CBCS SCHEME

USN | | | | | | | | | | |

18AI72

Seventh Semester B.E. Degree Examination, Jan./Feb. 2023
Advanced Machine Learning

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Explain gradient descent algorithm. **(06 Marks)**
b. Discuss the steps for building machine learning model. **(06 Marks)**
c. Discuss the two most popular accuracy measures of forecasting. **(08 Marks)**

OR

2 a. Explain the components of time series data. **(06 Marks)**
b. Explain the moving average technique to forecast the future value of time series data. **(06 Marks)**
c. Illustrate the KNN algorithm with an example. **(08 Marks)**

Module-2

3 a. Discuss the problems in Hidden Markov method. **(10 Marks)**
b. Explain any two types of clustering methods. **(10 Marks)**

OR

4 a. Illustrate how the K-means clustering method is used to assign the data points to different clusters. **(10 Marks)**
b. Explain the agglomerative clustering method. Demonstrate using program. **(10 Marks)**

Module-3

5 a. Discuss the two variations of collaborative filtering. **(10 Marks)**
b. Explain the Bag-of-Words (Bow) model with suitable example. **(10 Marks)**

OR

6 a. Explain matrix factorization technique. **(10 Marks)**
b. Illustrate the association rule mining concept with an example. Discuss its pros and cons. **(10 Marks)**

Module-4

7 a. Describe the evolution of neural networks. **(05 Marks)**
b. Discuss any two genetic operators. **(05 Marks)**
c. Illustrate the genetic programming with suitable example. **(10 Marks)**

OR

8 a. Describe the power of perceptron. **(05 Marks)**
b. Explain any two activation function. **(05 Marks)**
c. Write and explain the back propagation algorithm. **(10 Marks)**

Module-5

9 a. Illustrate how the estimating accuracy is useful in evaluating a learned hypothesis. **(10 Marks)**
b. Describe reinforcement learning. Discuss how it differs from other function approximation tasks. **(10 Marks)**

OR

10 a. Explain K nearest neighbor algorithm in detail. **(10 Marks)**
b. Discuss Q learning concept and write its algorithm. **(10 Marks)**

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