AQ – 2778

First Semester M. E. (I.T) Examination

INTELLIGENT SYSTEMS

(Elective – I)

Paper – 1 NMEF 5

P. Pages : 3

Time : Three Hours] [Max. Marks : 80

Note : (1) Due credit will be given to neatness and adequate dimensions.
(2) Assume suitable data wherever necessary.
(3) Retain the construction lines.
(4) Illustrate your answer wherever necessary with the help of neat sketches.

1. (a) Explain different issues in design of search programs. 8

   (b) Explain problem, problem space and search space in brief. 6

OR

2. (a) What is TMS ? Explain architecture of problem solver with TMS. 8

   (b) Explain different non deductive inference method with an example. 6

3. (a) What is expert system ? Give characteristics, feature and application of it. 7

   (b) Explain the software tools for building up expert systems. 6

OR

4. (a) Explain the different types of human knowledge represented by the current generation of expert system building tools. 7

   (b) List and explain the potential errors in the expert system development. 6

5. (a) Explain with reference to fuzzy decision making :—

   (i) Fuzzy ordering.

   (ii) Preference and consensus. 8

(b) Explain why we need fuzzy set theory. 5

OR

6. (a) Design a fuzzy logic control of blood pressure during anesthesia. Develop rule based for input and output. 8

(b) Explain the following :—

(i) Fuzzy synthetic evaluation.

(ii) Multi-objective decision making. 5

7. (a) Compare and contrast biological neuron and artificial neuron. 7

(b) Draw and explain the structure of MADALINE network. 7

OR

8. (a) Explain the concept of linear separability. Give example. 7

(b) Explain some practical issues in using standard back propogation algorithm. 7

9. (a) How genetic algorithm is used to find set of optimal weights. 6

(b) What is simulated annealing ? Explain the algorithmic steps of simulated annealing. 7

OR

10. (a) Explain the following :—

(i) Multipoint cross over.

(ii) Mutation operator. 8

(b) Explain multi objective decision making with example. 5

11. (a) Explain Ant colony optimization giving example. 6

(b) Explain probabilistic transition rule in brief. 7

OR

12. (a) Explain particle swarm intelligence in brief. 7

(b) Explain various types of ant colony models. 6