Reg.No. _____

**Karunya 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

**Code : 14BT2048** | **Semester : 2016-17 ODD**
**Sub. Name : Metabolic Engineering** | **Duration : 3hrs** | **Max. marks : 100**

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

| Q. No. | Sub Div. | Questions | Course Outcome | Marks |
|---|---|---|---|---|
| 1. | a. | Explain the concerted feedback regulation and cumulative feedback regulation with a neat flow chart | CO1 | 12 |
| | b. | Critically analyze mutants resistant to repression | CO2 | 8 |
| | | (OR) | | |
| 2. | a. | Enumerate the role of metabolic flux analysis in metabolic engineering | CO1 | 12 |
| | b. | Discuss the fate of pyruvate formed in glycolysis during aerobic conditions | CO1 | 8 |
| 3. | a. | Enumerating the principle of metabolic engineering for the production of purine nucleotides | CO2 | 12 |
| | b. | Mention the applications of secondary metabolites | CO3 | 8 |
| | | (OR) | | |
| 4. | a. | Illustrate the biosynthetic pathways and regulation for production of amino acid glutamic acid | CO1 | 20 |
| 5. | a. | Describe about the metabolic pathway manipulations for the enhancement of vitamin with suitable illustrations | CO2 | 20 |
| | | (OR) | | |
| 6. | a. | Explain the phase during which secondary metabolites are synthesized and their different regulatory methods | CO3 | 12 |
| | b. | Explain repression and induction with appropriate examples | CO1 | 8 |
| 7. | a. | Explain the process of bioconversion of steroids with a neat flow chart | CO3 | 10 |
| | b. | Describe how bioconversions are important in synthesis of new product? | CO3 | 10 |
| | | (OR) | | |
| 8. | a. | Elaborate on the types of mycotoxins and their impact on human health | CO2 | 12 |
| | b. | Briefly explain the types of biotransformation reactions | CO3 | 8 |
| | | **Compulsory:** | | |
| 9. | a. | Elaborate on the isolation of mutants that do not recognize the presence of inhibitors and repressors with suitable examples | CO1 | 20 |

ALL THE BEST