**M.Sc. Final Year**

**End Semester Examination (IV Semester 2020-2021)**

**Semester [IV]**

**Subject: Botany Paper Code CMS-BOT-CC 10**

**Time-2 hrs Full Marks=70**

**Group – B (Short answer type questions) Answer any four 5x4=20**

1. Plasmids as cloning vector
2. Totipotency
3. Organogenesis
4. Polymerase Chain reaction
5. Media used in tissue culture
6. Hardening
7. Patent
8. Copy Rights
9. FISH
10. cDNA ibrary
11. Ti Plasmid
12. DNA finger printing
13. Cosmids
14. Phagemids
15. Bt Cotton
16. Flavr savr tomato
17. Reporter gene
18. Southern Blotting

**Group – C (Long answer questions) Answer any two 15x2=30**

1. Describe the process of ovule culture.
2. What do you understand by plant tissue culture? Explain the various components of tissue culture technique.
3. What is chi-square test? A plant with round seeds are crossed with plant with wrinkled seeds. In F2 generation it produced 171 progeny with round seeds and 54 progeny with wrinkled seeds. Using chi-square test determine the probability that the difference between observed and expected values is due to chance or not?
4. Describe various techniques utilized for introducing foreign DNA into plant cells?
5. What is direct gene transfer?
6. Describe the structure of Ti plasmid with particular emphasis on T-DNA structure. How do different sequences help in infection and T-DNA transfer?
7. Discuss the role of transgenic plant in crop improvement.