K. K. Wagh Institute of Engineering Education & Research, Nashik

(An Autonomous Institute From A.Y. 2022-23)

WINTER-2025	
Exam Seat No.:	
Academic Year:2025-2026	Semester:III
Class:PG-II	Program:MCA
Branch Code:M.C.A.	Pattern:2024
Name of Course:Business Intelligence and Analytics	Course Code:2409605C
Max. Marks:60	Duration:2.30 Hrs.

Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains Two page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

		Marks	CO
Question No. 1			
1a)	Summarize the Business Intelligence Architectures.	(6)	CO1
Question No. 2			
2a)	Demonstrate of different types of data sources to analyse how internal, external, and real-time data contribute to Business Intelligence systems.	(6)	CO2
Question No. 3			
3a)	Apply your understanding of the key features of a Data Warehouse to explain how they support data integration and analysis in organizations.	(8)	CO3
	OR		
3b)	Apply the concept of fact tables and dimension tables to explain their roles in organizing and analyzing business data.	(8)	CO3
3c)	Illustrate data modelling to explain the relationship between conceptual, logical, and physical data models in the data warehouse design process.	(8)	CO3
	OR		
3d)	Apply your knowledge of OLAP and OLTP to distinguish between the two systems and explain how each supports different business operations.	(8)	CO3
Question No. 4			
4a)	Apply your understanding of the data mining process to explain how business understanding and data understanding phases help in defining mining objectives.	(8)	CO4
	OR		
4b)	Show how association rules can be derived from a given dataset by explaining the concepts of support, confidence, lift, and conviction.	(8)	CO4

Transaction ID	Items Purchased
T1	Milk, Bread, Butter
T2	Bread, Butter, Eggs
T3	Milk, Bread
T4	Bread, Butter
T5	Milk, Bread, Eggs

4c) Demonstrate the use of regression analysis (linear and logistic) for predicting business trends or customer behavior. (8) CO4

OR

4d) Apply your understanding of the data mining workflow to demonstrate how each stage from business understanding to evaluation can be implemented using McDonald's sales and customer data. (8) CO4

Question No. 5

5a) Categorize the key techniques used in Exploratory Data Analysis (EDA) and explain their role in identifying patterns and anomalies in data. (8) CO5

OR

5b) Differentiate between different types of charts and graphs, highlighting their appropriate use cases in data visualization. (8) CO5

5c) Illustrate the importance of effective data visualization by explaining how visual tools enhance data interpretation and communication. (8) CO5

OR

5d) Analyze the use of cross-tabulation and pivot tables in comparing multidimensional data for decision-making. (8) CO5

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