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SUBJECT CODE NO: - U-9930
FACULTY OF SCIENCE AND TECHNOLOGY
M.Sc. (Service Course) (CBCGS Pattern 2021-2022) (Sem - III)
Examination November / December 2025
Botany - Basic Plant Tissue Culture

[Time: 3 Hours]

[Max. Marks: 100]

Please check whether you have got the right question paper.

N. B

- (1) Section 'A' is compulsory.
- (2) Solve any five question from Section 'B'
- (3) Illustrate your answer whenever necessary.

SECTION A**Q.1 Write short notes on:****20**

- (a) Contamination
- (b) Sterilization
- (c) Phytohormones
- (d) Somaclonal variation
- (e) Totipotency
- (f) Suspension Culture
- (g) Cybrid
- (h) Hardening
- (i) Marker
- (j) cDNA

**SECTION B**

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|------------|---|-----------|
| Q.2 | Define tissue culture and laboratory requirement. Explain the various tools and techniques required for it. | 16 |
| Q.3 | Illustrate the principle, role, types, ingredient and application of various tissue Culture media. with suitable Example. | 16 |
| Q.4 | What is Somatic embryogenesis? state its importance, factor influencing embryogenesis and its significance in tissue culture. | 16 |
| Q.5 | Discuss the primary factors in the tissue culture environment, that contribute to the induction and accumulation of genome instability. | 16 |

- Q.6** Explain in detail 'Protoplast isolation culture'. Elaborate the principle and method of regeneration and fusion of protoplast in brief. **16**
- Q.7** Describe the practical applications of Cryopreservation in biotechnology and Agriculture. **16**
- Q.8** Illustrate your view on the applications of Somatic hybridization in crop improvement. How it differs from traditional recombinant DNA technique in tissue culture context. **16**

