R20 Regulation *Subject code:3P7HB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VII Semester Supplementary Examinations, November 2025

DEEP LEARNING

(CSE(DS))

Maximum Marks: 70 Date: 24.11.2025 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	What is Synthesis and Sampling?	2M	1	L1
2	What is Density Estimation	2M	1	L1
3	What is Learning XOR?	2M	2	L1
4	What is Sparse Representation?	2M	2	L1
5	What is Difference between Parameter Tying and Parameter Sharing?	2M	3	L1
6	What is Stochastic Gradient descent?	2M	3	L1
7	What is Ad grad Algorithm?	2M	4	L1
8	What are Deep Recurrent Networks?	2M	4	L1
9	Explain the Encoder and Decoder Sequence?	2M	5	L1
10	What is Transfer Learning?	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	a) Explain Basic Learning Algorithms in Machine Learning? b) Explain about Estimators, Bais and Variance in detail.	5M 5M	1	L2
	OR			
12	a) Explain Back-Propagation in Deep Learning? b) Explain Regularization and Under-Constrained Problems in Deep Learning?	5M 5M	1	L2
13	a) Explain Maximum Likelihood Estimations in Machine Learning? b) Describe in detail the Overfitting and Underfitting in ML?	5M 5M	2	L2
	OR			
14	a) Explain about Parameter Tying and Parameter Sharing b) Explain about Manifold Tangent Classifier in Deep Learning.	5M 5M	2	L2
15	a) Explain Briefly about Parameter Initialization strategies in Training Deep Models? b) Explain Basic Algorithms in Training Deep Models.	5M 5M	3	L2
	OR			

16	a) What are the Basic Convolution Functions in CNN? b) Discuss the Methods to Approximate Second-Order Methods for Training Deep Models.	5M 5M	3	L2
17	a) Explain about Recurrent Neural Networks. b) Write the Applications of Natural Language Processing.	5M 5M	4	L2
	OR			
18	a) Explain about Explicit Memory in RNN. b) Explain about Echo State Networks in CNN.	5M 5M	4	L2
19	a) Explain about Learning Manifolds with Autoencoders b) Discuss in detail the Predictive Sparse Decomposition	5M 5M	5	L2
	OR			
20	a) Explain about the deep Learning approach to Structured Probabilistic Models? b) Explain about the Transfer Learning and Domain Adaptation	5M 5M	5	L2