CBCS SCHEME

USN ☐☐☐☐☐☐☐☐☐☐

20SCS/SAM31

Third Semester M.Tech. Degree Examination, Feb./Mar.2022
Deep Learning

Time: 3 hrs.　　　　　　　　　　　　　　　　　　　　　　　　　Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1　a. Define Machine Learning. Explain the different types of ML algorithm. **(10 Marks)**
　　b. Explain in detail about the supervised learning approach by taking suitable example. **(10 Marks)**

OR

2　a. Explain capacity, overfitting and underfitting. **(09 Marks)**
　　b. Discuss the classification procedure using KNN algorithm. Mention the advantages and disadvantages. **(08 Marks)**
　　c. What is the motivation for deep learning? **(03 Marks)**

Module-2

3　a. Explain the working of deep forward networks. **(10 Marks)**
　　b. What is Regularization? How does Regularization help in reducing overfitting? **(10 Marks)**

OR

4　a. Explain briefly about gradient descent algorithm. **(10 Marks)**
　　b. Discuss the working of the back propagation algorithm. **(10 Marks)**

Module-3

5　a. Explain in detail the components of CNN model. **(10 Marks)**
　　b. Explain Adaptive Learning rate related to convolutional Neural networks. **(10 Marks)**

OR

6　a. What are the challenges in Neural network optimization? **(10 Marks)**
　　b. Explain briefly variants of the CNN model. **(10 Marks)**

Module-4

7　a. Explain briefly how does the Recurrent Neural Networks (RNNs) process data sequences. **(10 Marks)**
　　b. Discuss about Bidirectional Recurrent Neural Networks. **(10 Marks)**

OR

8　a. How does the sequence to sequence model works? Explain. **(10 Marks)**
　　b. Explain Long Short-Term Memory (LSTM) working principles along with all the equations. **(10 Marks)**

Module-5

9　a. Discuss about some debugging strategies, when a machine learning system performs poorly. **(10 Marks)**
　　b. What is Natural Language Processing? Explain different steps involved in NLP. **(10 Marks)**

OR

10　a. What is speech recognition? Explain the different types of speech recognition systems. **(10 Marks)**
　　b. Explain the different performance metrics used for classification problem. **(10 Marks)**

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