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(Established under Govt. of Maharashtra Act No. V of 2023)



SCHOOL OF COMPUTER APPLICATIONS
DEPARTMENT OF MCA

UNIT TEST-II OCTOBER-2025

Program: MCA	Semester: III	Batch: 2024-26
Course Code: PMC207	COURSE NAME: RESEARCH METHODOLOGY	
Maximum Marks:20	Duration: 1 hour	Date: 11 th OCT. 2025 TIME OF EXAM:2:00 P.M

- Course Outcomes:**
1. Define and explain key concepts and methodologies of research and articulate research problems.
 2. Analyse and summarize literature reviews, data types, and appropriate data collection techniques.
 3. Design suitable sampling strategies and apply research designs for various problem scenarios.
 4. Examine and apply hypothesis testing methods using appropriate statistical tools.
 5. Develop a complete research report including all standard components using proper academic writing and citation styles.

Instructions: Do as directed.

SharkCoders

QUESTIONS		CO	BTL	Marks
Q.1 Attempt the following (Any 2)		Max Marks: 10 (2*5)		
A	Define Research Design. Why is it called the "blueprint" of research?	CO3	I & II	05
B	Explain the difference between Sampling Errors and Non-Sampling Errors with examples.	CO3	II	05
C	What is probability Sampling Technique? Compare Stratified Sampling and Cluster Sampling.	CO3	I & IV	05
Q.2 Attempt the following (Any 2)		Max Marks: 10 (2*5)		
A	What are Independent, Dependent, and Control variables? Give one example of each.	CO4	I & II	05
B	Differentiate between Null Hypothesis (H ₀) and Alternative Hypothesis (H ₁) with suitable examples	CO4	IV	05
C	What is Test Statistic? Write its formula and explain the meaning of each term.	CO4	III	05

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SCHOOL OF COMPUTER APPLICATIONS
DEPARTMENT OF MCA
UNIT TEST-II OCTOBER-2025

PROGRAM: MCA	SEMESTER: III	BATCH: 2024-26
COURSE CODE & NAME:	PMC206/DATA MINING & DATA WAREHOUSING	
MAXIMUM MARKS:	20	DATE OF EXAM:- 15TH OCT. 2025 TIME OF EXAM:- 2:45-3:45 PM

Course Outcomes:

1. Identify the scope and necessity of Data Mining & Warehousing for the society
2. Describe the designing of Data Warehousing so that it can be able to solve the root problems.
3. Understand various tools of Data Mining and their techniques to solve the real time problems. .
4. Develop the ability to design various algorithms based on data mining tools.
5. Develop further interest in research and design of new Data Mining techniques.

Instructions: Give Proper Instructions.

- Solve any two question form each questions.
- Figures to the right most column indicates marks.
- Draw neat & clean diagram wherever necessary.

QUESTIONS		CO	BTL	Mar ks												
Q.1 Attempt the following (Any 2)		Max Marks: 10 (2*5)														
A	A departmental store wants to improve cross-selling strategies. The transaction data shows frequent purchases of {Tea, Sugar} and {Tea, Biscuits}. Formulate two possible association rules , compute support and confidence , and recommend which rule is more useful for product placement..	CO3	3	05												
B	Consider the following transactional database: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>TID</th> <th>Items Purchased</th> </tr> </thead> <tbody> <tr> <td>T1</td> <td>Bread, Milk, Butter</td> </tr> <tr> <td>T2</td> <td>Bread, Eggs, Butter</td> </tr> <tr> <td>T3</td> <td>Milk, Bread, Butter</td> </tr> <tr> <td>T4</td> <td>Milk, Eggs</td> </tr> <tr> <td>T5</td> <td>Bread, Milk, Eggs, Butter</td> </tr> </tbody> </table> <p>If the minimum support = 60% and minimum confidence = 70%, find all frequent itemsets and generate strong association rules using the Apriori algorithm.</p>	TID	Items Purchased	T1	Bread, Milk, Butter	T2	Bread, Eggs, Butter	T3	Milk, Bread, Butter	T4	Milk, Eggs	T5	Bread, Milk, Eggs, Butter	CO3	3	05
TID	Items Purchased															
T1	Bread, Milk, Butter															
T2	Bread, Eggs, Butter															
T3	Milk, Bread, Butter															
T4	Milk, Eggs															
T5	Bread, Milk, Eggs, Butter															
C	Apply a Decision Tree classifier on a student performance dataset (attributes: hours studied, attendance, test score) and construct the tree to predict final exam results.	CO3	3	05												
Q.2 Attempt the following (Any 2)		Max Marks: 10 (2*5)														
A	Describe the major categories of clustering methods. Compare their fundamental approaches.	CO4	2	05												
B	Define hierarchical clustering. Differentiate between agglomerative and divisive approaches with suitable diagrams.	CO4	4	05												
C	Explain the concept of partitioning methods in clustering. Discuss K-Means algorithm.	CO4	2	05												

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SCHOOL OF COMPUTER APPLICATIONS DEPARTMENT OF MCA

UNIT TEST-II OCTOBER-2025

PROGRAM: MCA	SEMESTER: III	BATCH: 24-26
COURSE CODE & NAME: PMC203	MACHINE LEARNING USING PYTHON	
MAXIMUM MARKS: 20	DATE OF EXAM: 15 th OCTOBER 2025 TIME OF EXAM: 11:15 A.M	

Course Outcomes:

- To recall the ability to comprehend the concept of supervised and unsupervised learning techniques
- To analyze, differentiate regression, classification and clustering techniques and to implement their algorithms.
- To explain the performance of various machine learning techniques and to select appropriate features for training machine learning algorithms.
- To Apply structured thinking to unstructured problems.
- To be able to evaluate the efficacy of a range of reinforcement learning methods.

Instructions: Give Proper Instructions.

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QUESTIONS		CO	BTL	Marks
Attempt the following (Any 4)		Each Question carries 5 Marks		
Q1.	Write all possible commands for cleaning the titanic data set	CO3	4	05
Q2.	Explain Linear regression and logistic regression	CO3	4	05
Q3.	Write a difference Null Hypothesis and alternative Hypothesis with Example.	CO3	5	05
Q4.	Explain in detailed assumptions of linear regression.	CO4	4,5	05
Q5.	Write a note on Confusion matrix.	CO4	4,5	05

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**SCHOOL OF COMPUTER APPLICATIONS
DEPARTMENT OF MCA**

UNIT TEST-II OCTOBER-2025

Program: MCA	SEMESTER: III	BATCH: 2024-26
Course Code & Name:	PMCI13A SOFTWARE PROJECT MANAGEMENT	
Maximum Marks:	20	DATE OF EXAM:-11 TH OCTOBER 2025 TIME OF EXAM: -4:00 P.M

Course Outcomes:

1. Understand the knowledge of the fundamental elements and concepts related to Project Management activities and types of software projects.
2. Identify project risk, monitor and track project deadlines
3. Schedule the activities of the project to get a critical path.
4. Apply different techniques in monitoring and control of project
5. Evaluate Work in teams to evaluate the different modes of communication among people.

Instructions:

1. Each Question carry equal marks
2. Draw the necessary diagram wherever necessary

always with you!

QUESTIONS		CLO	BTL	Marks
Q.1 Attempt the following (Any 2)		Max Marks: 10 (2*5)		
A	Explain the different types of risks in software projects with suitable examples.	03	Apply	05
B	Describe the strategies to reduce software project risk and explain how PERT with three estimates helps in risk management.	03	Apply	05
C	What is the importance of cost monitoring in project risk management? Illustrate with an example.	03	Apply	05
Q.2 Attempt the following (Any 2)		Max Marks: 10 (2*5)		
A	Explain the role of change control and contract management in ensuring successful software project delivery.	04	Analyze	05
B	Discuss how organizational behaviour and leadership styles impact the performance of a software project team.	03	Apply	05
C	"Selecting the right person for the job is crucial for project success." Justify this statement with examples of effective team structuring and decision making.	04	Analyze	05

*****All the Best*****

Handwritten calculations:

$$\begin{array}{r} 4.410 \\ 3 \overline{) 13.23} \\ \underline{12} \\ 123 \\ \underline{120} \\ 30 \\ \underline{30} \\ 0 \end{array}$$

31
B 605

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SCHOOL OF COMPUTER APPLICATIONS
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UNIT TEST-II OCTOBER-2025

PROGRAM: MCA	SEMESTER: IV	BATCH: 2024-26
COURSE CODE & NAME:	CLOUD COMPUTING (PMC201)	
Maximum Marks: 20	20	DATE OF EXAM: -11th OCTOBER 2025 TIME OF EXAM: - 12:00 NOON

Course Outcomes:

1. Identify the basics of cloud computing, cloud models and its applications.
 2. Understand cloud application architectural styles and examine cloud-native approaches.
 3. Analyse cloud architecture layers, service models, and deployment models to build applications.
 4. Apply cloud simulators to simulate cloud environments and analyze performance.
 5. Design and implement virtualization using VMware tools like workstation and managing VMs.
- Instructions: Give Proper Instructions.**

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QUESTIONS

QUESTIONS		CO	BTL	Marks
Q.1 Attempt the following (Any 2)		Max Marks: 10 (2*5)		
A	Explain Cloud Deployment models			
B	Discuss role of virtualization in cloud deployment	CO3	L3	05
C	Describe the term on premise deployment.	CO4	L4	05
		CO4	L4	05
Q.2 Attempt the following (Any 2)		Max Marks: 10 (2*5)		
A	State Cloud Simulators Architecture			
B	Discuss Grid Sim with example.	CO4	L4	05
C	Design steps for creating virtual machine on local Host.	CO3	L3	05
		CO5	L5	05

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