.

Printed Page:-3 **Subject Code:- AMICA0701**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)
MCA (Integrated)
SEM: VII - THEORY EXAMINATION (2025 - 2026)
Subject: Business Intelligence and Data Visualization

Time: 3 Hours **Max. Marks: 100**

General Instructions:

IMP: *Verify that you have received the question paper with the correct course, code, branch etc.*

1. *This Question paper comprises of* ***three Sections -A, B, & C.*** *It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.*

2. *Maximum marks for each question are indicated on right -hand side of each question.*

3. *Illustrate your answers with neat sketches wherever necessary.*

4. *Assume suitable data if necessary.*

5. *Preferably, write the answers in sequential order.*

6. *No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.*

SECTION-A 20

1. Attempt all parts:-

1-a. Understanding key expectations of BI end users. K2,CO1 1

(a) Programming knowledge
(b) Ease of use and intuitive interface
(c) Database administration skills
(d) Data encryption

1-b. Defining the term that refers to data quality, consistency, and completeness in BI. K2,CO1 1

(a) Data mining
(b) Data storage
(c) Data visualization
(d) Data integrity

1-c. Determine the feature that allows users to explore data from summary to detailed level. K2,CO2 1

(a) Drill-down
(b) Exporting
(c) Sorting
(d) Highlighting

1-d. Define what SDK stands for. K1,CO2 1

(a) System Development Kit
(b) Software Development Kit
(c) Secure Data Kit
(d) Structured Data Kernel

.

1-e. Identify the panel that helps create visualizations quickly in Tableau. K1,CO3 1

(a) Data Pane
(b) Show Me
(c) Marks Card
(d) Format Pane

1-f. Name the menu that allows editing axis titles. K1,CO3 1

(a) Format
(b) Data
(c) Worksheet
(d) Server

1-g. Determine the action that will NOT directly impact the underlying data source in Tableau. K2,CO4 1

(a) Applying a filter
(b) Sorting data
(c) Creating a calculated field
(d) Pivoting data

1-h. Identify the Tableau feature used to create bins for continuous measures. K2,CO4 1

(a) Groups
(b) Bins
(c) Sets
(d) Parameters

1-i. Determine the Microsoft Office product most closely related to Power BI. K2,CO5 1

(a) Excel
(b) Word
(c) Outlook
(d) Access

1-j. Define what DAX stands for in Power BI. K1,CO5 1

(a) Data Analysis Expressions
(b) Dynamic Analysis Extension
(c) Data Analytics Exchange
(d) Digital Analysis XML

2. Attempt all parts:-

2.a. List the main components of BI architecture. K1,CO1 2

2.b. Describe the key features and benefits of mobile Business Intelligence. K2,CO2 2

2.c. Determine the chart best suited for time series data. K3,CO3 2

2.d. Describe the purpose of stories in Tableau. K3,CO4 2

2.e. List any two core features of Power BI. K1,CO5 2

SECTION-B 30

3. Attempt all parts:-

3.a. Answer any one of the following:-

3.a.(i)	Discuss the ETL process in detail and its significance in the BI workflow. K2,CO1	6
3.a.(ii)	Compare and contrast a data warehouse with a traditional operational database in the context of BI. K4,CO1	6
3.b. Answer any one of the following:-		
3.b.(i)	How does mobile Business Intelligence improve real-time decision-making? Discuss its architecture and challenges. K5,CO2	6
3.b.(ii)	Explain how dashboards can be designed for different user roles in an organization. Give at least two detailed examples. K3,CO2	6
3.c. Answer any one of the following:-		
3.c.(i)	Differentiate between Measures and Dimensions in Tableau and demonstrate their use with examples in real datasets. K4,CO3	6
3.c.(ii)	Explain how AVG() and SUM() differ in Tableau calculations. K2,CO3	6
3.d. Answer any one of the following:-		
3.d.(i)	Compare and contrast dashboards and stories in Tableau. K4,CO4	6
3.d.(ii)	Explain the process of publishing to Tableau Online. K3,CO4	6
3.e. Answer any one of the following:-		
3.e.(i)	Explain how filters and slicers are used in Power BI reports. K2,CO5	6
3.e.(ii)	How do different Power BI products (Desktop, Service, Gateway) work together? K4,CO5	6

SECTION-C 50

4. Answer any one of the following:-

4-a.	Discuss in detail the concept of Business Intelligence and evaluate its importance in today's business environment. K5,CO1	10
4-b.	Analyze the use of dashboards, scorecards, and KPIs in effective decision-making within BI systems. K4,CO1	10

5. Answer any one of the following:-

5-a.	Discuss the strategic use of automated tasks and events in BI. How do they contribute to operational efficiency and responsiveness? K5,CO2	10
5-b.	How do drill-up and drill-down functionalities enhance multidimensional analysis in BI tools? Provide real-world use cases. K4,CO2	10

6. Answer any one of the following:-

6-a.	Explain the complete process to build a line chart using imported data. K6,CO3	10
6-b.	Compare Tree Maps and Bar Charts. When would you use each? K4,CO3	10

7. Answer any one of the following:-

7-a.	Discuss how interactivity enhances user experience in dashboards. K3,CO4	10
7-b.	Discuss ethical considerations when publishing and distributing visualizations. K3,CO4	10

8. Answer any one of the following:-

8-a.	Compare Power BI and Excel in terms of features, usage, and performance. K5,CO5	10
8-b.	Explain the key challenges in integrating multiple data sources into Power BI. K2,CO5	10