*R20 Regulation* *Subject code:3P7HB*

# TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

## B.Tech VII Semester Regular Examinations, November 2023

## DEEP LEARNING

(CSE (DATA SCIENCE)

***Maximum Marks: 70*** Date:11.12.2023 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) | Bloom Tx |
|---|---|---|
| 1 | Write a short note on Overfitting and Underfitting. | L1 |
| 2 | List out the Challenges to Motivate Deep Learning. | L1 |
| 3 | Explain XOR operation. | L1 |
| 4 | Justify shortly about application of Dataset Augmentation various tasks. | L1 |
| 5 | What is meant by convolution in Deep Learning? | L1 |
| 6 | List three stages of a convolutional network. | L1 |
| 7 | Briefly discuss about echo state networks. | L1 |
| 8 | Point out two advantages of introducing depth in Deep recurrent Networks. | L1 |
| 9 | List out the Applications of Autoencoders. | L1 |
| 10 | What is Representational Power. | L1 |

Part-B

| | Answer All the following questions. (5X10M=50Marks) | |
|---|---|---|
| 11 | A. Describe Stochastic Gradient Descent. (5 Marks)<br>B. How you will justify an unsupervised learning algorithm. (5 Marks) | L3<br>L2 |
| | OR | |
| 12 | A. Develop short notes on following with respect to deep learning with examples.<br>i. Estimator ii. Bias and Variance (6 Marks)<br>B. Explain Bayesian Statistics. (4 Marks) | L3<br><br>L2 |
| 13 | A. Explain in details about Adversarial Training Tangent Distance. (5 Marks)<br>B. Write short notes on Dataset Augmentation. (5 Marks) | L2<br>L1 |
| | OR | |
| 14 | A. Describe Back Propagation algorithm. (5 Marks)<br>B. Explain regularization for deep learning. (5 Marks) | L3<br>L2 |
| 15 | Explain the convolution operations in convolutional networks. (10 Marks) | L2 |
| | OR | |
| 16 | Describe Pooling with any one suitable example. (10 Marks) | L2 |

| | | |
|---|---|---|
| 17 | Explain Recurrent Neural Network and bidirectional RNN. (10 Marks) | L2 |
| | OR | |
| 18 | Explain Encoder-decoder sequence-to-sequence architectures. (10 Marks) | L2 |
| 19 | A. Explain about Layer Size and Depth in detail. (5 Marks)<br>B. Justify Regularized Autoencoders. (5 Marks) | L2<br>L5 |
| | OR | |
| 20 | A. What is Denoising Autoencoders and how it will be useful in deep learning. (5 Marks)<br>B. Discuss briefly Stochastic Encoders and Decoders. (5 Marks) | L2<br>L2 |