

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI – 620015
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
B.Tech – CYCLE TEST – II
CSPE72 - DEEP LEARNING TECHNIQUES

Date: 15.10.2025

Time: 4.00 pm to 5.00 pm

Max.Marks: 20

Answer all questions

1. Why are Convolutional Neural Networks (CNNs) used in NLP, and how are they applied? How can you compare CNN within the attention paradigm? (4)
2. How do RNNs handle variable-length inputs? (1)
3. What is the role of Backpropagation Through Time (BPTT) in training RNNs, and how does it work? (3)
4. Under what conditions does a linear autoencoder act like Principal Component Analysis (PCA)? (2)
5. Explain the difference between GRU and LSTM? (2)
6. Explain the concept of a denoising autoencoder and describe its working mechanism. (4)
7. Describe the typical steps involved in greedy layer-wise pretraining using unsupervised learning for a deep architecture. (2)
8. Explain the concept of Zero-Shot Learning. (2)

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