R22 Regulation *Subject code:4E6HC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VI Semester Regular/Supplementary Examinations, April 2026

DEEP LEARNING AND NEURAL NETWORKS

(CSE(DS))

Maximum Marks: 60 Date:18.04.2026 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X1M=10 Marks)		Marks	CO	Bloom Tx
1.a)	What is bias?	1M	1	1
b)	Recall machine learning.	1M	1	1
c)	What is dropout?	1M	2	2
d)	Define deep learning.	1M	2	2
e)	Define pooling.	1M	3	2
f)	Tell about convolution neural network.	1M	3	2
g)	Define Recurrent neural network.	1M	4	2
h)	What is encoder?	1M	4	2
i)	State auto encoder.	1M	5	2
j)	What do you mean by overcomplete auto-encoder?	1M	5	2

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	Bloom Tx
2	a) State and explain any one of the supervised learning algorithm. b) Explore capacity model with a neat diagram.	5M 5M	1	2 3
	OR			
3	Explain about Over fitting and under fitting with neat diagram.	10M	1	3
4	a) Write about feed forward neural networks. b) Illustrate learning XOR function with feed forward networks.	5M 5M	2	2 3
	OR			
5	a) What is Gradient based learning? Explain. b) Explore Rectified Linear Units activation function.	5M 5M	2	3 3
6	a) Explain convolution operation for extracting features. b) Explain the need of pooling layer in convolution neural networks.	5M 5M	3	2 2
	OR			

7	a) Explain strided convolution with a diagram. b) Write about data types in convolution networks.	5M 5M	3	3 2
8	a) What is RNN? Explain how sequential data is processed through RNN. b) Explain the architecture of LSTM..	5M 5M	4	2 3
	OR			
9	a) What is bidirectional RNN? Elaborate how forward and backward moves are combined in bidirectional RNN. b) Explore how encoder-to-decoder sequence-to-sequence RNN architecture is designed to generate output sequences.	5M 5M	4	2 3
10	a) List and explain applications of auto encoders. b) Distinguish between standard auto encoders and denoising auto encoders.	5M 5M	5	2 2
	OR			
11	Write about a) Under complete auto encoders b) Stochastic auto encoders	5M 5M	5	3 3

200