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

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

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| **Code :** | **19BT3010** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MICROBIAL BIOTECHNOLOGY** | **Max. Marks :** | **100** |

**ANSWER ANY FIVE QUESTIONS (5 x 16 = 80 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | What is solid state and submerged fermentation? Explain in detail. | CO1 | 6 |
| b. | Give an account of types of culture media and its components. | CO1 | 4 |
| c. | Write briefly the factors affecting solid state fermention. | CO1 | 6 |
|  |  |  |  |  |
| 2. | a. | Write short notes on chromosome walking. | CO2 | 3 |
| b. | Elucidate the metagenomics role in human genome. | CO2 | 8 |
| c. | Bring out the phylogenetic relationship among microbes. | CO2 | 5 |
|  |  |  |  |  |
| 3. | a. | What are the methods used in novel enzymes screening using proteomics? | CO3 | 7 |
| b. | Write short notes on structural proteomics. | CO3 | 3 |
| c. | What is MALDI-ToF? Explain in detail. | CO3 | 6 |
|  |  |  |  |  |
| 4. | a. | Write short notes on phosphate solubilizing microorganisms. | CO4 | 3 |
| b. | What are baculoviruses? Explain their role in biocontrol. | CO4 | 8 |
| c. | Write briefly the entomopathogenic fungi. | CO4 | 5 |
|  |  |  |  |  |
| 5. | a. | How bacteriophages are helpful in bacterial control? | CO5 | 4 |
| b. | What are recombinant vaccines? Explain in detail. | CO5 | 8 |
| c. | Write briefly the role played by gut microflora. | CO5 | 4 |
|  |  |  |  |  |
| 6. | a. | What are the components of fermentation? | CO1 | 3 |
| b. | What are biopesticides? Give examples. | CO4 | 5 |
| c. | Explain in detail the preparation of *Rhizobium.* | CO5 | 8 |
|  |  |  |  |  |
| 7. | a. | What are the positive interactions found between microorganisms and plants? | CO5 | 7 |
| b. | Write notes on composting. | CO5 | 5 |
| c. | Write short notes on the RFLP. | CO2 | 4 |
| **COMPULSORY QUESTION (1 x 20 = 20 Marks)** | | | | |
| 8. | a. | How biosensors are useful in industries? | CO6 | 4 |
| b. | Write briefly the biopolymers and its importance. | CO6 | 6 |
| c. | Write down the industrial production of acetone-butanol from microorganisms. | CO6 | 10 |