

IV B. TECH I SEMESTER REGULAR EXAMINATIONS, NOVEMBER - 2023
DEEP LEARNING
(CSE – INTERNET OF THINGS)

Time: 3 hours

Max. Marks: 70

Note : Answer ONE question from each unit (5 × 14 = 70 Marks)

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UNIT-I

1. a) Differentiate neural networks and deep learning [7M]
- b) Why does a single perceptron cannot simulate simple XOR function? Explain how can we overcome this limitation? [7M]

(OR)

2. a) List and explain the various activation functions used in modeling of artificial neuron. Also explain their suitability with respect to applications. [7M]
- b) What do you understand by back propagation in neural networks? [7M]

UNIT-II

3. a) What is regularization? How does regularization help in reducing overfitting. [7M]
- b) Explain briefly about gradient decent algorithm. [7M]

(OR)

4. a) What is RMSProp? List the advantageous of RMSProp. [7M]
- b) Illustrate the adaptive moment estimation(ada) algorithm. [7M]

UNIT-III

5. a) Illustrate the operation of pooling layer in CNN with suitable example. [7M]
- b) Draw the architecture of GoogleNet. What about the main innovations in the GoogleNet. [7M]

(OR)

6. a) What is the purpose of segmentation in computer vision? What are the key components of a U-Net, and how do they contribute to the segmentation process? [7M]
- b) Draw the ResNet architecture. How it is different from regular deep neural network. [7M]

UNIT-IV

7. a) What is early stopping? How to implement early stopping. [7M]
- b) What is the purpose of transfer learning? Why transfer learning is better than deep learning. [7M]

(OR)

8. a) In what scenarios is group normalization preferred over other [7M]  
normalization techniques?
- b) What is dataset augmentation in the context of deep learning, and [7M]  
why is it important? When should data augmentation be used?

UNIT-V

9. a) What are the advantages of one-hot encoding in certain [7M]  
applications?
- b) Describe the general layout of Long Short Term Memory (LSTM) [7M]  
with suitable diagram.

(OR)

10. a) Explain briefly how does the Recurrent Neural Networks (RNNs) [7M]  
process data sequences.
- b) Summarize the differences between skip-gram and CBOW. [7M]

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