## M.Sc.(Botany) Fourth Semester Old BOT-16.1-PAPER-XVI - Molecular Biology & Plant Biotechnology (Special)-II

|    | ages: 1  e: Three Hours  * 1 8 5 7 *   | <b>GUG/W/18/2367</b><br>Max. Marks : 80 |
|----|--|---|
|    | Notes: 1. All questions are compulsory and carry equal marks. 2. Draw well-labelled diagrams wherever necessary. |   |
| 1. | What are cloning vectors? Describe cloning vectors for higher plants.  | 16                                      |
|    | OR   |   |
|    | Write on:- a) Features of Ti and Ri plasmids.  | 8                                       |
|    | b) Particle bombardment method.  | 8                                       |
| 2. | What are biofertilizers? Write in detail about biofertilizers.   | 16                                      |
|    | OR   |   |
|    | Write on:-   | 0                                       |
|    | a) Bt genes.   | 8                                       |
|    | b) Edible vaccines.  | o                                       |
| 3. | What is organogenesis? Write about direct and indirect organogenesis.  | 16                                      |
|    | OR Write on:-  |   |
|    | a) Callus culture.   | 8                                       |
|    | b) Organ culture.  | 8                                       |
| 4. | What is pollution? Write about pollution control through GMO.  | 16                                      |
|    | OR   |   |
|    | Write on:-   |   |
|    | a) Nitrogen fixing genes.  | 8                                       |
|    | b) Sequence Characterized Amplified Regions (SCAR)   | 8                                       |
| 5. | Write short notes on:-   |   |
|    | a) <u>Agrobacterium</u> .  | 4                                       |
|    | b) Insect resistance.  | 4                                       |
|    | c) Somatic hybrids.  | 4                                       |
|    | d) RAPD markers.   | 4                                       |
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