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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **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. | a. | Compare the events of each phase of a bacterial growth curve. | CO1 | 15 |
| b. | Differentiate between chemostat and turbidostat . | CO1 | 5 |
| (OR) | | | | |
| 2. |  | Microorganisms require nutrients for synthesis of new cellular components and energy regulation, Elaborate. | CO1 | 20 |
| 3. | a. | Explain briefly the competitive and non-competitive inhibition. | CO1 | 10 |
|  | b. | In a microbial cell, how the 32 molecules of ATP can result from the metabolism of a molecule of glucose. | CO2 | 10 |
| (OR) | | | | |
| 4. |  | Define glycolysis? how glycolysis fits into the metabolism of glucose in aerobic cells. | CO2 | 20 |
| 5. |  | Construct the electron transport pathway, indicating the important steps in the synthesis of ATP. | CO2 | 20 |
| (OR) | | | | |
| 6. | a. | Outline the steps involved and importance of: Energy fixing reaction of photosynthesis. | CO2 | 10 |
|  | b. | Carbon fixing reaction of photosynthesis. | CO2 | 10 |
| 7. |  | Summarize the important steps involved for the metabolism of lipid molecules. | CO2 | 20 |
| (OR) | | | | |
| 8. | a. | Compare and contrast aerobic and anaerobic respiration. | CO1 | 12 |
|  | b. | Distinguish between the energy and carbon sources for the four nutritional classes of microorganisms. | CO1 | 8 |
|  | | **Compulsory:** |  |  |
| 9. |  | Sketch the biosynthetic reactions of purine and pyrimidine. | CO2 | 20 |