Code No.: R22CS58202PC | R22 | H.T.No. | | | 8 | R | | | | |

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
I–M.TECH–II–Semester End Examinations (Supply) – March 2025
DEEP LEARNING AND ITS APPLICATIONS
(CSE)

[Time: 3 Hours]   [Max. Marks: 60]

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 10 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A   (10 Marks)

1. a) What is the XOR problem in neural networks?   [1M]
   b) Define gradient-based learning.   [1M]
   c) What is the purpose of dropout in neural networks?   [1M]
   d) Define dataset augmentation.   [1M]
   e) What is the convolution operation in deep learning?   [1M]
   f) Define Pooling.   [1M]
   g) What is an autoencoder?   [1M]
   h) Define reinforcement learning.   [1M]
   i) Mention some large-scale deep learning applications.   [1M]
   j) What is natural language processing (NLP)?   [1M]

PART-B   (50 Marks)

2. How does backpropagation help in training deep networks? Explain with an example. [10M]

OR

3. Explain the historical evolution of deep learning with key contributions.   [10M]

4. Discuss various parameter norm penalties and their role in regularization.   [10M]

OR

5. Explain different methods of parameter sharing and their benefits in deep networks. [10M]

6. Explain how CNNs contribute to deep learning applications.   [10M]

OR

7. Discuss the history and evolution of convolutional networks.   [10M]

8. Explain the role of maximum entropy principles in unsupervised learning.   [10M]

OR

9. Explain how autoencoders are used in deep unsupervised learning.   [10M]

10. Discuss speech recognition techniques using deep learning.   [10M]

OR

11. Explain how NLP models use deep learning for text processing.   [10M]

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