

MASTER OF SCIENCE (MICROBIOLOGY) (CBCS - 2018 COURSE)
M.Sc. (Microbiology) Sem-IV : WINTER- 2022
SUBJECT : ADVANCED BIOTECHNOLOGY

Day : Thursday

Time : 02:00 PM-05:00 PM

Date : 5/1/2023

W-18603-2022

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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