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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: V - THEORY EXAMINATION (2024 - 2025)

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, &amp; C. It consists of Multiple Choice Questions (MCQ's) &amp; 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**

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1. Attempt all parts:-

1-a. KPI stands for\_\_\_\_\_(CO1,K1)

1

- (a) Key Performance Indicators
- (b) Key Performance Identify
- (c) Key Processes Identifier
- (d) OBIEE

1-b. Data warehouse architecture is based on \_\_\_\_\_.(CO1,K2)

1

- (a) RDBMS
- (b) Sybase
- (c) SQL Server
- (d) data warehouse

1-c. Which of the following is python library? (CO2,K1)

1

- (a) Pandas.
- (b) Matplotlib.
- (c) PyTorch
- (d) All of the above

1-d. The general term for information about databases and the objects in MySQL is.....(CO2,K2)

1

- (a) Datum
- (b) Info

- (c) Record
- (d) Metadata
- 1-e. Tableau File Extension is \_\_\_\_\_(CO3,K1) 1
- (a) twbx
- (b) twby
- (c) twbw
- (d) twbz
- 1-f. What are Traditional BI Tools features ?(CO3,K1) 1
- (a) multi-thread,
- (b) multi-core computing.
- (c) multi tasking
- (d) All of these
- 1-g. How can you clean data?(CO4,K2) 1
- (a) Data Visualization
- (b) Data Interpreter
- (c) Both A and B
- (d) None of these
- 1-h. Data visualization tools provide an accessible way to see and understand ..... in data.(CO4,K2) 1
- (a) Trends
- (b) Outliers
- (c) Patterns
- (d) All of the above
- 1-i. Type of data modeling in Power BI that Uses Data Analysis Expressions and similar to Excel formulas(CO5,K3) 1
- (a) Query
- (b) DAX
- (c) Model
- (d) None
- 1-j. Which of the following illustrates a Many to One relationship?(CO5,K2) 1
- (a) Many banana trees planted in more than 1 garden
- (b) 1 banana tree having many bananas on the tree
- (c) Many gardens having no banana trees
- (d) Many banana trees planted in a garden
2. Attempt all parts:-
- 2.a. List and explain different phases of business intelligence system.(CO1,K2) 2
- 2.b. Differentiate between Mobile Business Intelligence and Business Intelligence.(CO2,K2) 2

- 2.c. List out different File Extensions used in Tableau for performing the data visualization. (CO3,K3) 2
- 2.d. How do you connect a data source to Tableau?(CO4,K1) 2
- 2.e. Name 4 Software's used for the Data Visualization.(CO5,K1) 2

### **SECTION-B**

30

3. Answer any five of the following:-

- 3-a. Explain the characteristics of the information in terms of the scope of decision. Differentiate between Data and information. (CO1, K1) 6
- 3-b. Differentiate between data mining and OLAP and OLTP. (CO1, K2) 6
- 3-c. Define KPI and explain how it can be used in scoreboard creation. (CO2, K3) 6
- 3-d. How can you design a BI Project? Write the step-by-step procedure of it. (CO2, K2) 6
- 3.e. Explain the "Show Me" panel in Tableau, and how does it help you create different types of visualizations quickly and efficiently?.(CO3,K3) 6
- 3.f. Why is it important for data scientists to focus on storytelling and presentation skills? Justify your answer with example. (CO4, K3) 6
- 3.g. Explain the Typical Analytics Business flow. (CO5, K2) 6

### **SECTION-C**

50

4. Answer any one of the following:-

- 4-a. Describe the key components of a Business Intelligence system, and how do they interact to facilitate data analysis and reporting?(CO1, K3) 10
- 4-b. Describe Data Visualization in Business Intelligence? Explain with suitable example. (CO1, K2) 10

5. Answer any one of the following:-

- 5-a. How do automated tasks and events help streamline reporting processes in BI systems, and what are some common use cases for automation? (CO2,K2) 10
- 5-b. Explain the drill-up and drill-down capabilities in BI reporting, and how do they enable users to explore data at different levels of granularity? (CO2, K3) 10

6. Answer any one of the following:-

- 6-a. Define the maximum number of formatting options available in Tableau for editing and adjusting the axes of a chart, and how many of them can be applied to a single axis? (CO3, K3) 10
- 6-b. Explain the difference between Tableau Worksheet, Dashboard, Story and Workbook.(CO3,K3) 10

7. Answer any one of the following:-

- 7-a. If you have a dataset with 10,000 rows and 15 columns in Tableau, and you use the Data Interpreter to clean the data, how many columns could potentially be removed or restructured to prepare the data for analysis? When pivoting data in 10

Tableau, how many columns can you select at a time for pivoting if the dataset has 12 columns? Explain any two filters available in Tableau. (CO4, K4)

7-b. How do the Detail, Size, and Tooltip panels contribute to the effectiveness of a Tableau visualization, and what are some practical examples of using them in a dashboard? (CO4, K3) 10

8. Answer any one of the following:-

8-a. Discuss the Power BI Suit of the Products and define the significance of each product. (CO5, K3) 10

8-b. When transforming data in Power BI using Power Query, if you are cleaning 100,000 rows of data and applying 5 different transformation steps, how many steps would be involved in transforming the dataset? Explain the different steps of connecting power BI to a data source. (CO5, K4) 10

REG:JULY\_DEC-2024