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Roll No

CS-8001-CBGS

B.E. VIII Semester

Examination, December 2020

Choice Based Grading System (CBGS)

Soft Computing

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Explain Back-Propagation algorithm.
b) Explain Convolutional Neural Network and Recurrent Neural Network.
2. a) What are the application of Genetic Algorithm?
b) Explain the Genetic Algorithm cycle with example.
3. Discuss linear and non-linear SVM classifier?
4. a) Give difference between Fuzzy logic and Predicate logic.
b) What is Defuzzification? Explain with example.
5. a) With help of necessary block diagrams, compare Mamdani and sugeno fuzzy inference systems.
b) With help of examples, explain the various crossover techniques employed in genetic algorithm.

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6. a) Briefly discuss about structure and functioning of biological Brain and Neuron.
b) “Termination criterion of a genetic algorithm brings the search to a halt”. Explain various termination techniques.

7. Draw the architecture of Hopfield Network? Design Hopfield net for 4 bit bipolar pattern. The training patterns are:
I sample S_1 (1, 1, -1, -1)
II sample S_2 (-1, 1, -1, 1)
III sample S_3 (-1, -1, -1, 1) find the weight matrix and energy for 3 input samples.

8. Write short notes:
 - i) Ant colony optimization
 - ii) Bee colony optimization
 - iii) Swarm intelligence

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