Enrolment No.	

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

SCHOOL OF COMPUTER APPLICATIONS
DEPARTMENT OF MCA
Unit Test-I OCTOBER-2025

PROGRAM: MCA	**SEMESTER: I**	**BATCH: 2025-27**
COURSE CODE & NAME:	**ORGANIZATIONAL BEHAVIOUR & PMC108**	
MAXIMUM MARKS:	20	**DATE OF EXAM: -15TH OCTOBER 2025** **TIME OF EXAM: - 1:00 P.M**

Course Outcomes:

1. Identify the different levels of analysis in organizational behaviour.
2. Apply the different factors that influence organizational climate and culture.
3. Understand the use of different concepts of organizational behaviour to solve problems in organizations.
4. Analyse the different factors that contribute to organizational effectiveness.
5. Create a new organizational culture that is more supportive of employee engagement to evaluate the effectiveness of different organizational behaviour interventions.

Instructions: Do as directed.

	QUESTIONS	CO	BTL	Marks
Q.1 Attempt the following (Any 2)		**Max Marks: 10 (2*5)**		
A	Define Organizational Behaviour (OB). Explain its importance in improving employee performance, communication, and organizational culture.	CO1	I & II	05
B	Imagine you are managing a project team in an IT company. Show how you would use your Interpersonal, Informational, and Decisional roles to handle team tasks and problems.	CO1	III	05
C	What is the multidisciplinary nature of Organizational Behaviour. Briefly explain how it contributes to OB.	CO1	I & II	05
Q.2 Attempt the following (Any 2)		**Max Marks: 10 (2*5)**		
A	With a neat diagram, explain Maslow's Hierarchy of Needs Theory.	CO2	II	05
B	What is the ABC Model of Attitude. Briefly Explain the cognitive, affective, and behavioural components with suitable examples	CO2	II & III	05
C	Differentiate between Classical Conditioning and Operant Conditioning.	CO2	II	05

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

PROGRAM: MCA	**SEMESTER: I**	**BATCH: 2025-2027**
COURSE CODE & NAME:	**COURSE NAME : PROBABILITY AND COMBINATORY & PMC106**	
MAXIMUM MARKS: 20	**DATE: 14TH OCTOBER 2025**	**TIME OF EXAM: -4:00 P.M**

Course Outcomes:

1. Understand the foundational concepts of probability and combinatorics.
2. Apply combinatorial techniques like permutations, combinations, and the pigeonhole principle.
3. Solve problems related to probability, including conditional probability and Bayes' theorem.
4. Work with discrete probability distributions and apply them to real-world problems.
5. Solve complex problems using advanced combinatorial techniques and probability theories.

Instructions:

1. All questions are **Compulsory**
2. **Each question carries equal marks.**
3. **No additional sheets** will be provided. Use the margins wisely.
4. **Calculators** are not allowed unless specified by the instructor. Show all necessary steps and calculations.
5. Use only blue or black ink. Pencils may be used for diagrams/graphs only.

	QUESTIONS	CO	BTL	Marks
Q.1	**Attempt the following (Any 2)**	**Max Marks: 10 (2*5)**		
A	If ${}^{18}C_r = {}^{18}C_{r+2}$, find ${}^{r}C_5$	CLO1	III	05
B	Among a group of students, 49 study Physics, 37 study English and 21 study Biology. If 9 of these students study ~~Maths~~, Physics and English, 5 study English and Biology, 4 study Physics and Biology and 3 study Physics, English ~~and Biology~~, find the number of students in the group.	CLO1	III	05
C	Find the co-efficient of x^4 in the expansion of $(5+x)^8$	CLO2	III	05
Q.2	**Attempt the following (Any 2)**	**Max Marks: 10 (2*5)**		
A	Define Sample Space. Explain different types of events.	CLO1	I	05
B	A card is drawn from a well-shuffled pack of 52 cards. Find the probability of getting: (i) '2' of spades (ii) a jack (iii) a king of red colour (iv) a card of diamond (v) a king or a queen	CLO1	III	05
C	How many permutations can be formed from the word 'SOCIOLOGI"	CLO2	II	05

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

Program: MCA	**Semester:** I	**Batch:**2025-27
Course Code & Name:	PMC103 & Data Structure And Algorithms Using C	
Maximum Marks:	20	**DATE OF EXAM: -14/10/2025** **TIME OF EXAM: - 1:30 P.M**

Course Outcomes:

1. Identify fundamental concepts and importance of data structures in solving computational problems.
2. Explain the various searching and sorting algorithms to organize and retrieve data efficiently
3. Apply knowledge of Design and implement linked list structures to manage dynamic data.
4. Analyze and implement stack and queue operations and explore their use in real-world scenarios.
5. Evaluate the utilize tree and graph structures to represent hierarchical and networked data

Instructions: All Questions Are Compulsory

- *Draw neat and proper diagrams wherever required*

	QUESTIONS	CO	BTL	Marks
Q.1 Attempt the following (Any 2)		**Max Marks: 10 (2*5)**		
A	Define data structure and abstract data type (ADT). How does ADT differ from a simple data type?	CLO	2	05
B	Compare linear and non-linear data structures with at least two examples of each.	CLO	2	05
C	Explain deletion operations in a data structure. Explain with an example of an array and write c program for the same	CLO	2	05
Q.2 Attempt the following (Any 2)		**Max Marks: 10 (2*5)**		
A	Find the position of element 22 using the Binary Search method in an array given below {10, 5, 21, 3, 22, 17, 2, 43} Write a C program to implement this. Compare difference between Linear and Binary search in term of Speed?	CLO	4	05
B	Write and explain the bubble sort algorithm. Trace step-by-step changes in array, to sort the numbers: {45, 12, 89, 33, 21}Write a C program to implement bubble sort.	CLO	4	05
C	Write and explain the Insertion sort algorithm. Trace step-by-step changes in array, to sort the numbers:: {45, 19, 79, 33, 29} Write a C program to implement Insertion sort.	CLO	4	05

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DEPARTMENT OF MCA
UNIT TEST-I OCTOBER-2025

PROGRAM: MCA	**SEMESTER: I**	**BATCH:2025-27**
COURSE CODE & NAME:	PMC121 & Advance Database Management System	
MAXIMUM MARKS:	20	**DATE OF EXAM: - 13/10/2025** **TIME OF EXAM: - 4:00 P.M**

Course Outcomes:

1. To explain database architecture, components, and data modelling concepts to solve database-related challenges.
2. To be capable of designing and reducing complex ER diagrams into relational schemas, incorporating specialized database modelling techniques.
3. To Proficiently use SQL to create, manage, and query databases while applying constraints and optimization Techniques.
4. To evaluate and implement transaction management and concurrency control techniques to ensure reliable database operations.
5. To apply fundamental data mining algorithms, such as Apriori and Decision Tree, to analyze datasets and extract valuable insights.

Instructions: All Questions Are Compulsory

- *Draw neat and proper diagrams wherever required*
  Give proper examples where required.

	QUESTIONS	CO	BTL	Marks
Q.1 ATTEMPT THE FOLLOWING (ANY 2)		**Max Marks: 10 (2*5)**		
A	Differentiate between schema and instance with suitable examples.	1	II	5
B	Explain the difference between logical and physical data independence with examples.	1	II	5
C	Discuss the different types of Database Users with Suitable example.	I	II	5
Q.2 Attempt the following (ANY ONE QUESTION)		**Max Marks: 10 (1*10)**		
A	Describe an Entity-Relationship (ER) diagram for a General Hospital system based on the following scenario. Clearly identify and describe the entities, attributes, and relationships involved. A General Hospital consists of specialized wards (e.g., Maternity, Paediatric, Oncology). Each ward hosts multiple patients admitted on the recommendation of their GP and confirmed by a consultant. Patient details are recorded upon admission. A register stores information about tests and treatment results. Multiple tests may be conducted for each patient. Each patient is assigned to one leading consultant but may be examined by other doctors. Doctors specialize in branches of medicine and may be consultants for multiple patients across different wards.	2	II	10

B	Explain the following terms with suitable example: - a) Entity b) Weak Entity c) Attribute and Its Types with Suitable Example.	2	II	10

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

Programme: MCA	**Semester: I**	**Batch: 2025-2027**
Course Code & Name:	**PMC101: Python Programming**	
Maximum Marks:	20	**Date &Time of Exam: - 13th Oct. 2025, 1.30 PM – 2.30 PM**

Course Outcomes:

1. Explain Python programming concepts, syntax and constructs.
2. Illustrate built-in data structures for handling and processing data efficiently.
3. Apply control structures, loops, and functions to solve computational problems.
4. Develop object-oriented programs and graphical user interfaces using Python libraries.
5. Evaluate and integrate file handling and database connectivity in Python applications.

Instructions:

1. *Attempt any two questions from each Q-set.*
2. *Each question carries 5 marks.*
3. *Draw neat and labelled diagrams and give examples wherever applicable.*
4. *Use proper Python syntax, indentation, and notations while writing programs.*

QUESTIONS		CO	BTL	Marks
Q.1 Attempt the following (Any 2)		**Max Marks: 10 (2*5)**		
A	Define Python. Mention any five advantages of Python over other languages.	CO1	I	05
B	Discuss the role of break, continue, and pass statements with suitable examples.	CO1	II	05
C	**Demonstrate** the use of various operators in a Python program: (i) Show the effect of shift operators on integers and prints the outcome. (ii) Check if certain characters are present or absent in a given string using in and not in operators and displays the results.	CO1	II	05
Q.2 Attempt the following (Any 2)		**Max Marks: 10 (2*5)**		
A	Differentiate between tuples and lists in Python with examples.	CO2	II	05
B	Describe sets in Python. Mention any three set mathematical operations with examples.	CO2	II	05
C	Write a Python program to create a dictionary of 3 students and their marks, display all key-value pairs, and print the average marks. Show the **output** of the program.	CO2	III	05

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