

M.E. First Semester (Computer Science & Infor. Tech.) (New-CGS)  
**13183 : Elective - I : Expert System Design & Intelligent System**  
**1 RNME 5**

P. Pages : 2

Time : Three Hours



**AW - 3874**

Max. Marks : 80

- Notes :
1. Due credit will be given to neatness and adequate dimensions.
  2. Assume suitable data wherever necessary.
  3. Illustrate your answer necessary with the help of neat sketches.
  4. Use of pen Blue/Black ink/refill only for writing the answer book.

1. a) Define expert system. Give its characteristics. 7
- b) Explain monotonic & nonmonotonic reasoning with example. 7

**OR**

2. a) Explain state space search with example. 7
- b) What are the various knowledge representation scheme. 7
3. a) Explain frame system for representing real world knowledge. 7
- b) Explain methods of knowledge acquisition in detail. 6

**OR**

4. a) Explain object oriented analysis & design for expert system. 7
- b) Explain production rule with suitable example. 6
5. a) Draw and explain the basic structure for Fuzzy controller. 7
- b) Explain Hardware realization of analog fuzzy controlled with example. 6

**OR**

6. a) Differentiate between probability distribution & possibility distribution. 7
- b) What are various fuzzy sets? State & explain each. 6
7. a) Explain cascade correlation neural network in detail. 7
- b) Explain the procedure to calculate weights for hidden layers in ANN. 7

**OR**

8. a) What are the supervised and non-supervised learning in neural network with an example. 7
- b) Explain Elman back propagation neural network. 7

9. a) Explain machine learning classifier system with block diagram. 7  
b) Explain the working of Genetic algorithm with suitable example. 6

OR

10. a) Explain the various sampling mechanism that deals selection of chromosomes from sampling space. 7  
b) Explain machine learning classifier system with block diagram. 6
11. a) Explain various principles in swarm intelligence. 6  
b) What are the different ways of pheromone trail updating? Why it is necessary. 7

OR

12. a) What is idea of ant colony algorithm? How it is used by ant? 6  
b) With reference to ACO discuss travelling salesman problem in detail. 7

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