

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

Semester : V (New)	Term : First	Academic Year : 2022-23
Course No. : BIOTECH 351	Title : Introduction to Plant Biotechnology	
Credits : 2(2+0)		
Day & Date : Friday, 03.02.2023	Time : 14:00 to 17:00 hrs.	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 diagram wherever necessary.

SECTION 'A'

- Q.1 Explain in detail the double helical structure of DNA.
- Q.2 Define genetic engineering. Write about steps involved in gene cloning.
- Q.3 Enlist different methods of gene transfer and explain in detail *Agrobacterium*-mediated gene transfer.
- Q.4 Write short notes on (Any Two):
a) Application of genetic engineering in crop improvement
b) Transgenics in crop improvement
c) Cryopreservation
- Q.5 Enlist different types of molecular marker and explain any one in detail.
- Q.6 Define plant tissue's culture. Write its importance in crop improvement.
- Q.7 Define micropropagation. Write down the procedure for micropropagation in detail.
- Q.8 Define synthetic seed and write its significance in crop development.
- Q.9 Define somaclonal variation. Give the advantages and disadvantages of somaclonal variation.
- Q.10 What is MAS? Write the importance of MAS in crop improvement.

SECTION 'B'

- Q.11 Define the following terms:
1) Biotechnology 2) Cybrid 3) Transgenic plant 4) Organogenesis
5) Protoplast 6) Callus 7) Cell 8) Vector
- Q.12 Do as directed:
1) Give the contribution of Murashige and Skoog.
2) Give the contribution of G. Haberlandt.
3) Give the contribution of Guha and Maheshwari.
4) Auxin is used for the development of _____.
5) _____ culture is used to develop virus free plants.
6) The term 'Biotechnology' was given by _____.
7) The gene which gets transferred from one organism to other is known as _____.
8) _____ enzymes are used to cut DNA at specific site.

