R20

Code No: R20A6610

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech I Semester Supplementary Examinations, April 2025

Deep Learning

(CSE, CSE-AIML, CSE-DS, CSE-IOT, B.Tech-AIDS & B.Tech-AIML)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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			BCLL	CO(s)	Marks
		SECTION-I			
1	***A***	What is deep learning? Discuss its importance	**L2**	**CO-I**	**[7M]**
	B	Why does a single perceptron cannot simulate simple XOR function? Explain how can we overcome this limitation?	**L2**	**CO-I**	**[7M]**
		OR			
2	***A***	What do you understand by back propagation in neural networks?	**L1**	**CO-I**	**[7M]**
	B	List out and explain in briefly representation power of feed forward network	**L2**	**CO-I**	**[7M]**
		SECTION-II			
3	***A***	What is pooling on Convolution Neural Networks (CNN), and how does it work	**L1**	**CO-II**	**[7M]**
	B	Draw the architecture of GoogleNet. What about the main innovations in the GoogleNet	**L3**	**CO-II**	**[7M]**
		OR			
4	***A***	What is dropout in the context of deep neural networks? What is the impact of dropout during the training phase of a neural network?	**L1**	**CO-II**	**[7M]**
	B	Explain various types of activation functions.	**L3**	**CO-II**	**[7M]**
		SECTION-III			
5	***A***	Discuss vanishing gradient and exploding gradient.	**L2**	**CO-III**	**[7M]**
	B	Illustrate Long Short Term Memory(LSTM)working principles along with all the equations	**L3**	**CO-III**	**[7M]**
		OR			
6	***A***	Prepare an example of Encoder- Decoder or sequence-to-sequence RNN architecture	**L4**	**CO-III**	**[7M]**
	B	In the LSTM model, explain exactly how the cell state is updated from C_{t-1} to C_t, using the previous stateh_{t-1} and the current input x_t.	**L2**	**CO-III**	**[7M]**
		SECTION-IV			
7	***A***	Describe the typical architecture of a generator network in a GAN.	**L2**	**CO-IV**	**[7M]**
	B	Explain the architecture of a discriminator network in a GAN.	**L2**	**CO-IV**	**[7M]**

OR

8	***A***	What are some of the advantages of using GANs compared to other generative models?	**L4**	**CO-IV**	**[7M]**
	B	What are the potential applications of GANs in natural language processing and text generation?	**L2**	**CO-IV**	**[7M]**

SECTION-V

9	***A***	Explain auto encoder architecture	**L2**	**CO-V**	**[7M]**
	B	What are the advantages of using auto-encoders for feature extraction compared to GANs?	**L4**	**CO-V**	**[7M]**

OR

10	***A***	State the applications of auto encoders. Explain how the dimensionality reduction feature of auto encoder is useful in information retrieval task?	**L2**	**CO-V**	**[7M]**
	B	What are the fundamental differences between auto-encoders and Generative Adversarial Networks (GANs)?	**L2**	**CO-V**	**[7M]**

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