

NR

Code No: A3810, A0604

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M.Tech I Semester Examinations, March/April-2011

NEURAL NETWORKS AND APPLICATIONS

(COMMON TO DIGITAL ELECTRONICS AND COMMUNICATION SYSTEMS, DIGITAL SYSTEMS AND COMPUTER ELECTRONICS)

Time: 3hours

Max. Marks: 60

Answer any five questions
All questions carry equal marks

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- 1.a) Explain the differences between biological neural networks and artificial neural networks.
- b) List and explain various applications of neural networks. [12]
2. Discuss about various neural network learning rules. [12]
3. Write and discuss about single layer continuous perception training algorithm. [12]
4. Derive the equation for weight change in output layer and hidden layer in back propagation network. [12]
5. Discuss about linear separability and the solution for EX-OR problem. Also suggest a network that can solve EX-OR problem. [12]
6. Show how the traveling salesman problem can be solved using the Hopfield model. [12]
7. Using suitable diagrams and equations explain the basic bidirectional associative memory configuration. Also describe its energy function. [12]
8. Write short notes on:
 - a) Stability and convergence
 - b) Necessary number of hidden neurons. [12]

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