

This question paper contains 2 printed pages]

**NB—26—2023**

**FACULTY OF SCIENCE AND TECHNOLOGY**

**B.Sc. (Second Year) (Fourth Semester) EXAMINATION**

**NOVEMBER/DECEMBER, 2023**

**(New Pattern)**

**BIOTECHNOLOGY**

**(Plant Tissue Culture)**

**(Thursday, 7-12-2023)**

**Time : 2.00 p.m. to 5.00 p.m.**

*Time—Three Hours*

*Maximum Marks—75*

*N.B. :— (i) Attempt all questions.*

*(ii) Figures to the right indicate full marks.*

1. Define plant tissue culture. Explain in detail various media components and their role in plant tissue culture. 15

*Or*

- (a) Explain various sterilization techniques used in plant tissue culture laboratory. 8
- (b) Explain the concept of Totipotency. 7

P.T.O.

2. Describe in detail steps involved in Micropropagation. 15

*Or*

(a) Describe in detail various types of cultures. 8

(b) Explain in detail the technique of Pollen culture. 7

3. Explain in detail technique of Somatic hybridization and add a note on its applications. 15

*Or*

(a) Explain the technique of Somaclonal variation. 8

(b) Explain the technique of Embryo culture. 7

4. Explain the concept of Germplasm conservation. Explain in detail Cryopreservation. 15

*Or*

(a) Explain production of Plant secondary metabolites by Suspension culture. 8

(b) Explain the technique of Endosperm culture. 7

5. Write short notes on any *three* of the following : 15

(a) De-Differentiation

(b) Cybrids

(c) Synthetic Seed

(d) Metabolic Engineering.