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

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

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| **Code :** | **15BT3009** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MICROBIAL PHYSIOLOGY AND METABOLISM** | **Max. Marks :** | **100** |

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

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | Explain in details, the cultivation and growth pattern of microorganisms in batch culture. | CO1 | 20 |
| **(OR)** | | | | |
| 2. |  | ‘Biosynthesis and energy production during microbial growth depends on nutritional factors’- Discuss. | CO1 | 20 |
|  |  |  |  |  |
| 3. |  | Summarize the formation of pyruvate by glycolysis in energy metabolism. | CO2 | 20 |
| **(OR)** | | | | |
| 4. |  | “ The initial steps of ATP generation involve the consumption of ATP”- True or false? Explain the overall process of ATP generation. | CO2 | 20 |
|  |  |  |  |  |
| 5. |  | Summarize the steps in fermentation and identify the reason why pyruvate is converted into a final end product. | CO2 | 20 |
| **(OR)** | | | | |
| 6. |  | Construct the electron transport pathway, indicating the important steps in the synthesis of ATP. | CO2 | 20 |
|  |  |  |  |  |
| 7. |  | Outline the steps involved and importance of energy fixing reaction and carbon fixing reaction of photosynthesis. | CO2 | 20 |
| **(OR)** | | | | |
| 8. | a. | Define nitrogen fixation. | CO1 | 3 |
| b. | How nitrogen is metabolized in nitrogen cycle? Explain in detail. | CO1 | 17 |
|  | | **Compulsory:** |  |  |
| 9. |  | What is Qurum sensing? How it physically interacts with inducer and receptors in cell signaling? | CO2 | 20 |