



**K25U 2312**

**Reg. No. : .....**

**Name : .....**

**V Semester B.Sc. Degree (CBCSS – OBE – Regular/Supplementary/  
Improvement) Examination, November 2025  
(2019 to 2023 Admissions)  
CORE COURSE IN BIOTECHNOLOGY  
5B10BTC : Plant Biotechnology**

**Time : 3 Hours**

**Max. Marks : 40**

**PART – A**

Write short notes on **each** of the following in **2 or 3** sentences. **Each** question carries **1** mark. **(6×1=6)**

1. Define totipotency.
2. Identify the growth regulators required in a nutritional medium.
3. List two applications of embryo rescue.
4. What do you understand by the term Callus ?
5. Comment on cybrids.
6. What is a protoplast ?

**PART – B**

Write notes on **any six** of the following. **Each** question carries **2** marks. **(6×2=12)**

7. Comment on surface sterilization agents used in culture.
8. Identify some of the causes of somaclonal variation.
9. Comment on the process of protoplast fusion.

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10. Give an account on the development and applications of artificial seeds.
11. Justify the advantages of suspension cell culture in biopharmaceutical industries.
12. What is an endosperm ?
13. Justify the observation of hybrid vigour.
14. Give a short account of biolistics.

#### PART – C

Write short essay on **any four** of the following. **Each** question carries **3** marks.

**(4×3=12)**

15. Explain the important components of a good plant culture media.
16. Give a summary of root culture and its utility.
17. Elaborate on the generation and applications of triploids.
18. Explain the process of cryopreservation of plant cells.
19. What are haploid plants ? What are they used for ?
20. Detail on the application of electroporation as a method of gene transfer.

#### PART – D

Write essay on **any two** of the following. **Each** question carries **5** marks.

**(2×5=10)**

21. Evaluate the practice of protoplast culture verses conventional callus culture.
  22. Give an account on somatic hybridization and its applications.
  23. Elaborate on the applications of Ti plasmids as a mode of gene transfer.
  24. Discuss on the principle of terminator technology. Evaluate the merits and demerits.
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