

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- Oct 2017

M.Tech III Semester/ Ph.D.

COURSE CODE: 17M1WEC332

COURSE NAME: COMPUTATIONAL INTELLIGENCE AND APPLICATIONS

MAX. MARKS:25

COURSE CREDITS: 3

MAX. TIME: 1:30 hr

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

- Q1 a) Explain briefly the biological neuron and relate it with neural network. [3]
 b) What is linear separability? Why can't the single layer perceptron implement an X-OR gate? [2]
- Q2 a) Explain the relevance of the learning rate parameter in B.P. algorithm. How it will affect the learning process? [3]
 b) What is the biggest difference between Widrow & Hoff's Delta Rule and the Perceptron Learning Rule for learning in a single-layer feed forward network? [2]
- Q3. a) If the net input to an output neuron is 0.64, calculate its output when the Activation function is (i) Binary sigmoid. (ii) Bipolar sigmoid. [3]
 b) What are the advantages of using hyperbolic tangent activation function instead of the sigmoid activation function? [2]
- Q4. Explain how recognition of handwritten digits is closer to a classification type problem; whereas recognition of vowels sounds in continuous speech is closer to a feature mapping type of problem. [4]
- Q5. a) Draw the architecture of Back Propagation network and elaborate the stages involved in its training [3]
 b) Using the Back propagation algorithm calculate the error function (delta value) at the output and hidden units. [3]

