

No Preview
Available

Total No. of Question : [4]

Registration No. :

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Programme Name : Computer Science & Engineering(DS)
Regular B.Tech.Final Year (A.Y.2023-24) ESE Sem. VII Nov.2023
VII SEMESTER (2020 BATCH)
201DSL401-Advanced ML(TH)

Duration : [02:00 PM - 04:00 PM]

Date : 21 Nov, 2023

Day : Tuesday

Marks : 50

Instructions :

(Q1) **Attempt all the questions** [20.0]

(a) Explain the gradient decent algorithm in machine learning [7.0]

CO :- CO 1

Blooms Taxonomy :- Understand

(b) Define hyperparameters and explain their significance in the context of neural networks [7.0]

CO :- CO 1

Blooms Taxonomy :- Understand

(c) Explain Bagging algorithm and how it improves model performance through aggregation? [6.0]

CO :- CO 2

Blooms Taxonomy :- Apply

(Q2) **Attempt any two questions** [10.0]

(a) Describe the concept of crossover in Genetic Algorithms and how it combines genetic information from two parent solutions to create offspring [5.0]

CO :- CO 3

Blooms Taxonomy :- Understand

(b) With a basic example explain mutation operation in a Genetic Algorithm [5.0]

CO :- CO 3

Blooms Taxonomy :- Understand

(c) Explain the concept of Q-Learning in the context of Reinforcement Learning. [5.0]

CO :- CO 3

Blooms Taxonomy :- Understand

(Q3) Attempt any two questions [10.0]

- (a) Explain Principal Component Analysis (PCA), and how does it work for dimensionality reduction? [5.0]

CO :- CO 4

Blooms Taxonomy :- Apply

- (b) Explain the Linear Discriminant Analysis (LDA) algorithm for classification [5.0]

CO :- CO 4

Blooms Taxonomy :- Apply

- (c) Explain Sparse PCA, and how does it help in reducing the dimensionality of data? [5.0]

CO :- CO 4

Blooms Taxonomy :- Apply

(Q4) Attempt any two questions [10.0]

- (a) Explain how convolutional neural networks (CNNs) are used in image processing? [5.0]

CO :- CO 4

Blooms Taxonomy :- Apply

- (b) Explain how machine learning is used to predict protein structures and functions in bioinformatics applications? [5.0]

CO :- CO 4

Blooms Taxonomy :- Apply

- (c) Describe the application of recommendation systems in the retail industry [5.0]

CO :- CO 4

Blooms Taxonomy :- Apply
