



RAN-2511001005011001

B.Sc. (Computer Science) (Sem. V) Examination March - 2026

Major-1 : 503 - Machine Learning Using Python

Time: 1 Hour]

[Total Marks: 25

સૂચના : / Instructions (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી. Fill up strictly the above details on your answer book	Seat No.: <table border="1"> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table> Student's Signature						

Q.1. Answer the following. [8]
A. Answer any four. (MCQs) [4]

- Which of the following is a key feature of machine learning?
 - Hard-coded rules
 - Learning from data
 - Manual programming
 - Fixed algorithms
- Which of the following is a supervised learning algorithm?
 - K-Means
 - Linear Regression
 - Apriori
 - DBSCAN
- Which of the following is an application of machine learning?
 - Spam email detection
 - Manual data entry
 - File compression
 - Typing a document
- Unsupervised learning is mainly used for:
 - Predicting outcomes
 - Clustering and pattern detection
 - Regression problems
 - Decision tree building
- Which of the following is a classification problem?
 - Predicting house prices
 - Identifying whether an email is spam or not
 - Forecasting temperature
 - Calculating revenue growth
- Regression analysis predicts:
 - Categorical labels
 - Continuous numerical values
 - Clusters of data
 - Unseen classes

B. Answer any four. [4]

- In reinforcement learning, what is used to guide the learning process?
- Which distance metric is commonly used in KNN?
- In simple linear regression, what is the relationship between the dependent and independent variable called?

4. Name one common algorithm used in supervised learning.
5. Give one example of unsupervised learning.
6. Which algorithm is commonly used for clustering data?

Q-2 Answer the following [12]

- A. Differentiate between Simple Linear Regression and Multiple Linear Regression with suitable examples. [7]

OR

- A. What is Classification in Machine Learning? Which algorithms are commonly used for classification? Explain with examples. [7]
- B. What is K-Means clustering? Explain the step-by-step working with a diagram. [5]

Q-3 Answer the following [5]

- A. Explain how Support Vector Machine (SVM) works. Create a simple model and explain its working with a suitable example.
- B. What is a Confusion Matrix? Explain its components (TP, FP, TN, FN) with an example.
- C. What is Regression? Explain in detail.
- D. Write short note on application of Machine Learning.
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