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Printed Page:-4 **Subject Code:- BCSDS0412**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)
B.Tech
SEM: IV - 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 stands for? (CO1,K1) 1

(a) Business Intelligence
(b) Business Integration
(c) Binary Information
(d) Business Interface

(1.2) Pi chart , Bar chart , Line chart comes under.(CO1,K1) 1

(a) Data visualisation tools
(b) BI Tools
(c) Data representation tool
(d) All of the above

(1.3) Histogram is the type of___ (CO2,K1) 1

(a) Graph
(b) BI tool
(c) Data Base
(d) Data Mart

(1.4) Scorecard & Dashboard is the part of ____ (CO2,K1) 1

(a) Data Visualisation
(b) Relational Algebra
(c) Data Mart
(d) Can not say

(1.5) Field is commonly used in a Tableau line chart _.(CO3,K1) 1

(a) Geographic field
(b) Date field
(c) Boolean field
(d) NONE

(1.6) Default Aggregation Used For Tree Map (CO3,K1) 1

(a) Sum
(b) Avg
(c) Count
(d) Countd

(1.7) The data dashboard for a marketing manager may have KPIs related to ..... .(CO4,K1) 1

(a) Current sales measures and sales by region
(b) Current financial standing of the company.
(c) Vehicle's current speed, fuel level, and engine temperature.
(d) None of these

(1.8) Null values in Tableau can be handled by__ (CO4,K1) 1

(a) Filtering or replacing with a constant
(b) Deleting all worksheets
(c) Changing dashboard size
(d) Publishing data source

(1.9) Which component allows users to publish Power BI reports online?(CO5,K1) 1

(a) Power BI Mobile
(b) Power BI Report Builder
(c) Power BI Service
(d) Power BI Desktop

(1.10) What is a key benefit of Power BI Service?(CO5,K1) 1

(a) Data modeling
(b) Collaboration and sharing
(c) Creating calculated fields
(d) Import Excel data

2. Attempt all parts:-

(2.1) Describe OLAP in terms of BI (CO1,K2) 2

(2.2) Describe role of data visualization in BI environment? ?(CO2,K2) 2

(2.3) Describe aggregate functions in Tableau . (CO3,K2) 2

(2.4) Describe Tableau dashboard (CO4,K2) 2

(2.5) Describe dynamic dashboards in Power BI (CO5,K2) 2

SECTION-B 30

Answer any one of the following:-

(3.1) Explain the scope and future prospects of Business Intelligence in modern enterprises. (CO1,K2) 6

(3.2)	Explain How can raw organizational data be transformed into actionable intelligence for senior executives. (CO1,K2)	6

Answer any one of the following:-

(3.3)	Explain the importance of cost justification and success evaluation in Business Intelligence (BI) projects. Also discuss the methods organizations use to assess the Return on Investment (ROI) of BI solutions. (CO2,K2)	6
(3.4)	Explain in detail the roles of reporting, dashboards, scorecards and metadata models.(CO2,K2)	6

Answer any one of the following:-

(3.5)	Describe in detail the steps involved in creating visualizations such as line charts and bar charts in Tableau. (CO3,K2)	6
(3.6)	Describe the step-by-step process starting from file loading, followed by the use of formatting tools and menus and ending with data visualization creation in Tableau. (CO3,K2)	6

Answer any one of the following:-

(3.7)	Describe the different file types used in Tableau and explain their purposes in detail. (CO4,K2)	6
(3.8)	Explain how features such as filters, detail panels, size panels and tooltips in Tableau enhance analytical insights and improve the user experience in dashboards. (CO4,K2)	6

Answer any one of the following:-

(3.9)	Describe Power BI and explain in detail its relationship and integration with Microsoft Excel. (CO5,K2)	6
(3.10)	Explain the process of data preparation in Power BI. Discuss how tools helps in maintaining data quality, accuracy and consistency before creating visualizations. (CO5,K2)	6

SECTION-C 50

4. Answer any one of the following:-

(4.1)	Describe in detail the functional areas of Business Intelligence (BI) tools with suitable examples to illustrate their applications. (CO1,K2)	10
(4.2)	Explain in detail the architecture, components and working process of a Business Intelligence (BI) system. Also discuss how data analysis in BI supports real-world business decision-making for senior executives and management (CO1,K2)	10

5. Answer any one of the following:-

(5.1)	Explain in detail the concepts of SDK, Automated Tasks and Events with suitable examples. (CO2,K2)	10
(5.2)	Discuss in detail how the development of scorecards and dashboards influences decision-making in Business Intelligence (BI) systems, with special emphasis on clarity and interactivity. (CO2,K2)	10

6. Answer any one of the following:-

(6.1)	Describe in detail the use of the “Show Me” panel in Tableau for creating different types of visualizations with suitable examples. (CO3,K2)	10
(6.2)	Explain in detail the analytical workflow in Tableau, starting from data connection	10

to Editing and Formatting Axes . Also illustrate how Tableau integrates multiple data sources and supports end-to-end business analysis. (CO3,K2)

7. Answer any one of the following:-

(7.1) Explain the importance of data cleaning and structuring before visualization in Tableau. Also discuss how errors in data preparation can impact dashboard accuracy and the quality of visual representation. (CO4,K2) 10

(7.2) Explain the concept of interactivity in Tableau dashboards. Also explain in detail the steps involved in creating dashboards and stories in Tableau. (CO4,K2) 10

8. Answer any one of the following:-

(8.1) Evaluate how Power BI integrates with Microsoft Excel. Also discuss how this integration improves company level analytics and collaborative reporting. (CO5,K4) 10

(8.2) Describe in detail the Power BI ecosystem. Also discuss the importance of interactivity in Power BI dashboards with suitable examples. (CO5,K2) 10