

M.Sc.(Botany) (C.B.C.S. Pattern) Sem-IV
PSCBOTT15.2-PSCBOTT15-Paper-XV :
Molecular Biology and Plant Biotechnology-II

P. Pages : 1

Time : Three Hours



GUG/S/19/11359

Max. Marks : 80

- Notes : 1. All questions are compulsory and carry equal marks.
2. Illustrate your answers with suitable diagram and examples wherever necessary.

1. Explain the mechanism of T-DNA transfer and add note on its application in recombinant DNA technology. **16**

OR

Write on:

- a) Gene silencing. **8**
b) Cloning vectors. **8**

2. Describe production of transgenic plants yielding secondary metabolites and industrial enzymes with suitable examples. **16**

OR

Write on:

- a) Biopesticides and biofertilizers. **8**
b) Biodegradable plastics. **8**

3. Define Plant Tissue Culture. Give brief historical account on the development of plant tissue culture technique. **16**

OR

Write on:

- a) Gene expression in chloroplast. **8**
b) Organogenesis. **8**

4. What is DNA fingerprinting? Describe the mechanism using RAPD markers. **16**

OR

Write on:

- a) Nif and hup genes. **8**
b) Genetically modified organisms for pollution control. **8**

5. Write short notes on:
a) Liposomes mediated gene transfer. **4**
b) Edible vaccines. **4**
c) Protoplast fusion. **4**
d) Microsatellites. **4**
