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

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

P. Pages : 2 | **AU - 3306**

Time : Three Hours | Max. Marks : 80

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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.

1.	a)	List and explain the different inference rules.	**7**
	b)	Explain the procedure for conversion to normal form in brief.	**7**
		OR	
2.	a)	Explain truth maintenance system in brief.	**7**
	b)	Explain the guidelines for knowledge acquisition.	**7**
3.	a)	Explain the architecture of Expert System in brief.	**7**
	b)	Explain verification and validation of expert system.	**6**
		OR	
4.	a)	List and explain the applications of an expert system.	**6**
	b)	What is knowledge engineering environment (KEE) ? Explain how the knowledge base is created in KEE.	**7**
5.	a)	What is Fuzzy controller ? Explain the structure of fuzzy controller.	**6**
	b)	List and explain the different operations on fuzzy sets.	**7**
		OR	
6.	a)	List and explain the different types of compositions of fuzzy relation.	**7**
	b)	Explain the different defuzzification methods in brief.	**6**
7.	a)	Explain feed forward neural network in brief.	**7**
	b)	Explain vectors and matrix notations in brief.	**7**
		OR	
8.	a)	Explain Elman Backpropagation Neural Network in brief.	**7**
	b)	Explain functional link neural network in detail.	**7**

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9.	a)	What is sampling space ? Explain regular sampling space.	**7**
	b)	Explain the structure of an evolutionary programming algorithm.	**6**

OR

10.		Explain the following Inheritance Operators in brief.	**13**
		i) Dominance	
		ii) Inversion	
		iii) Deletion	
		iv) Regeneration	
		v) Segregation	
		vi) Translocation.	
11.	a)	Explain the different characteristics of artificial ants in detail.	**7**
	b)	Explain probabilistic transition rule in brief.	**6**

OR

12.	a)	List and explain the different parts of ant colony search mechanism.	**7**
	b)	What is Particle Swarm Optimization (PSO)? Explain the characteristic features of PSO.	**6**

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