

M.Sc.(Botany) CBCS Pattern Semester-IV  
**PSCBOTT13 - Plant Biotechnology**

P. Pages : 1

Time : Three Hours



**GUG/W/23/11355**

Max. Marks : 80

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- Notes : 1. All questions are compulsory and carry equal marks.  
2. Draw well labelled diagrams wherever necessary.

1. Describe aims and strategies for development of transgenic Plants with suitable example of Agrobacterium. **16**

**OR**

Write on:

- a) Construction of DNA libraries. **8**  
b) Gene cloning : principles and techniques. **8**

2. Describe Bacterial transformation with selection of recombinants and transformants in detail. **16**

**OR**

Write on:

- a) Molecular markers for introgression of useful traits. **8**  
b) Genetic improvement of industrial microbes and nitrogen fixers. **8**

3. Describe the Basic concepts, Principles, and Applications of Plant tissue culture. **16**

**OR**

Write on:

- a) Protoplast-Isolation, culture and scope. **8**  
b) Salient achievements in Crop Biotechnology. **8**

4. Describe Introduction, History, Definition and applications of Bioinformatics in detail. **16**

**OR**

Write on:

- a) Secondary databases. **8**  
b) SWISS-PROT and pfam. **8**

5. Write short notes on:
- a) T-DNA **4**  
b) Polymerase chain reaction. **4**  
c) Somatic embryogenesis **4**  
d) Sequin and Webin. **4**

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