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

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**End Semester Examination – Nov/Dec– 2017**

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| **Code :** | **15BT3019** | **Duration :** | **3hrs** |
| **Sub. Name :** | **SOIL AND AGRICULTURAL MICROBIOLOGY** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Add a note on historical developments in Agricultural Microbiology. | CO1 | 5 |
| b. | Explain the distribution of soil microorganisms and the importance of soil microorganisms. | CO1 | 15 |
| (OR) | | | | |
| 2. | a. | Illustrate the various methods for qualitative estimation of soil micro organisms. | CO1 | 10 |
| b. | Enumerate the distribution of microorganisms in organic manure and composts. | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | Illustrate the carbon cycle with a neat diagram. | CO1 | 10 |
|  | b. | Explain the sulphur cycle with a clear diagram. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Summarize mechanism of nitrogen fixation in soil by microbes. | CO1 | 8 |
|  | b. | Add a note on Rhizosphere, Rhizoplane, Spermosphere and Phyllosphere. | CO1 | 12 |
|  |  |  |  |  |
| 5. | a. | Define Humus? Explain its different stages of formation along with its benefits. | CO2 | 10 |
|  | b. | Give an account on the importance and role of various soil enzymes. | CO2 | 10 |
| (OR) | | | | |
| 6. | a. | Paraphrase organic matter Decomposition. | CO2 | 10 |
|  | b. | Demonstrate the beneficial and harmful relationships of Soil microorganisms. | CO2 | 10 |
|  |  |  |  |  |
| 7. | a. | Illustrate Symbiosis, Asymbiosis and Associated Symbiosis among bacteria, cyanobacteria and actinomycetes. | CO2 | 10 |
|  | b. | Define Mycorrhiza. Illustrate the Ectomycorrhiza and Endomycorrhiza. | CO2 | 10 |
| (OR) | | | | |
| 8. | a. | Tabulate any four bacterial, fungal and viral diseases in plants with respective host name, phytopathogen name and symptoms. | CO2 | 10 |
|  | b. | i. State Phytoalexins?  ii. Explain in detail about its important role and biosynthesis. | CO3 | 2  8 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | i. Define biofertilizers?  ii. Mention the different biofertilizers, role and its advantages. | CO3 | 2  8 |
|  | b. | i. Define Bio control Agent.  ii. Mention the mechanism behind it and give any two examples. | CO3 | 2  8 |

ALL THE BEST