MIT | Academy of Engineering

(An Autonomous Institute Affiliated to Savitribai Phule Pune University)

Reg. No:

Mid Semester Examination - October 2024

Programme	**Electronics and Telecommunication Engineering**	Date of Examination	**04-10-2024**
Course Code	**ET481T**	Semester	**VII**
Course Name	**DEEP LEARNING**	Total No. of Questions	**6**
Class	**FINAL YEAR BTECH**	Pattern	**2019 PATTERN REGULAR/BACKLOG**
Time	**2 hours**	Max. Marks	**50**

Instructions To Candidates

1. Assume suitable data wherever necessary
2. Non programmable scientific calculators are allowed.
3. Black figures to the right indicate full marks.

Section - I
Answer all Questions (3 × 8 Marks)

*M - Marks

Q.No	Question	*M	CO	BL
01.	a) Why we are using optimization algorithms in ML models **[2 M]**. b) Explain any two optimization algorithms along with diagrams and equations. **[3 marks for each optimization algorithms: Figure: 1M, Explanation with equation 2M]**	8	1	3
02.	a) Describe Bias Variance tradeoff with the help of diagram **[Diagram: 2M, Explanation: 4M]** b) Difference between overfitting and underfitting **[2M]**	8	1	2
03.	Explain the importance of striding and pooling with the help of an example **[4M each. Correct Example: 2M, Explanation: 2M]**	8	1	2

Section - II
Answer any 2 Questions (2 × 13 Marks)

*M - Marks

Q.No	Question	*M	CO	BL

04.	a) Explain how data augmentation helps improve the performance of DL models **[3M]** b) Here the area occupied by the dog is different in each image. Because of this huge variation in the location of the information, choosing the **right kernel size** for the convolution operation becomes tough. In this case, which convolutional architecture is best suitable? **[10M: Correct Identification: 1M, Architecture Diagram: 4M, Explanation:5M]** 	13	2	4
05.	a) Explain the architecture of VGG-16 and how it differs from earlier CNN architectures. **[Diagram: 3M, Explanation: 4M, Differentiation: 3M]** b) Write any 3 advantages of transfer learning. **[3M]**	13	2	3
06.	a) Describe MobileNet architecture in detail with required Diagram. **[8M, Diagram: 3M, Explanation: 5M]** b) Explain Depthwise seperable convolution **[5M]**	13	2	2

BL-Bloom's Taxonomy Levels - (1.Remembering, 2.Understanding, 3.Applying, 4.Analysing, 5.Evaluating, 6.Creating)

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