

Q.P. Code : 26613

[Time: 2 $\frac{1}{2}$ Hours]

[Marks:60]

Please check whether you have got the right question paper.

- N.B:
1. All questions are compulsory.
 2. Figures to the right indicate full marks.
 3. Draw neat labelled diagrams wherever necessary.

- Q. 1** What is organogenesis? Explain its significance in micropropagation. **(12)**
OR
- Q. 1** What is somaclonal variation? Explain how it is used in cell culture. **(12)**
- Q. 2** Describe various problems in plant tissue culture with reference to phenolics and recalcitrants. **(12)**
OR
- Q. 2** Describe invitro storage of germplasm. **(12)**
- Q. 3** Explain biotransformation of Capsicum cell cultures for production of Vanillin. **(12)**
OR
- Q. 3** Describe briefly Agrobacterium mediated transformed root cultures. **(12)**
- Q. 4** Describe the important factors for designing a bio-reactor. **(12)**
OR
- Q. 4** In the quest for commercial production, discuss the production of shikonin using cell culture. **(12)**
- Q. 5** Write short notes on **any three** of the following: **(12)**
- a) Permeabilization
 - b) Cryopreservation
 - c) Air lift reactor
 - d) Continuous culture
 - e) Freely juspended plant cells
 - f) Biotic eliitors
