

M.Sc. - II (Botany) (CBCS Pattern) Semester-IV  
**PSCBOTT15.2 - (DSE-II) Paper-XV - Molecular Biology and Plant  
Biotechnology-II**

P. Pages : 1

Time : Three Hours



**GUG/S/25/11359**

Max. Marks : 80

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

1. Explain the mechanism of Agrobacterium mediated tumor formation and add note on mechanisms of DNA transfer in detail. **16**

**OR**

Write notes on:

- a) Use of reporter genes and Introns. **8**  
b) Transgene stability and gene silencing. **8**

2. Describe insect pest resistance plant development with suitable example. **16**

**OR**

Write notes on:

- a) Production of secondary metabolites. **8**  
b) Hazards and safety regulations for transgenic plants. **8**

3. Describe the protoplast culture and its fusion in detail. **16**

**OR**

Write notes on:

- a) Somatic embryogenesis. **8**  
b) Regulation of gene expression in translation. **8**

4. Describe organization, function and regulation of nitrogen fixing genes in Klebsiella in detail. **16**

**OR**

Write notes on:

- a) RFLP maps and Linkage analysis. **8**  
b) Pollution control through genetically modified organisms. **8**

5. Write short notes on:  
a) PEG method. **4**  
b) Edible vaccines. **4**  
c) Androgenesis. **4**  
d) SSCP. **4**

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