A **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 59376

B.E./B.Tech. DEGREE EXAMINATION, NOV 2018

Open elective

Civil Engineering

15UEE976 - APPLIED SOFT COMPUTING

(Common to CSE, ECE, MECH, EIE ,IT and Chemical Engineering branches)
(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Which AI system will work for you to find information on the internet? CO1- R

   (a) Intelligent agent (b) Neural network

   (c) Genetic algorithm (d) Expert system

2. Semantic Networks is CO1- R

   (a) A way of representing knowledge (b) Data Structure

   (c) Data Type (d) None of the mentioned

3. Artificial neural network used for CO2- R

   (a) Pattern recognition (b) Classification (c) Clustering (d) All of these

4. Which of the following is not the promise of artificial neural network? CO2- R

   (a) It can explain result (b) It can survive the failure of some nodes

   (c) It has inherent parallelism (d) It can handle noise

5. Where are Genetic Algorithms applicable? CO3- R

   (a) Real time application (b) Biology (c) Artificial Life (d) All the above

6. Which approach is most suited to complex problems with significant uncertainty, a need for experimentation, and time compression? CO3- R

   (a) Simulation (b) Optimization (c) Human intuition (d) Genetic algorithms

7. The values of the set membership is represented by CO4- R

(a) Discrete Set (b) Degree of truth (c) Probabilities (d) Both b & c

8. There are also other operators, more linguistic in nature, called _____ that can be applied to fuzzy set theory. CO4- R

(a) Hedges (b) Lingual Variable (c) Fuzz Variable (d) None of the mentioned

9. Fuzzy logic controllers are based on _____ CO5- R

(a) Heuristics (b) Linear variables (c) Non-linear variables (d) None of the above

10. Weighted average method is valid for_____ output MF only. CO5-R

(a) Asymmetric (b) Symmetric (c) Both (d) None of the above

PART – B (5 x 2= 10 Marks)

11. List the various types of soft computing technique. CO1- R

12. Summarize merits and demerits of Back Propagation Algorithm. CO2-U

13. List the application of genetic algorithm. CO3- U

14. Differentiate fuzzification and defuzzification. CO4- U

15. List the different selection mechanism in genetic algorithm. CO5- U

PART – C (5 x 16= 80 Marks)

16. (a) Explain in detail about the artificial intelligence approach for knowledge representations. CO1- U (16)

Or

(b) Describe in detail about the approaches for intelligent control architecture. CO1- U (16)

17. (a) Demonstrate OR function using Hebb net with Bipolar inputs and targets. CO2-Ana (16)

Or

(b) Demonstrate error back propagation training algorithm with the help of a flowchart. CO2-Ana (16)

18. (a) Explain the genetic algorithm for optimization problem CO3- U (16)

Or

(b) Describe the Ant Colony optimization technique with flow chart. CO3- U (16)

19.	(a)	Develop Fuzzy Inference System(FIS) using rule based components also illustrate Mamdani FIS.	CO4-	App	(16)
		Or			
	(b)	Analyze the different methods of defuzzification with an example.	CO4-	Ana	(16)
20.	(a)	Apply genetic algorithm to find the optimal Capacitor placement in distribution systems	CO5-	App	(16)
		Or			
	(b)	Briefly explain the neural network toolbox in MATLAB.	CO5-	App	(16)