

Total No. of Questions : 09

P.T.U. Ques-
B.Tech I

MACHINE LEARNING

M.Code : 79627

Max. Marks : 60

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A

1. Write briefly :

- How does reinforcement learning differ from other machine learning paradigms?
- List some issues of machine learning.
- What is feature scaling?
- What is dataset splitting?
- Differentiate between classification and regression.
- What is F-1 Score?
- What is association rule mining?
- How are artificial neurons (perceptrons) modeled in a neural network?
- Define Mutation and Elitism.
- Define hierarchical method of clustering.

SECTION-B

2. How can data normalization impact the performance of machine learning algorithms, and what methods are commonly used for normalization?
3. Suppose you have developed a regression model to predict the selling prices of houses in a certain area. You tested your model on a sample of five houses, and here are the actual selling prices and the predicted prices for each house:

Actual Selling Prices (in thousands of dollars): [250, 320, 400, 290, 380]

Predicted Prices (in thousands of dollars): [260, 310, 420, 280, 370]

Calculate the Mean Absolute Error (MAE) for your model based on this test data.

4. Explain the difference between precision and recall in the context of classification, and when is each metric more important?
5. Explain the working of K-Nearest Neighbor algorithm.
6. Explain the basic structure of a feed forward neural network, including the input layer, hidden layers, and output layer?

SECTION-C

7. How do you approach the problem of data collection and data preprocessing in the context of designing a machine learning system?
8. What is the fundamental idea behind tree induction algorithms, and how do they work for classification and regression tasks?
9. How does hierarchical clustering work, and what are the differences between agglomerative and divisive hierarchical clustering approaches?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

Roll No.

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Total No. of Pages : 02

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B.Tech. (IT) (Sem.-6)
AGILE SOFTWARE DEVELOPMENT

Subject Code : BTIT-609-18

M.Code : 79628

Date of Examination : 22-12-2024

Max. Marks : 60

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- (a) What makes Agile Software methodology different from other methodologies?
- (b) What is the difference between Agile and Scrum?
- (c) What is product backlog and sprint backlog?
- (d) What is Kanban in Agile?
- (e) What is the ideal duration of a Scrum Sprint?
- (f) Why refactoring is important?
- (g) What is the importance of acceptance testing? Explain.
- (h) What do you mean by lean software development?
- (i) Why extreme programming is so called?
- (j) Name various stakeholders in the Agile software development.

SECTION-B

2. Differentiate between extreme programming and Scrum.
3. Explain pair programming and its benefits.
4. What is the working principle of Agile? What value is provided by Agile? Discuss.
5. How does the Kanban pull system works? Explain.
6. What is the purpose of daily Scrum meeting? Who are the participants? What are the guidelines for this meeting?

SECTION-C

7. Discuss Twelve Principles of XP.
8. Explain the Agile Life cycle and its impact on testing.
9. Explain Agile manifesto, principles, methods and design methodologies in detail.

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