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BR—89—2016

FACULTY OF COMPUTER SCIENCE

M.Sc. (Second Year) (Fourth Semester) EXAMINATION

OCTOBER/NOVEMBER, 2016

(CBCS Courses)

COMPUTER SCIENCE

Paper-CS-401

(Fuzzy System and Artificial Neural Network)

(Thursday, 17-11-2016)

Time : 2.00 p.m. to 5.00 p.m.

Time—3 Hours

Maximum Marks—75

N.B. :— (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

1. Answer the following (any *three*) : 15

- (a) Explain additional properties of alpha cuts.
- (b) Explain binary relation on single set with example.
- (c) Explain biological neuron and their artificial neuron.
- (d) Explain perceptron learning rule.
- (e) Explain recurrent network.

2. Answer the following (any *three*) : 15

- (a) Explain fuzzy compatibility relation.
- (b) Explain supervised learning rule.
- (c) Explain neural network architecture.
- (d) Explain delta learning rule.

P.T.O.

3. Solve the following (any *three*) : 15
- (a) Explain multilayer feedforward network.
 - (b) Explain Radial Basis Function (RBF).
 - (c) Explain Hopfield network.
 - (d) Explain variant in back propagations.
4. Answer the following (any *three*) : 15
- (a) Explain Boltzmann machine.
 - (b) Explain Adaptive Resonance Theory (ART).
 - (c) Explain counterpropagation network.
 - (d) Explain Reinforcement learning rule.
5. Write short notes on (any *three*) : 15
- (a) Extension principle for fuzzy set
 - (b) Fuzzy equivalence relations
 - (c) Operations on fuzzy sets
 - (d) Application in expert system
 - (e) Character and face recognition.