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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 (2022-2023)

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. Select from the following that does not form the part of BI Stack in SQL Server ? 1
[CO1]
- (a) SSRS
 - (b) SSIS
 - (c) SSAS
 - (d) CIS
- 1-b. Data warehouse is a ? [CO1] 1
- (a) A database that stores transactional data
 - (b) A system that manages and analyzes large amounts of historical data
 - (c) A cloud-based storage solution for backup data
 - (d) A software tool that cleanses and transforms data
- 1-c. Dashboard is ? [CO2] 1
- (a) Data mart
 - (b) Data mining

- (c) Business intelligence
- (d) DBMS
- 1-d. The disadvantage of using a scorecard is ? [CO2] 1
- (a) Supports real-time analytics
- (b) Reduces data duplication and inconsistency
- (c) Stores only current data
- (d) Provides transactional processing capabilities
- 1-e. Current Version Of Tableau Is ? [CO3] 1
- (a) 2020.1
- (b) 2020.2
- (c) 2020.3
- (d) 2020.4
- 1-f. The difference between an aggregate function and a non-aggregate function in Tableau is ? [CO3] 1
- (a) Aggregate functions perform calculations on individual rows, whereas non-aggregate functions perform calculations on entire columns
- (b) Aggregate functions perform calculations on entire columns, whereas non-aggregate functions perform calculations on individual rows
- (c) There is no difference between an aggregate function and a non-aggregate function in Tableau
- (d) Aggregate functions perform calculations on numerical data, whereas non-aggregate functions perform calculations on text data
- 1-g. A useful chart for displaying multiple variables is the ? [CO4] 1
- (a) scatter chart
- (b) scatter chart matrix
- (c) two-dimensional graph
- (d) stacked column and bar chart
- 1-h. In Tableau, which option allows you to convert a single column into multiple columns ? [CO4] 1
- (a) Data Interpreter
- (b) Structuring Data
- (c) Pivoting Data
- (d) Sorting and Filtering Data
- 1-i. A customer may purchase 1 or many products. So the relationship between 1

the customer table and the products table will be _____ ? [CO5]

- (a) One to Many
- (b) Many to Many
- (c) Many to One
- (d) One to One

- 1-j. When you connect to a __ , you are using data that has been previously uploaded to the Power BI service ? [CO5] 1
- (a) Content pack from online service
 - (b) Power BI dataset
 - (c) Excel workbook saved on local drive
 - (d) Web page

2. Attempt all parts:-

- 2.a. List the components of BI Infrastructure ? [CO1] 2
- 2.b. Define Scorecard and it's advantages in Business Intelligence and Data Visualization ? [CO2] 2
- 2.c. Explain the limitation of context filters in Tableau ? [CO3] 2
- 2.d. Discuss ETL process on a Business Data ? [CO4] 2
- 2.e. State the differences between Tableau and Power BI ? [CO5] 2

SECTION B

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3. Answer any five of the following:-

- 3-a. Justify "Business Intelligence continue to be a competitive advantage for businesses in the future." ? [CO1] 6
- 3-b. Explain the advantage and disadvantage of Data Mining ? [CO1] 6
- 3-c. Explain the process of risk mitigation with proper diagram ? [CO2] 6
- 3-d. Enlighten the problems that business intelligence solve in IT industries ? [CO2] 6
- 3.e. State some ways to improve the performance of Tableau in detail ? [CO3] 6
- 3.f. Explain some good sources where I can learn more about data storytelling in the context of data science ? [CO4] 6
- 3.g. Explain in detail different connectivity modes in Power BI ? [CO5] 6

SECTION C

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4. Answer any one of the following:-

- 4-a. Explain how BI solutions fit into an organization's existing infrastructure ? [CO1] 10

4-b. Discuss Business Intelligence with the help of a diagram ? [CO1] 10

5. Answer any one of the following:-

5-a. Describe stages of BI in detail ? [CO2] 10

5-b. Differentiate between BI, Big Data, Data Mining in detail ? [CO2] 10

6. Answer any one of the following:-

6-a. Explain how does Tableau work. Write the working procedure in detail ? [CO3] 10

6-b. Write the step by step procedure to build a Tableau Treemap ? [CO3] 10

7. Answer any one of the following:-

7-a. Explain how Tableau filters are different from each other briefly explain it with proper example ? [CO4] 10

7-b. Explain the advance features of Tableau in the context of large data set explain it with an example ? [CO4] 10

8. Answer any one of the following:-

8-a. Give some advantages of using Power BI over traditional spreadsheet tools ? [CO5] 10

8-b. Discuss the future of Power BI and how do you see it evolving in the coming years ? [CO5] 10