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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: VI - 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:-

- | | | |
|-------|---|---|
| (1.1) | BI architecture integrates with enterprise infrastructure primarily to (CO1, K2) | 1 |
| | (a) Enhance database normalization | |
| | (b) Reduce OLTP redundancy | |
| | (c) Enable strategic decision-making | |
| | (d) Enforce primary key constraints | |
| (1.2) | It defines the structure of the data held in operational databases and used by operational applications. (CO1, K2) | 1 |
| | (a) Data mining metadata | |
| | (b) Operational metadata | |
| | (c) Data warehouse metadata | |
| | (d) None of these | |
| (1.3) | Choose from the following risks are derived from the organizational environment where the software is being developed(CO2,K2) | 1 |
| | (a) Data mining metadata | |
| | (b) Operational metadata | |
| | (c) Data warehouse metadata | |
| | (d) None of these | |
| (1.4) | Scorecard is(CO2,K2) | 1 |
| | (a) Data mining database servers | |
| | (b) Data mart database servers | |
| | (c) Data warehouse database servers | |
| | (d) None | |

- (1.5) By definition, Tableau displays measures over time as a _____ (CO3, K2) 1
- (a) Bar
 - (b) Line
 - (c) Histogram
 - (d) Plots
- (1.6) Tableau was introduced in the year of (CO3, K2) 1
- (a) 2000
 - (b) 2002
 - (c) 2003
 - (d) 2004
- (1.7) From the following choose the true one about Data Visualization.(CO4, K2) 1
- (a) Data Visualization is used to communicate information clearly and efficiently
 - (b) Data Visualization helps users in analyzing a large amount of data in a simpler way.
 - (c) Data Visualization makes complex data more accessible, understandable, and usable
 - (d) All of the above
- (1.8) Choose from the following which is not a data structuring technique in Tableau. (CO4, K2) 1
- (a) Pivoting
 - (b) Joining
 - (c) Blending
 - (d) Filtering
- (1.9) Identify the one which best describes the role of visualizations in Power BI reports? (CO5, K2) 1
- (a) To hide the underlying data from the business user
 - (b) To present data in a visual form that helps users identify trends and patterns
 - (c) To replace all data-modeling activities in Power BI
 - (d) To store the raw data in the cloud
- (1.10) The Data view in Power BI Desktop allows you to _____. (CO5, K2) 1
- (a) Add visualizations to the report canvas
 - (b) .View and edit your data after it has been loaded into the application
 - (c) Shape and model data relationships
 - (d) View data only

2. Attempt all parts:-

- (2.1) Define Data Mart. (CO1, K2) 2
- (2.2) Distinguish between dashboards and scorecards with respect to business performance tracking.(CO2,K2) 2
- (2.3) Describe how Tableau handles different data file formats.CO3, K2) 2
- (2.4) Explain drill through in Tableau.(CO4, K2) 2
- (2.5) Define the benefits of Power BI. (CO5, K1) 2

SECTION-B

30

Answer any one of the following:-

- (3.1) Discuss the solutions offered by BI. (CO1, K2) 6
- (3.2) Explain the various operations of OLAP with daigram. (CO1, K2) 6

Answer any one of the following:-

- (3.3) Write real world example of business intelligence Project .(CO2) 6
- (3.4) Define the various ways in which charts can be added to a dashboard.(CO2,K2) 6

Answer any one of the following:-

- (3.5) Categorize dimensions in Tableau. Write the names of Various Dimensions.(CO3, K3) 6
- (3.6) Demonstrate how you would create a line chart in Tableau using time-series data and interpret the trend shown.(CO3, K3) 6

Answer any one of the following:-

- (3.7) Explain difference between data journalism and data storytelling with suitable example.(CO4, K4) 6
- (3.8) Explain the basic types of basic filters used in Tableau .(CO4, K4) 6

Answer any one of the following:-

- (3.9) Analyze different connectivity modes in Power BI. (CO5, K4) 6
- (3.10) Evaluate different data connectivity and storage strategies in Power BI and justify the most suitable approach for handling large-scale enterprise data. (CO5, K5) 6

SECTION-C 50

4. Answer any one of the following:-

- (4.1) Examine the challenges and solutions in implementing Business Intelligence systems in large enterprises. (CO1, K2) 10
- (4.2) Differentiate between Business Intelligence and Business Analytics. (CO1, K2) 10

5. Answer any one of the following:-

- (5.1) Describe data exploration. Explain its compatibility with drill down procedure.(CO2,K2) 10
- (5.2) Justify with a example "Why Businesses Need a Business Intelligence Reporting .(CO2, K2) 10

6. Answer any one of the following:-

- (6.1) Apply formatting options in Tableau to enhance the appearance of a chart (labels, colors, axes).(CO3, K3) 10
- (6.2) Apply the steps to connect a given dataset (Excel/CSV) to Tableau and create a basic bar chart. Explain the process with suitable example.(CO3, K3) 10

7. Answer any one of the following:-

- (7.1) Examine the role of storytelling in Tableau for presenting complex data in a simplified manner.(CO4, K4) 10
- (7.2) Explain how do you approach data preparation and cleaning when creating a Tableau dashboard, and what tools do you use to streamline the proces.(CO4, K4) 10

8. Answer any one of the following:-

- (8.1) Discuss the difference between Power BI and Tableau based on key parameters. 10

(CO5, K4)

- (8.2) List and explain important features of good data visualization in an industry context. 10
(CO5, K3)

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