VR20 Reg. No: 208W1A1299

VELAGAPUDI RAMAKRISHNA

SIDDHARTHA ENGINEERING COLLEGE

(AUTONOMOUS)

IV/IV B.Tech. DEGREE EXAMINATION, NOVEMBER - 2023

Seventh Semester

INFORMATION TECHNOLOGY

20IT7301 DEEP LEARNING

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

Part-A is compulsory

Answer One Question from each Unit of Part - B

Answer to any single question or its part shall be written at one place only

PART-A

10 x 1 = 10M

1.	a.	What is auto-association task in neural networks?	**(CO1 K1)**
	b.	Write the mathematical formula for summation function.	**(CO1 K1)**
	c.	Define over fitting.	**(CO1 K1)**
	d.	What is feature set? Give one example.	**(CO2 K1)**
	e.	Render simple architecture for auto encoder.	**(CO2 K1)**
	f.	Define max pooling.	**(CO2 K1)**
	g.	Render model for basic RNN.	**(CO3 K1)**
	h.	Specify layers in deep CNN	**(CO3 K1)**
	i.	Give two applications for Generative adversial neural network.	**(CO4 K1)**
	j.	Define conditional Generative adversial neural network.	**(CO4 K1)**

20IT7301

PART-B

4 x 15 = 60M

UNIT-I

2. a. Describe architecture of feed forward neural networks. (CO1 K2) 8M

   b. Discuss the importance of training, validation and testing sets in modeling neural networks. (CO1 K3) 7M

(or)

3. a. Define linear neuron. List limitations of linear functions. (CO1 K2) 7M

   b. Explain and analyze delta rule with example. (CO1 K3) 8M

UNIT-II

4. a. Explain about CNN architecture. (CO2 K3) 8M

   b. Elaborate on CNN for NLP and Time Series. (CO2 K3) 7M

(or)

5. a. Explain about sparsity in auto encoders. (CO2 K3) 7M

   b. Describe how effective dimensionality reduction can be done using auto encoders. (CO2 K3) 8M

UNIT-III

6. a. Elaborate on sequence to sequence architectures in auto encoders. (CO3 K3) 7M

   b. Discuss on computational graphs using in sequence modeling. (CO2 K3) 8M

(or)

7. a. Describe about deep RNN for identifying hand written digits as case study. **(CO3 K3) 8M**

   b. Explain about Forward Propagation in Deep Networks and mathematical notations of hyper parameters. **(CO3 K3) 7M**

UNIT-IV

8. a. Discuss on various attention mechanisms applicable for recurrent models. **(CO4 K3) 8M**

   b. Illustrate steps required to generate image data using generative adversarial networks. **(CO4 K4) 7M**

(or)

9. a. Machine translation is challenging task in implementing real time use case. Justify on this statement with suitable examples. **(CO4 K4) 8M**

   b. List out various challenges of deep learning and neural networks. **(CO4 K3) 7M**

* * *