|
| 1) Transgene | 2) Protoplast |
| 3) Cybrid | 4) Somatic hybridization |
| 5) Organogenesis | 6) Embryo culture |
| 7) Cryopreservation | 8) Explant |

(P.T.O.)

Q.12 Fill in the blanks:

- 1) _____ is essential for protein synthesis.
- 2) Murashige and Skoog discovered _____.
- 3) The development of shoot from explants is called as _____.
- 4) Double helix structure of DNA was discovered by _____.
- 5) _____ culture is used for production of haploid plants from pollen grains.
- 6) _____ enzyme is used to join the recombinant DNA fragment.
- 7) _____ coined the term 'Biotechnology'.
- 8) The full form of SSR is _____.

