

Exam. Code : 210004

Subject Code : 4855

M.Sc. Botany 4th Semester (Batch 2020-22)

PLANT TISSUE CULTURE AND BIOTECHNOLOGY

Paper—BOTC-623

Time Allowed—3 Hours] [Maximum Marks—50

Note :—Attempt FIVE questions in all, selecting at least ONE question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. Write notes on any two of the following (5 marks each) :
 - (a) Differentiation in cell and tissue culture
 - (b) Somatic embryogenesis
 - (c) Anther culture. 10
2. Give a detailed account of "Micropropagation". Discuss its applications and usefulness in crop improvement. 10

SECTION—B

3. What do you understand by "Somaclonal variations"? Give an account of production of disease resistant plants through use of somaclonal variations. 10
4. Give a detailed account of "Artificial seeds". Discuss in detail method of their production and uses. 10

SECTION—C

5. What are “Transgenic plants” ? Give an account of benefits and risks of producing transgenic plants. 10
6. Define Secondary metabolites. Give an account of production of ‘Shikonin’ using cell culture techniques. 10

SECTION—D

7. Give a detailed account of “Freeze preservation technology”. 10
8. Give a detailed account of role of plant tissue culture and biotechnology in human welfare. 10