

MSc (SS) DEGREE EXAMINATION MAY 2026
(Eighth Semester)

Branch – SOFTWARE SYSTEMS (Five Year integrated)

DEEP LEARNING

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 Find where the Back propagation algorithm is used
 - (i) Perceptron only
 - (ii) Auto encoders and Deep Neural Networks
 - (iii) KNN
 - (iv) Decision Trees
- 2 Identify the use of Adam optimizer
 - (i) Data cleaning
 - (ii) Network optimization
 - (iii) Image resizing
 - (iv) Feature selection
- 3 Choose the application for which AlexNet is mainly known for
 - (i) Image classification
 - (ii) Speech recognition
 - (iii) Text translation
 - (iv) Time series prediction
- 4 A Monte Carlo method is based on _____
 - (i) Deterministic rules
 - (ii) Random sampling
 - (iii) Gradient descent
 - (iv) Backpropagation
- 5 Find the main characteristics of Big Data
 - (i) Small size data
 - (ii) Structured data only
 - (iii) Large volume, velocity, and variety
 - (iv) Manual processing

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Define convex function with an example.
OR
b Explain the purpose of a loss function.
- 7 a Explain the saddle point problem in neural networks.
OR
b Classify the different adaptive learning rate.
- 8 a Define LeNet.
OR
b Differentiate between GRU and LSTM.

Cont...

- 9 a Explain Monte Carlo methods with applications.
OR
b Explain Linear Factor Models in deep learning.
- 10 a Discuss the role of deep learning in Big Data analytics.
OR
b Describe the applications of deep learning in Computer Vision.

SECTION -C (30 Marks)

Answer ALL questions
ALL questions carry EQUAL Marks (5 x 6 = 30)

- 11 a Compare single-layer Perceptron and Multi-Layer Perceptron architectures.
OR
b Evaluate the working of Gradient Descent and its variants in optimization problems.
- 12 a Differentiate between RMSProp and Adam optimizers.
OR
b Justify the need for Ridge and Lasso regularization in neural networks.
- 13 a Analyze the structure and properties of Convolutional Neural Networks.
OR
b Survey the applications of CNN and RNN in real-world domains.
- 14 a Assess the importance of Representational Learning in building deep models.
OR
b Classify the types of Autoencoders and explain their research significance.
- 15 a Compare deep learning approaches used in Computer Vision and Natural Language Processing.
OR
b Design a deep learning based system for IoT applications.

Z-Z-Z

END