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| **Scheme of Valuation/Answer Key**(Scheme of evaluation (marks in brackets) and answers of problems/key) |
| **APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**SIXTH SEMESTER B.TECH DEGREE EXAMINATION, MAY 2019 |
| **Course Code: EE368** |
| **Course Name: SOFT COMPUTING** |
| Max. Marks: 100 |  | Duration: 3 Hours |
| **PART A** |
|  |  | ***Answer all questions, each carries5 marks.*** | Marks |
| 1 |  | Schematic representation of biological and artificial neuron – 3 marks. Comparison -2 marks | (5) |
| 2 |  | Description of perceptron -2 marks, training procedure explanation/flowchart-3 marks | (5) |
| 3 |  | Block diagram of fuzzy expert system – 2 marks, explanation of block diagram- 3marks | (5) |
| 4 |  | Comparison of Mamdani and Sugeno fuzzy models- 5 marks | (5) |
| 5 |  | Any 2 methods for selection process and its explanation -2 x 2.5 =5 marks | (5) |
| 6 |  | Explanation of Single point and multi point crossover ( or any two)– 2 x 2.5 =5 marks | (5) |
| 7 |  | Linear learning machine- explanation/Linear SVM/perceptron based explanation -5 | (5 ) |
| 8 |  | Any 5 applications of SVM – 1 mark each – 5 x 1=5marks | (5 ) |
| **PART B** |
| ***Answer any twofull questions, each carries10 marks.*** |
| 9 |  | Block diagram-2 marks, Example- 3 marks, Explanation-5 marks | (10) |
| 10 | a) | 3 constituents with explanation- 5marks | (5) |
|  | b) | Five basic fuzzy operations – 1 mark each.... 5 x 1=5marks | (5) |
| 11 | a) | Description -3 marks, Block diagram-2 marks | (5) |
|  | b) | Description -3 marks, Block diagram-2 marks | (5) |
| **PART C** |
| ***Answer any twofull questions, each carries10 marks.*** |
| 12 |  | Block diagram-4 marks, Description – 6 marks | (10) |
| 13 | a) | Classification tree diagram – 2marks,Description of classification tree -3marks | (5) |
|  | b) | Rule base structure identification explanation -5 marks | (5) |
| 14 | a) | Any one clustering algorithm description with required diagrams- 6 Marks Example or explanations-4Marks | (10) |
| **PART D** |
| ***Answer any twofull questions, each carries 10 marks*** |
| 15 |  | Description- 4 marks, Any 3 application- 3 x 2= 6 marks | (10) |
| 16 | a) | Genetic diversity- elimination of local optima- 3 Marks. usual range of probability value- very small-single bit or 0.001 probability-2marks. | (5) |
|  | b) | Regression explanation-3 marks , any 2 applications- 2 marks | (5) |
| 17 |  | Steps of Genetic Algorithm-5 Marks, Example- illustration-5 Marks. | (10) |
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