Roll No											

PRESIDENCY UNIVERSITY
BENGALURU

SET B

SCHOOL OF ENGINEERING
END TERM EXAMINATION - JAN 2024

Semester : Semester VII - 2020
Course Code : CSE3010
Course Name : Deep Learning Techniques
Program : B.Tech.

Date : 03-JAN-2024
Time : 9:30AM - 12:30 PM
Max Marks : 100
Weightage : 50%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.
(iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS **5 X 2M = 10M**

1. Mention the activation function leading to Vanishing Gradient Descent problem and why
(CO1) [Knowledge]
2. Define Feature Map in the content of convolutional neural networks.
(CO2) [Knowledge]
3. Define Deep Belief Network
(CO3) [Knowledge]
4. List the advantages of using restricted Boltzmann machine.
(CO4) [Knowledge]
5. Define Generative Adversarial Networks (GANs)
(CO4) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS **5 X 10M = 50M**

6. List and explain the various activation functions used in modeling of artificial neuron. Also explain their suitability with respect to applications
(CO1) [Comprehension]

7. Explain Recurrent Neural Network and how it helps in time series prediction.

(CO2) [Comprehension]

8. Justify the advantage of auto encoder over principal component analysis for dimensionality reduction

(CO3) [Comprehension]

9. Describe how Boltzmann machine may be applied to the task of reconstructing an image from an predefined set when this image is presented in a noisy form to the network.

(CO3) [Comprehension]

10. Train the Hopfield neural network for the vectors x1[1 1 1 1], x2=[1 -1 1 -1] with the given initial weight matrix and test the neural network for the vectors x3=[1 -1 -1 -1], and x4=[1 -1 1 1].

x	-1	-1	-1
-1	x	1	1
-1	1	x	1
-1	1	1	x

(CO4) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS **2 X 20M = 40M**

11. Describe Gated Recurrent Unit (GRU) and explain how it differes from an LSTM cell.

(CO4) [Application]

12. Justify whether I can use generative adversarial network (GAN) for predicting time series.

(CO4) [Application]