R20 Regulation *Subject code:* **3E6EL**

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, February 2024

DEEP LEARNING

(CSE)

Maximum Marks: 70 Date:24.02.2024 **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 the motivation behind deep learning?	CO1	L1
2	List out the types of data augmentation.	CO1	L1
3	What are the challenges in neural network optimization?	CO2	L1
4	Which algorithm is best for CNN?	CO2	L1
5	Is BERT a bidirectional RNN?	CO3	L1
6	Define speech recognition.	CO3	L1
7	What are auto-encoders used for in deep learning?	CO4	L1
8	What is greedy layer-wise training?	CO4	L1
9	Can deep learning be applied to both structured and unstructured data?	CO5	L1
10	Why deep learning for structured data?	CO5	L1

Part-B

Answer All the following questions. (5 X10M=50Marks)			
11	A. What are the principles of back propagation algorithm? B. Write short notes on gradient-based learning. [5+5]	CO1	L2 L2
	OR		
12	A. What is semi-supervised learning? Explain with an example. B. How does L2 regularization prevent over fitting? [5+5]	CO1	L2 L2
13	A. How learning differs from pure optimization challenges in neural network optimization? B. What are the algorithms for optimization in deep learning? [5+5]	CO2	L4 L4
	OR		
14	A. Does pooling come before or after convolution? B. What are the basic components of convolutional neural network? [5+5]	CO2	L2 L2

15	A. Discuss about encoder and decoder architecture in deep learning? B. What are the difference between echo state network and liquid state machine? [5+5]	CO3	L2 L4
	OR		
16	A. What is the difference between CNN and recursive neural network? B. What is natural language processing? Give examples. [5+5]	CO3	L4 L2
17	A. Explain domain adaptation with suitable example. B. Briefly explain about distributed representation in neural networks. [5+5]	CO4	L2 L2
	OR		
18	A. Describe the use cases of autoencoders. B. Discuss about learning manifolds with auto encoders. [5+5]	CO4	L2 L2
19	A. How would you describe a deep learning model? Give example. B. Explain data dependence with example. [5+5]	CO5	L2 L2
	OR		
20	A. What is the difference between inference and prediction in deep learning? B. Draw and explain probabilistic model structure. [5+5]	CO5	L2 L2