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 – 2017**

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|  |  |  |  |
| **Code :** | **14EC2059** | **Duration :** | **3hrs** |
| **Sub. Name :** | **OPTIMIZATION TECHNIQUES** | **Max. marks :** | **100** |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Explain how the standard minimization problem is addressed by the simplex method. | CO1 | 15 |
| b. | List the classification of Linear programming problem. | CO1 | 5 |
| (OR) | | | | |
| 2. | a. | Outline the steps involved in ant colony optimization algorithm. Mention the importance of stopping criteria. | CO1 | 15 |
| b. | Write short notes on unbounded solution. | CO1 | 5 |
|  |  |  |  |  |
| 3. |  | Summarize the mathematical concepts of  i. Matrix Factorization ii. sets and sequences iii. Convex sets | CO1 | 20 |
| (OR) | | | | |
| 4. |  | Use two-phase simplex Method to  Maximize  Subject to | CO2 | 20 |
|  |  |  |  |  |
| 5. | a. | Determine the procedure to find a local minima of a function using steepest decent algorithm with an example. | CO2 | 15 |
|  | b. | Explain the structure of linear programming problem. | CO2 | 5 |
| (OR) | | | | |
| 6. |  | Discuss the steps to be followed to solve unconstrained optimization problem using conjugate gradient method. | CO2 | 20 |
|  |  |  |  |  |
| 7. | a. | Explain the concepts of barrier function method with suitable examples. | CO3 | 10 |
|  | b. | Write the procedure to extend Augmented langragian method. | CO3 | 10 |
| (OR) | | | | |
| 8. |  | Summarize the concept of Augmented langragian method in solving constrained optimization problems. | CO3 | 20 |
|  | |  |  |  |
|  | | **Compulsory:** |  |  |
| 9. | a. | Analyze the usage of Successive linear programming in solving non linear optimization problem. | CO3 | 15 |
|  | b. | List the factors affecting the solution of constrained problem | CO3 | 5 |

ALL THE BEST