



7.	Explain the Bootstrap and its components.	CO5	L5
8.	Compare AJAX with traditional form submission. Discuss how AJAX improves user experience.	CO3	L4
9.	Construct the Node JS in detail with examples.	CO5	L3

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**SECTION-C**

6.	Compare transactions with traditional payment systems in terms of speed, cost, and scalability, and discuss the trade-offs involved.	CO3	L4
7.	Explain how Blockchain technology is applied in Supply Chain emphasizing transparency and security benefits.	CO4	L5
8.	Identify different security attacks in Blockchain, emphasizing the 51% majority attack and its implications on network integrity.	CO4	L3
9.	Evaluate Bitcoin script and discuss the peer-to-peer (P2P) network components that enable decentralized transaction validation in the Bitcoin system.	CO3	L5

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Roll No. 

Total No. of Pages: 2

Total No. of Questions: 09

**MCA, Semester- 4<sup>th</sup>**  
**MACHINE LEARNING & DATA ANALYTICS USING PYTHON**

Subject Code: PGCA1976

M.Code: 91855

Date of Examination: 29.11.2025

Time: 3 Hrs.

Max. Marks: 70

**INSTRUCTIONS TO CANDIDATES:**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION B & C have FOUR questions each.
3. Attempt any FIVE question of SECTION B & C carrying TEN marks each.
4. Select at least TWO questions from SECTION B & C.

Q. No.	Question	Course Outcome	Bloom's Level
<b>SECTION-A</b>			
1.	Answer briefly:		
a.	Explain array indexing.	CO3	L2
b.	Define logistic regression.	CO2	L1
c.	Explain bar plot.	CO5	L2
d.	Illustrate about classification in Python.	CO2	L2
e.	Why is Machine Learning important?	CO1	L1
f.	List the different Python modules.	CO4	L1
g.	Recall the main goal of clustering.	CO3	L2
h.	What is the difference between training data and testing data?	CO1	L1
i.	Outline the role of series and DataFrame.	CO4	L2
j.	What is a scatter plot?	CO5	L1
<b>SECTION-B</b>			
2.	Apply the learning process in supervised and unsupervised learning. How does the availability of labeled data affect the performance and outcome of these algorithms?	CO1	L3
3.	Compare and contrast Linear Classification and Logistic Regression in terms of their use cases, output types, and model interpretation. Provide examples where each method is suitable.	CO2	L4
4.	Analyze and compare Decision Trees and Naive Bayes on a sample dataset in terms of accuracy and overfitting.	CO3	L4
5.	Evaluate how neural networks improve prediction accuracy using a practical dataset example.	CO3	L5
<b>SECTION-C</b>			
6.	Apply Python functions and modular programming to automate a dataset analysis workflow.	CO4	L3

7.	Analyze arithmetic, comparison, and logical operators in Python with best practices for applying them.	CO4	L4
8.	Evaluate the differences between histograms and bar charts with Matplotlib examples.	CO5	L5
9.	Construct the grids and subplots in data visualization, explaining their roles, differences, and applications	CO5	L3

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