Register No. | | | | | | | | | | | |

SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

AN AUTONOMOUS INSTITUTION

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

INTERNAL ASSESSMENT – III

Six Semester

B.Tech-Artificial Intelligence and Data Science

19AD602-DEEP LEARNING

Regulations 2019

Duration: 1 Hours 30 Minutes **Date : .04.2025**
Session: FN **Maximum : 50 Marks**

Answer ALL questions

PART A - (5 X 2 = 10 marks)

	Questions	M	CO	BL	Company Name
1.	Define generalization in the context of neural networks and explain why it is important.	2	CO-4	L -1	Meta
2.	How does a Recurrent Neural Network Language Model predict the next word in a sequence?	2	CO-4	L -1	Apple
3.	What is the purpose of a spatial transformer module in a convolutional neural network?	2	CO-4	L -2	Google
4.	Compare object detection and image classification in terms of functionality and output.	2	CO-5	L -2	Amazon
5.	List common challenges encountered in face recognition systems.	2	CO-5	L -2	Apple

PART B - (2 X 13 = 26 marks)

6.	(a)	Describe the working of WaveNet and its applications in speech synthesis. How does it differ from traditional audio generation models?	13	CO-	L-3	Tesla
		OR				
	(b)	Explain the architecture and impact of ImageNet in deep learning. How has it contributed to advancements in computer vision?	13	CO-	L-3	Apple
7.	(a)	(i) Analyze how regularization techniques improve generalization in content classification models	5	CO-	L-4	Meta
		(ii) How can neural networks learn to apply spatial transformations to inputs or feature maps in a differentiable manner?	7	CO-	L-4	Google
		OR				
	(b)	Explain Word2Vec in detail, including its two main models (CBOW and Skip-gram). How does it help in vector representation of words?	13	CO-	L-3	Netflix

PART C – (1 x 14 = 14 Marks)

8.	(a)	How can a deep learning model be designed or enhanced to maintain high accuracy in joint detection and analyze how simultaneous detection of objects and actions improves understanding. What are the computational trade-offs?	14	CO-	L-4	Facebook

OR

(b)	How can deep learning models be scaled to handle face recognition across millions of identities while ensuring low latency and high precision, especially in real-time applications like airport security or event access control?	14	CO-	L-4	Apple

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