

MASTER OF SCIENCE (MICROBIOLOGY) (CBCS - 2018 COURSE)

M.Sc. (Microbiology) Sem-III : WINTER- 2022

SUBJECT : ADVANCED BIOTECHNOLOGY

Day : Thursday

Time : 02:00 PM-05:00 PM

Date : 5/1/2023

W-25442-2022

Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Draw labeled diagram **WHEREVER** necessary.
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Q.1 Explain the various molecular techniques in animal cell culture with a note on applications of animal tissue culture. (15)

OR

Describe Plant tissue culture technique and its applications with reference to

- i) Micropropagation
- ii) Callus culture
- iii) Suspension culture

Q.2 a) Describe any four applications of plant genetic engineering. (8)

b) Describe the animal cell culture with reference to (7)
i) Primary cell culture
ii) Secondary cell culture

Q.3 Answer any **THREE** of the following: (15)

- a) Describe animal cell culture media
- b) Describe any one technique for producing transgenic plant.
- c) Explain cell quantification methods for animal cell culture.
- d) Describe frost resistant plants.
- e) Write the medical applications of marine biotechnology.

Q.4 Write short notes on any **THREE** of the following: (15)

- a) Objectives and outcomes of clinical studies
- b) Fuels from algae
- c) Sustained release drugs
- d) IPR
- e) GMP & GLC

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