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



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

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| **Code :** | **14BT2048** | **Duration :** | **3hrs** |
| **Sub. Name :** | **METABOLIC ENGINEERING** | **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 significance of metabolic flux analysisin metabolic engineering. | CO1 | 12 |
| b. | Critically analyze mutants resistant to repression with examples. | CO2 | 8 |
| **(OR)** | | | | |
| 2. | a. | Comment on concerted and cumulative feedback regulations with a neat flow chart. | CO1 | 12 |
| b. | Narrate the fate of pyruvate formed in glycolysis during aerobic conditions. | CO1 | 8 |
|  |  |  |  |  |
| 3. | a. | Explain the biosynthetic pathway and regulation in production of amino acid, glutamic acid. | CO1 | 12 |
| b. | Justify the role of precursor molecules in the synthesis of secondary metabolites. | CO3 | 8 |
| **(OR)** | | | | |
| 4. | a. | Elaborate on different regulatory methods of secondary metabolites. | CO1 | 12 |
| b. | Summarize the applications of secondary metabolites. | CO3 | 8 |
|  |  |  |  |  |
| 5. | a. | Critically analyze the sequential and cooperative feedback regulations with suitable illustrations. | CO1 | 10 |
| b. | Outline the principle of Davis and replica plate technique in isolation of auxotrophic strains. | CO2 | 10 |
| **(OR)** | | | | |
| 6. | a. | Demonstrate the metabolic pathway manipulations for the enhancement of antibioticswith appropriate examples. | CO2 | 12 |
| b. | Explain repression and induction with examples. | CO1 | 8 |
|  |  |  |  |  |
| 7. | a. | Elucidate the strategies employed in the maintenance of genetically stable plasmids. | CO2 | 10 |
| b. | Explain the metabolic pathway manipulations for the enhancement of vitamin production. | CO2 | 10 |
| **(OR)** | | | | |
| 8. | a. | Critically analyze the impact of aflatoxin and other associated fungal toxins on environment and society. | CO2 | 12 |
| b. | Briefly explain the types of biotransformation reactions. | CO3 | 8 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Develop a suitable procedure for the isolation of mutants that do not recognize the presence of inhibitors and repressors with suitable examples. | CO1 | 15 |
| b. | Summarize the factors that influence the process of bioconversion reactions. | CO3 | 5 |