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



**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **17EE3024** | **Duration :** | **3hrs** |
| **Sub. Name :** | **SOFT COMPUTING TECHNIQUES** | **Max. marks :** | **100** |

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Write the various steps of propagation algorithm. | CO1 | 10 |
| b. | Compare the biological and artificial neural network with a neat sketch. | CO1 | 10 |
|  |  | (OR) |  |  |
| 2. |  | With a neat sketch explain the operation ( Training and Testing) of a Recurrent Neural Network. | CO1 | 20 |
|  |  |  |  |  |
| 3. |  | Consider four travel packages offered by Thomas Cook, Club Mahindra, World around, and Himalaya Travels. We want to choose one. Their costs are INR 100,000, INR 200,000 , INR 150,000 and INR 175,000. Their travel time in hours are 150, 200, 100, and 125 respectively. They are viewed as interesting with degrees 0.4 , 0.3 ,0.6 ,0.5. Define your own fuzzy set of acceptable travel times. Then determine the fuzzy set of interesting travel packages whose cost and travel times are acceptable and use this set to choose one of your own packages. | CO1 | 20 |
|  |  | (OR) |  |  |
| 4. |  | Assume a typical control problem of yours and explain the various steps involved in finding a solution using Genetic Algorithm. | CO2 | 20 |
|  |  |  |  |  |
| 5. |  | Give step by step procedure for Ant Colony Optimization (ACO). | CO3 | 20 |
|  |  | (OR) |  |  |
| 6. | a. | Explain different membership function used in fuzzy logic with diagram. | CO1 | 10 |
| b. | Discuss about Direct and Indirect neuro control schemes in neural network. | CO1 | 10 |
|  |  |  |  |  |
| 7. |  | Using Matlab Neural Network tool box discuss how will you identify and control the linear and nonlinear dynamic system. | CO4 | 20 |
|  |  | (OR) |  |  |
| 8 | a | What do you mean by neuro controller explain its application in inverted pendulum system. | CO4 | 10 |
| b | Compare and contrast Tabu search and ANT algorithm. | CO3 | 10 |
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| **Compulsory:** | | | | |
| 9. | a. | Explain how will you optimize the load regulation problem using Particle Swarm Optimization. | CO6 | 10 |
| b. | Draw the block diagram of fuzzy logic controller for a nonlinear process. | CO6 | 10 |