

Roll No



**PRESIDENCY UNIVERSITY
BENGALURU**

SET-A

**SCHOOL OF MANAGEMENT
END TERM EXAMINATION –
MAY/JUNE 2024**

Semester : Semester VI - 2021
Course Code : BBB3025
Course Name : - Machine Learning for Managers
Program : BBA

Date : May 29, 2024
Time : 9:30 AM - 12:30 PM
Max Marks : 100
Weightage : 50%

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.
- (iv) Do not write any information on the question paper other than Roll Number.

PART - A

ANSWER ANY 5 QUESTIONS

5 X 2 = 10

1. Describe Supervised Learning. (CO1) [Knowledge]
2. Describe the difference between unsupervised learning and supervised learning. (CO1) [Knowledge]
3. State the difference between a Vector and Matrix. (CO2) [Knowledge]
4. Write the basic Syntax of Creating an Array. (CO2) [Knowledge]
5. List the process of data labeling and its importance in the context of machine learning. (CO3) [Knowledge]
6. Describe prescriptive analysis and discuss how it differs from predictive analysis. (CO3) [Knowledge]
7. List any two charts in Data Visualization. (CO4) [Knowledge]

PART - B

ANSWER ANY 5 QUESTIONS

5 X 10 = 50

8. Explain the difference between supervised and unsupervised learning, providing examples of each and discussing the implications of data labeling on model training and the types of insights gained from each approach. (CO1)[Comprehension]
9. What are the main attributes of the Python programming language that contribute to its widespread popularity and adaptability across different sectors and industries? (CO2) [Comprehension]
10. How do you create a Python program to manage an array, including adding a new element and modifying an existing one by its index? (CO2) [Comprehension]
11. dataset containing information about various products sold by a company. The dataset includes columns such as ProductID, ProductName, Category, Price, and QuantitySold. Normalize the Price column of this dataset using Min-Max normalization, which scales the values to a range of 0 to 1.

Write a Python program to perform this normalization.

ProductID	ProductName	Category	Price	QuantitySold
P1	Widget A	Widgets	10.00	150
P2	Widget B	Widgets	20.00	200
P3	Gizmo A	Gizmos	30.00	50
P4	Gizmo B	Gizmos	40.00	75
P5	Gadget A	Gadgets	50.00	100

- (CO3) [Comprehension]
12. Describe Principle Component Analysis ste-by-step and explain its importance in Data Analysis. (CO3) [Comprehension]
13. Create a sample dataset containing the sales figures for five products over a year and use Python to generate a bar chart displaying these sales figures. Explain each step in the process. (CO4) [Comprehension]
14. List various advantages and disadvantages of Python. (CO2) [Comprehension]

PART - C

ANSWER ANY 2 QUESTIONS

2 X 20 = 40

15. In the realm of business intelligence, machine learning has emerged as a transformative force, offering unprecedented opportunities for data-driven decision-making. Expound on the importance, advantages, and potential pitfalls of integrating machine learning into business intelligence strategies, illustrating with relevant examples. (CO1) [Application]

- 16.** A data science team at a technology company has been assigned the task of developing a machine learning solution to analyze customer feedback data and classify it into different sentiment categories. Their objective is to utilize various components of the Python machine learning ecosystem to streamline the development process and deliver an accurate and scalable solution. The team has access to a dataset containing textual customer feedback, categorized into sentiment categories (positive, neutral, negative). Their plan involves leveraging popular libraries and tools within the Python machine learning ecosystem to preprocess the data, train and evaluate machine learning models, and deploy the final solution for real-time sentiment analysis.

Questions:

1. How can you effectively utilize the components of the Python machine learning ecosystem to preprocess the textual customer feedback data?
2. What steps would you take to train and evaluate machine learning models using Python libraries within the ecosystem, ensuring accurate sentiment classification results?

(CO2) [Application]

- 17.** Write Python code to create a sample dataset representing heights (in centimeters) and weights (in kilograms) of individuals. Perform normalization, standardization, and binarization on the dataset. Provide explanations for each transformation and demonstrate how to apply them using the sample data.