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

Elective - I : Computational Intelligence

P. Pages : 2 **KNT/KW/16/7479**

Time : Three Hours * 0 8 5 4 * 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.
10. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Explain various classes of evolutionary algorithm. **7**

b) Explain block diagram of computational intelligence. **7**

OR

2. a) Explain the role and working of artificial Neuron in computational intelligence. **7**

b) What is PSO? What are its applications. **7**

3. a) What is expert system? What are its types? Describe any one of them. **7**

b) Explain Fuzzy set theory. What is the need of de-fuzzification. **6**

OR

4. Explain fuzzy knowledge based water level indicator. Assume suitable inputs.

5. a) What are different types of learning algorithm? **7**

b) Give artificial neuron model for implementation of AND and OR function with truth table. **6**

OR

6. a) Is it possible to use single PU to learn problems that are not linearly separable? **7**

b) Write short note on multilayered feedforward neural network. **6**

7. a) What are the components of evolutionary algorithm? **5**

b) Discuss the difference between genetic and phenotypic evolution. **8**

OR

solveout.in

8.	a)	Compare and contrast between genetic algorithm and other traditional algorithm.	**8**
	b)	What is the significance of chromosome in Genetics.	**5**
9.	a)	Discuss in detail the differences and similarities between PSO and EAs.	**7**
	b)	Discuss how PSO can be used to cluster data.	**6**

OR

10.	a)	Which are velocity components of guest PSO?	**7**
	b)	What are basic PSO parameters.	**6**
11.	a)	Which optimization problem have influence over fitness function.	**7**
	b)	Show that min-operator is a) Commutative b) Idempotent c) Transitive.	**7**

OR

12.		Explain convergence criterion for stopping condition.	**14**

****

solveout.in