R20 Regulation *Subject code:3E6EL*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, May 2025

DEEP LEARNING

(CSE)

Maximum Marks: 70 Date: 25.06.2025 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	Differentiate between AI, ML and DL.	2M	1	L1
2	What are the advantages of Batch normalization?	2M	1	L1
3	What is random weight initialization?	2M	2	L1
4	What is a saddle point?	2M	2	L1
5	What is a bidirectional RNN?	2M	3	L1
6	What is model compression in solving deep learning applications?	2M	3	L1
7	What is transfer learning?	2M	4	L1
8	What are two extreme forms of transfer learning?	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) Illustrate learning XOR with an example. b) Explain Gradient Based Learning.	5M 5M	1	L2
	OR			
12	a) Explain the Architecture design of neural networks. b) What are the salient features of DL that addresses the classical ML limitations?	5M 5M	1	L2
13	Discuss how learning differs from pure optimization.	10M	2	L2
	OR			
14	a) Write the motivation behind CNNs. b) Explain Pooling operation.	5M 5M	2	L2
15	a) Explain Recurrent Neural Networks. b) Explain Bidirectional LSTM.	5M 5M	3	L2
	OR			
16	Explain the deep learning application in Computer vision.	10M	3	L2
17	a) Explain stochastic encoders and decoders.	5M	4	L2

	b) Explain Denoising Autoencoders.	5M		
	OR			
18	Explain learning Manifolds with autoencoders.	10M	4	L2
19	a) Explain converting between undirected and directed graphs. b) Explain factor graphs.	5M 5M	5	L2
	OR			
20	a) Explain the challenges of unstructured modeling. b) Explain directed and undirected models.	5M 5M	5	L2