B.E. (Computer Technology) Seventh Semester (C.B.S.)

Elective - I : Computational Intelligence

P. Pages : 2 **NRT/KS/19/3563**

Time : Three Hours * 0 2 7 3 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.

1. a) Write a note on computational intelligence paradigms. **7**

b) What is PSO? What are its applications. **6**

OR

2. a) Explain models of natural immune system. **6**

b) State and explain classes of evolutionary algorithm. **7**

3. a) Briefly explain uncertainty management. **7**

b) Define expert system and describe its types. **7**

OR

4. a) Explain fuzzy set theory. What is the need of de-fuzzification. **7**

b) With suitable example explain fuzzy knowledge base. **7**

5. a) Briefly describe multilayered feed forward neural network. **6**

b) State various types of learning algorithms. **7**

OR

6. a) Compare supervised and unsupervised learning algorithm. **6**

b) Write a short note on Radial basis function networks. **7**

7. a) Write a short note on chromosomes. **7**

b) Differentiate genetic and phenotypic evaluation. **6**

OR

8.	a)	What is fitness function in genetic algorithm?	**7**
	b)	Explain crossover and mutation with respect to genetic algorithms.	**6**
9.	a)	Explain the role of PSO to cluster data.	**6**
	b)	State differences and similarities between PSO and EAs.	**7**

OR

10.	a)	Discuss basic PSO parameters.	**7**
	b)	How does ant colony system work.	**6**
11.		Write a short note on.	**14**

i) Hybrid Intelligent system. ii) Neural expert system.

OR

12.	a)	Describe the steps in EA.	**7**
	b)	What are convergence criteria used for stepping condition.	**7**

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