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



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

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| **Code :** | **14BT2005** | **Duration :** | **3hrs** |
| **Sub. Name :** | **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. | Explain the working principle and specimen preparation techniques of TEM with neat diagram. | CO3 | 12 |
| b. | Draw a diagram of bright field microscope and mention the different parts with their functions. | CO3 | 8 |
| **(OR)** | | | | |
| 2. | a. | With a neat flow chart, enumerate the principle, role of dyes and steps involved in Gram staining and Acid fast staining. | CO3 | 12 |
| b. | Outline the various criteria used in bacterial classification. | CO3 | 8 |
|  |  |  |  |  |
| 3. | a. | Briefly classify microorganism based on nutrient requirements with specific examples. | CO5 | 12 |
| b. | Compare active with passive transport with neat illustrations. | CO5 | 8 |
| **(OR)** | | | | |
| 4. | a. | Describe the structure of Gram positive bacterial cell wall. | CO2 | 10 |
| b. | Elucidate the different types of the culture media with appropriate examples. | CO4 | 10 |
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| 5. | a. | Enumerate the types of physical methods used to control microorganisms. | CO4 | 10 |
| b. | Demonstrate any TWO methods used to quantitate bacterial growth with their merits and demerits. | CO4 | 10 |
| **(OR)** | | | | |
| 6. | a. | Explain chemostat and turbidostat with a neat diagram. | CO4 | 12 |
| b. | Mention the different phases of bacterial growth curve with a neat diagram and mention the process occurring in each phase. | CO5 | 8 |
|  |  |  |  |  |
| 7. | a. | Explain the mechanism in biological nitrogen fixation. Add a note on the root nodulation process. | CO2 | 12 |
| b. | Enumerate the mode of action of BT toxin. | CO2 | 8 |
| **(OR)** | | | | |
| 8. | a. | Define bioremediation. Explain *In situ* and *Ex situ* bioremediation of soil pollutants with appropriate examples | CO6 | 12 |
| b. | Summarize the principles of food preservation. | CO6 | 8 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Summarize the important events in the development of microbiology. | CO1 | 12 |
| b. | Compare the salient features of prokaryotes and eukaryotes. | CO1 | 8 |