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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: Data Analytics

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**

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1. Attempt all parts:-

- 1-a. A collection of information about a related topic is referred to as a \_\_\_\_\_ (CO1, K1) 1
- (a) Visualisation
- (b) Analysis
- (c) Conclusion
- (d) Data
- 1-b. The process of evaluating data through analytical and statistical tools.(CO1, K2) 1
- (a) Data Mining
- (b) Data Exploration
- (c) Data Analysis
- (d) Data Visualisation
- 1-c. A researcher wants to study the association between gender and using a mobile phone. Data collected for this study will be.....(CO2, K3) 1
- (a) Quantitative data
- (b) Qualitative data
- (c) Continuous data
- (d) Classified data
- 1-d. The techniques by which we can study an individual's personality by observing his/her style of life,behaviour,manner,thoughts and feelings is called (CO2, K2) 1

- (a) Inventory
- (b) Case History
- (c) Rating scale
- (d) Projective
- 1-e. What are the different types of attributes? (CO3, K1) 1
- (a) Nominal
- (b) Ordinal
- (c) Spacial
- (d) All of the above
- 1-f. Examples of Nominal can be: (CO3, K1) 1
- (a) ID Numbers, eye color, zip codes
- (b) Rankings, grades, height
- (c) Calender dates, phone numbers
- (d) length, time, counts
- 1-g. Find the outlier s in the given dataset: 15, 11, 9, 15, 63 (CO4, K3) 1
- (a) 11
- (b) 9
- (c) 63
- (d) 15
- 1-h. .... is a tool which is used to reduce the dimensions of the data. (CO4, K1) 1
- (a) Principal component analysis
- (b) Product Component analysis
- (c) Pre Complex analysis
- (d) None of the above
- 1-i. Tableau File Extension is.....(CO5, K1) 1
- (a) twbx
- (b) twby
- (c) twbw
- (d) twbz
- 1-j. Which of these is not a datatype in Tableau? (CO5, K1) 1
- (a) Integer
- (b) Character
- (c) Float
- (d) String
2. Attempt all parts:-
- 2.a. What is structured data? (CO1, K1) 2
- 2.b. What is a primary source of data? (CO2, K1) 2

- 2.c. Briefly explain Data Cleaning.(CO3, K2) 2
- 2.d. Define Exploratory Data Analysis.(CO4, K1) 2
- 2.e. What is TABLEAU? (CO5, K1) 2

### **SECTION-B**

30

3. Answer any five of the following:-

- 3-a. Explain the role of Data Science in various fields.(CO1, K1) 6
- 3-b. Tabulate the differences between analysis and reporting.(CO1, K1) 6
- 3-c. Differentiate between categorical data and numerical data. (CO2, K2) 6
- 3-d. Explain the advantages of data manipulation.(CO2, K2) 6
- 3.e. Describe the various steps of data cleaning.(CO3, K3) 6
- 3.f. Why organizations use time series analysis? Explain 3 examples of time series analysis.(CO4, K2) 6
- 3.g. Differentiate parameters and filters in Tableau? (CO5, K2) 6

### **SECTION-C**

50

4. Answer any one of the following:-

- 4-a. Explain different stages of Data Science.(CO1, K3) 10
- 4-b. Explain Data Science phases and lifecycle and write the names of tools for Data Science.(CO1, K3) 10

5. Answer any one of the following:-

- 5-a. Write a short note on transactional data and categorical data? (CO2, K2) 10
- 5-b. Write a short note on numeric data and graphical data.(CO2, K1) 10

6. Answer any one of the following:-

- 6-a. Describe the process of binning. How does it help in data visualization and analysis? (CO3, K3) 10
- 6-b. Describe noisy data. Which techniques are used to handle noisy data? (CO3, K3) 10

7. Answer any one of the following:-

- 7-a. During the data preprocessing step, how should one treat missing/null values? How will you deal with them?(CO4, K4) 10
- 7-b. Can PCA be used to reduce the dimensionality of a highly nonlinear dataset? Explain various limitations of PCA.(CO4, K4) 10

8. Answer any one of the following:-

- 8-a. Why Stacked Bar chart are used in Tableau? Explain its advantages.(CO5, K2) 10
- 8-b. What is a Calculated Field, and How Will You Create One? (CO5, K2) 10