

RANI RASHMONI GREEN UNIVERSITY
Post Graduate Department of Computer Science

M.Sc. Semester-IV Internal Examination 2025

Subject: Computer Science

Paper: MSCCS402 (Elective 1: Deep Learning)

Time: 1 Hours

Full Marks: 20

The figures in the margin indicate full marks

Candidate are required to give their answer in their own words as far as practicable

Group- A

Answer any four (4) questions.

5 x 4 =4

1. How does deep learning differ from the standard machine learning algorithms? Define the functionality of an artificial neuron. **3+2=5**
2. What is the usefulness of Multi-Layered-Perceptron (MLP)? Design a MLP to solve the XOR problem. **1+4=5**
3. How does back-propagation work in deep neural network? Explain gradient-descent algorithm. **2+3=5**
4. Compare and contrast *Sigmoid*, *ReLU* and *tanh* as activation functions of a multi-layered perceptron. **5**
5. Illustrate the use of *softmax function* in achieving the vector of probabilities for multi-class classification. **5**
6. Design a schematic architecture of sentiment analysis (with three classes *positive*, *negative*, and *neutral*) using multi-layered perceptron. **5**