R20

Code No: R20A6610

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech I Semester Supplementary Examinations, April 2024

Deep Learning

(CSE-AIML, CSE-DS & CSE-IOT)

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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SECTION-I

1 ***A*** Explain the structure of an artificial neuron? List any three differences between artificial and biological neuron. **[7M]**

B Describe the XOR learning approach using multi-layer perceptron. **[7M]**

OR

2 ***A*** How do the weights are updated in deep neural networks? Explain the algorithm for updating weights in network. **[7M]**

B Demonstrate with a neat sketch the multi-layer feed forward neural network. **[7M]**

SECTION-II

3 ***A*** What are the building blocks of CNN? Explain with a neat diagram. **[7M]**

B Find the convolution matrix for the following input vector using a 3*3 kernel. With stride=1 and no padding. **[7M]**

Input – Image

1	0	1	1	0	1
0	0	1	1	1	1
1	0	1	1	0	0
1	1	1	0	1	1
0	1	1	0	0	0
1	0	0	1	1	1

Kernel

-1	-2	-1
0	0	0
1	2	1

OR

4 ***A*** Why do the pooling layer is required in CNN? Describe with example any three pooing layers. **[7M]**

B How do the layers are defined in ResNet? Illustrate the working process of it. **[7M]**

SECTION-III

5 ***A*** What is RNN? List any four applications of RNN. **[6M]**

B Explain the working process of LSTM networks. **[8M]**

OR

6 ***A*** What is sequential data? How it is analysed using deep learning? Explain with an example. **[6M]**

B Demonstrate with a neat sketch working of Gated Recurrent Unit. How it differs from LSTM network. **[8M]**

SECTION-IV

7 ***A*** What are Generative Adversarial Networks? List any four applications of it. **[6M]**

B Differentiate between generator and discriminator in the process of GAN implementation. **[8M]**

OR

8	***A***	Explain on what principles GANs are working in deep neural networks.	**[7M]**
	B	Illustrate with a neat diagram GAN architecture.	**[7M]**

SECTION-V

9	***A***	Demonstrate with a neat sketch the working process of auto encoders.	**[7M]**
	B	"Can we combine auto with GANs in designing deep neural network?' Justify with an example.	**[7M]**

OR

10	***A***	Explain how an auto encoder differ from GANs in the design of deep neural network.	**[7M]**
	B	What is a hyper parameter? Describe the various hyper parameters in the construction of auto encoder model.	**[7M]**

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