

**M.Tech. IN ADVANCED INFORMATION
TECHNOLOGY - INTELLIGENT SYSTEMS AND
ROBOTICS (MTECHSR)**

00013

Term-End Examination

June, 2015

MINI-045 : APPLIED ARTIFICIAL INTELLIGENCE

Time : 3 hours

Maximum Marks : 100

Note : (i) *Section I is compulsory.*

(ii) *In Section II, attempt any five questions.*

(iii) *Assume suitable data wherever required.*

(iv) *Draw suitable sketches wherever required.*

(v) *Italicized figures to the right indicate maximum marks.*

SECTION I

1. Explain the various stages of genetic algorithms.
Also explain how genetic algorithms are applied
for curve fitting.

15+15

SECTION II

2. (a) Explain how simulated annealing can be used to find a value close to the smallest number from a very large data set. 7
- (b) Explain how neural networks are used in image processing. 7
3. (a) What is the importance of selecting proper heuristics in applying artificial intelligence algorithms to a problem ? 7
- (b) Explain how neural network is used as a memory. 7
4. (a) Explain the steps involved in applying A* algorithm in maze solving. 7
- (b) What is an expert system ? 4
- (c) What kind of inputs are required to design such a system ? 3
5. Explain how fuzzy logic can be applied to a fire detection system. 14
6. Explain how breadth-first search can be applied to the game of Tic-Tac-Toe. 14

7. (a) What is the limitation of neural network when implemented in a programming language as compared to implementation in hardware ? 7
- (b) What are the methods to improve the performance of neural networks ? 7
8. (a) Explain with an example how genetic algorithm is better than classical approach. 7
- (b) What is ART (Adaptive Resonance Theory) ? 7
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