R20 Regulation *Subject code: 3E6EL*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, November 2025

DEEP LEARNING

(CSE)

Maximum Marks: 70 Date: 15.11.2025 Duration: 3 hours

Note: 1.This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 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 (10X2M=20 Marks)		Marks	CO	BTL
1	Write about ReLu activation function.	2M	1	L1
2	What is meant by bootstrap aggregating?	2M	1	L1
3	What is a contour map.	2M	2	L1
4	What is the difference between convex and non convex optimization?	2M	2	L1
5	What is a Leaky Unit?	2M	3	L1
6	What is a deep RNN?	2M	3	L1
7	What is transfer learning?	2M	4	L1
8	What is greedy layer wise unsupervised pretraining?	2M	4	L1
9	What is separation and d-separation?	2M	5	L1
10	What is energy function?	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	a) Discuss in brief about different cost functions in Gradient –Based learning. b) Write Meta-Algorithm using early stopping to determine at what objective value we start to overfit, then continue training until that value is recorded.	5M 5M	1	L2
	OR			
12	a) Explain Back Propogation Algorithm. b) What are the challenging issues motivating deep learning.	5M 5M	1	L2
13	a) Explain algorithms with adaptive learning rates. b) Explain SGD with momentum.	5M 5M	2	L2
	OR			
14	a) What are the different data types used with CNNs? b) Discuss the Neuroscientific basis for CNNs.	5M 5M	2	L2
15	a) Discuss the challenge of long term dependencies. b) Discuss LSTM.	5M 5M	3	L2
	OR			

16	Explain the application of Deep learning: Natural Language processing.	10M	3	L2
17	a) Explain representational power, layer size and depth. b) Explain learning manifolds with Autoencoders.	5M 5M	4	L2
	OR			
18	Explain semi supervised disentangling of casual factors.	10M	4	L2
19	a) Explain converting between undirected and directed graphs. b) Explain factor graphs.	5M 5M	5	L2
	OR			
20	Explain the deep learning approach to structured probabilistic models?	10M	5	L2

8