[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 7161 **L**

Unique Paper Code : 6333490012

Name of the Paper : Foundations of Deep Learning (NEP UGCF)

Name of the Course : **B.VOC (WEB DESIGNING)**

Semester : VIII

Duration : 3 Hours Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. All Questions in Section-A are compulsory.
3. Attempt any four questions from Section-B.
4. Parts of a question should be attempted together.

Section A

Q1.	i.	Why is Deep Learning suitable for handling large-scale data problems?	5
	ii.	What is overfitting? Explain two techniques to reduce it.	5
	iii.	Define convolution filter and explain feature extraction in CNN.	5
	iv.	Define LSTM and explain why it solves RNN limitations.	5
	v.	Explain sparse Auto encoder and its practical importance.	5
	vi.	What are evaluation metrics and why are they required?	5

Section B

Q2.	(a)	Explain Logistic Regression mathematically with classification examples.	8
	(b)	Compare Gradient Descent, Adam, and Adagrad optimizer.	7

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Q3.	(a)	Explain deep neural network architecture and forward propagation..	8
	(b)	Discuss regularization methods such as dropout and early stopping.	7
Q4.	(a)	Explain the working of CNN with a suitable image classification example.	8
	(b)	Why does CNN require fewer parameters than ANN for image tasks?	7
Q5.	(a)	Explain sequence modeling using RNN and LSTM networks	8
	(b)	Compare RNN, LSTM, and GRU in sequence learning.	7
Q6.	(a)	Explain Autoencoders and their role in dimensionality reduction..	8
	(b)	Discuss practical applications of GANs and VAEs.	7
Q7.	(a)	) Explain dataset splitting and performance evaluation in Deep Learning.	8
	(b)	Write notes on Transfer Learning and Transformers.	7