Printed Page:-04 Subject Code:- ACSML0602

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: VI - THEORY EXAMINATION (2023 - 2024)

Subject: Deep Learning

Time: 3 Hours Max. Marks: 100

General Instructions:

IMP: *Verify that you have received the question paper with the correct course, code, branch etc.*

1. This Question paper comprises of three Sections -A, B, & C. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.

2. Maximum marks for each question are indicated on right -hand side of each question.

3. Illustrate your answers with neat sketches wherever necessary.

4. Assume suitable data if necessary.

5. Preferably, write the answers in sequential order.

6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION-A 20

1. Attempt all parts:-

1-a. For a large k value the k-nearest neighbor model becomes _____ and _____ (CO1) 1

(a) linear regression

(b) K means clustering

(c) naïve bayes

(d) All of the above..

1-b. For a neural network, which one of these structural assumptions is the one that most affects the trade-off between underfitting and overfitting (CO1) 1

(a) Decrease, Decrease

(b) ncrease, Decrease

(c) Decrease, Increase

(d) Increase, Increase

1-c. How many layers of Deep learning algorithms are constructed (CO2) 1

(a) 3

(b) 4

(c) 2

(d) 5

1-d. _____ is Limitation of deep learning (CO2) 1

(a) Obtain huge training datasets

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(b) Data labeling
(c) None of the above
(d) All of above

1-e. In CNN, having max pooling always decrease the parameters (CO3) 1

(a) True
(b) FALSE
(c) Can be true and false
(d) Can not say

1-f. Automated vehicle is an example_____ (CO3) 1

(a) Supervised learning
(b) Unsupervised learning
(c) Active learning
(d) Reinforcement learning

1-g. RNN can memorize previous inputs (CO4) 1

(a) Due to their external memory
(b) RAM
(c) internal memory
(d) ROM

1-h. Music Generation and Image Captioning are the examples of (CO4) 1

(a) One-to -one RNN
(b) One-to-Many RNN
(c) Many-to-One RNN
(d) Many-to-many RNN

1-i. Autoencoders are trained using _____. (CO5) 1

(a) Feed forward
(b) feed back ward
(c) back propogation
(d) They do not require Training

1-j. Autoencoders cannot be used for Dimensionality Reduction.es of _____. (CO5) 1

(a) Correct
(b) can not say
(c) Incorrect
(d) none of these

2. Attempt all parts:-

2.a. Disscuss about bias-variance trade-off (CO1) 2

2.b. Explain flattening layer in CNN architecture (CO2) 2

2.c. Discuss,Yolo is better for object detection (CO3) 2

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2.d.	Write down vanishing gradient phenomenon in RNNs. (CO4)	2
2.e.	Define Variational Autoencoders (CO5)	2
SECTION-B		30
3. Answer any five of the following:-		
3-a.	Elaborate perception in deep learning (CO1)	6
3-b.	Define delta rule. (CO1)	6
3-c.	Elaborate feed forward in Convolution Neural Network (CO2)	6
3-d.	Give some examples of classification text (CO2)	6
3.e.	Draw and explain the architecture of convolutional network. (CO3)	6
3.f.	Define RNN and its uses. (CO4)	6
3.g.	How can Neural Networks be Unsupervised (CO5)	6
SECTION-C		50
4. Answer any one of the following:-		
4-a.	Explain the three-layered neuron architecture. (CO1)	10
4-b.	Generate OR function using McCulloch –pitts neuron model with threshold T=3 , w1=3,and w2=3. (CO1)	10
5. Answer any one of the following:-		
5-a.	List some common problems faced while implementing a deep learning model for image classification (CO2)	10
5-b.	Differenciate between Convolutional Neural Networks (CNN) and Recurrent Neural Networks (RNN) and in which cases would use each one (CO2)	10
6. Answer any one of the following:-		
6-a.	Differentiate between a convolutional layer and an inception module in a Google net network architecture (CO3)	10
6-b.	Explain Filtering, Stride and Padding in Convolutional Neural Network. (CO3)	10
7. Answer any one of the following:-		
7-a.	Define the difference between deep RNN and bi-directional RNNs. (CO4)	10
7-b.	Diferentiate between i) Input Gate, ii)Forget Gate (CO4)	10
8. Answer any one of the following:-		
8-a.	Define regularization-drop out with appropriate example or diagram (CO5)	10
8-b.	Give Two Actual Case Studies Where Autoencoders Have Been Used (CO5)	10

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