



R20 Regulation

Subject code: 3E6EL

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Regular/Supplementary Examinations, July 2024

DEEP LEARNING (COMPUTER SCIENCE & ENGINEERING)

Maximum Marks: 70

Date:30.07.2024 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 which carries 10M.
 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)		CO	Bloom Tx
1	What is Gradient-Based Learning?	1	Remembering
2	Define Back-Propagation.	1	Understanding
3	What is Adaptive Learning?	2	Remembering
4	Define Random Features.	2	Remembering
5	What is Echo State Networks?	3	Remembering
6	Illustrate Multiple Time Scales.	3	Remembering
7	What is Stochastic Encoders?	4	Understanding
8	Define Stochastic Encoders.	4	Remembering
9	What is Unstructured Modeling?	5	Understanding
10	Illustrate Structured Modeling.	5	Remembering

Part-B

Answer All the following questions. (5X10M=50Marks)			
11	A. Explain the intuition behind Gradient Descent algorithm. (5) B. Describe the backpropagation algorithm for multilayer perceptron? (5)	1	Remembering
OR			
12	A. Discuss the penalty method for constrained optimization. (5) B. What is meant by noise robustness in deep learning? (5)	1	Analyzing
13	A. What are the major challenges in neural network optimization? (5) B. Discuss the optimization algorithm that is commonly used in deep learning. (5)	2	Remembering
OR			
14	A. Why would you want to add a max pooling layer rather than a convolutional layer with the same stride? (5) B. Present the principles of convolutional neural networks. (5)	2	Analyzing
15	A. List the advantages that unfolding a computational graph offer. (5) B. What challenges do traditional RNNs face when learning long range dependencies? (5)	3	Applying

	OR		
16	A. What are leaky units for multiple time scales? (5) B. Discuss the problem of long-term dependencies in RNN. (5)	3	Analyzing
17	A. List the differences between overcomplete and undercomplete autoencoders. (5) B. How is greedy layer wise unsupervised pretraining is used in representation learning? (5)	4	Analyzing
	OR		
18	A. Mention the limitations of semi-supervised learning. (5) B. Compare supervised and unsupervised learning in deep learning. (5)	4	Analyzing
19	A. How challenges are used to increase in unstructured data present for businesses? (5) B. Describe the common ways in which graphical models are commonly used. (5)	5	Applying
	OR		
20	A. Discuss the advantages and disadvantages of structural models. (5) B. Give an account of the probabilistic methods in deep learning. (5)	5	Analyzing