Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **19BT3028** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ADVANCED PLANT BIOTECHNOLOGY** | **Max. Marks :** | **100** |

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| **Q. No.** | **Sub Div.** | **Questions** | **Course Outcome** | **Marks** |
| **ANSWER ANY FIVE QUESTIONS (5 x 16 = 80 Marks)** | | | | |
| 1. | a. | Outline the genetic material of plant cells with a neat diagram. | CO1 | 04 |
| b. | Explain in detail the mechanism of transcription and translation process in plant cells. | CO1 | 12 |
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| 2. | a. | What is cytoplasmic male sterility? | CO2 | 03 |
| b. | Discuss in detail the Chloroplast genome structure and function with a neat diagram. | CO2 | 13 |
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| 3. | a. | List the nod genes in plants. | CO3 | 04 |
| b. | Illustrate the mechanism involved in plant secondary metabolites production with one suitable example. | CO3 | 12 |
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| 4. | a. | What is Ti plasmid? | CO4 | 02 |
| b. | State the role of T-DNA in gene transfer in plants. | CO4 | 02 |
| c. | Explain the genes involved in agrobacterium mediated gene transfer in plants with suitable examples. | CO4 | 12 |
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| 5. | a. | Give a brief account on CMV. | CO5 | 03 |
| b. | Elaborate the different viral vectors used in plant transformation with a neat diagram. | CO5 | 13 |
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| 6. |  | Explain the genome structure of Mitochondria and its importance in plant genome analysis. | CO2 | 16 |
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| 7. |  | Discuss in detail the mechanism of nitrogen fixation and the genes involved in it with suitable diagram. | CO3 | 16 |
| **COMPULSORY QUESTION (1 x 20 = 20 Marks)** | | | | |
| 8. | a. | List two examples of herbicide resistant transgenic plants. | CO6 | 02 |
| b. | What is molecular pharming? | CO6 | 02 |
| c. | What is RNA i? | CO6 | 02 |
| d. | Explain the steps involved in development of genetically modified pest resistant plants with suitable example. | CO6 | 14 |