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WT—140—2024

FACULTY OF SCIENCE AND TECHNOLOGY

M.Sc. (Second Year) (Fourth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2024

(New/CBCS Pattern)

BOTANY

Paper—XVII

(Biotechnology and Genetic Engineering)

(Friday, 13-12-2024)

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

Time—3 Hours

Maximum Marks—75

N.B. :— (i) Attempt *all* questions.

(ii) *All* questions carry equal marks.

(iii) Illustrate your answers with suitable diagram, scheme etc.

1. What is micropropagation ? Describe various explants used in micropropagation.

15

Or

Describe historical development of Plant Tissue Culture.

2. Describe in detail various methods employed for somatic hybridization and application of somatic hybridization.

15

Or

Describe method for making artificial seeds and their applications.

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3. Describe preparation of physical maps of DNA molecules based on RFLP. 15

Or

What are restriction enzymes ? Describe in brief the restriction digestion.

4. Describe amplification of DNA by Polymearse Chain Reaction (PCR). 15

Or

Describe different types of vectors used for gene cloning.

5. Write short notes on (any *three*) : 15

- (i) Callus culture
- (ii) Anther culture
- (iii) Genome imprinting
- (iv) Gene silencing.

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