M.E. First Semester (Information Technology) (Full Time) (C.G.S.)

13423 : Elective-I : Intelligent Systems : 1 NMEF 5

P. Pages : 2 | **AW - 3746**

Time : Three Hours | Max. Marks : 80

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

1. a) Explain Truth maintenance system with architecture of problem solves. **8**

b) Explain the following terms :- **6**
i) problem
ii) problem space
iii) search space

OR

2. a) Explain the guidelines for knowledge acquisition. 7

b) Explain the procedure for conversion to normal form in brief. 7

3. a) Explain the following terms :- **6**
i) validation. ii) verification.

b) List and explain the different categories of tools available for an expert system. 7

OR

4. a) List and explain the advantages of an Expert system. 7

b) Explain Expert system. Also explain the characteristics & features of an expert system. **6**

5. a) Explain :- **6**
i) Max-Min composition.
ii) Max-Star composition.
iii) Max-Product composition.

b) List & explain different operations on fuzzy sets. 7

OR

6. a) What is fuzzy controller? Explain the structure of fuzzy controller. **6**

b) Explain the different types of compositions of fuzzy relation. 7

7. a) Describe the architecture of Artificial Neural Networks with the help of a neat diagram. 7

b) Explain back propagation Training Algorithm. 7

OR

8. a) Explain functional link neural network in detail. 7

b) Explain the vector & matrix notation in brief. 7

9. a) What is simulated annealing? Explain the algorithmic steps for simulated annealing. 7

b) Explain the structure of an evolutionary programming algorithm. 6

OR

10. a) Explain the following genetic representation. 6

i) Binary ii) Hexadecimal 6

b) Draw & explain the flowchart of genetic algorithm. 7

11. a) Explain Biological ant colony system in brief. 7

b) Explain the following :- 6

i) pbest
ii) nbest & gbest
iii) Inertia weight

OR

12. a) Explain various types of ant colony models. 6

b) Explain probabilistic transition rule in brief. 7

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