Printed Page:- 03 **Subject Code:- ACSDS0603**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: VI - THEORY EXAMINATION (2023 - 2024)

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 20

1. Attempt all parts:-

1-a. A collection of information about a related topic is referred to as a_____ (CO1) 1

(a) Visualisation
(b) Analysis
(c) Conclusion
(d) Data

1-b. 3V's are not sufficient to describe big data.(CO1) 1

(a) TRUE
(b) FALSE

1-c. Which data is cheaper to collect?(CO2) 1

(a) Primary Data
(b) Secondary Data
(c) New Data
(d) Collective data

1-d. Which level of measurement has a zero point of origin?(CO2) 1

(a) Nominal
(b) Ratio
(c) Interval
(d) Ordinal

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1-e. What are the different types of attributes?(CO3) 1

(a) Nominal
(b) Ordinal
(c) Spacial
(d) All of the above

1-f. Which is not a data cleaning method?(CO3) 1

(a) Binning
(b) Clustering
(c) Regression
(d) Aggregation

1-g. …..... is a tool which is used to reduce the dimensions of the data(CO4) 1

(a) Principal component analysis
(b) Product Component analysis
(c) Pre Complex analysis
(d) None of the above

1-h. Which of the following is not an example of a time series model? (CO4) 1

(a) Naïve approach
(b) Exponential smoothing
(c) Moving Average
(d) None of the above

1-i. Where can we apply global filters?(CO5) 1

(a) Dashboards
(b) Stories
(c) Sheets
(d) All the above

1-j. The most popular data visualization library in python is _____(CO5) 1

(a) matinfolib
(b) matplotlib
(c) matpiplib
(d) pip

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2. Attempt all parts:-

2.a. What is structured data? (CO1) 2

2.b. Why do we use data dimension reduction in some cases? justify it (CO2) 2

2.c. Justify the term Regression (CO3) 2

2.d. Discuss two methods to handle missing data(CO4) 2

2.e. List some features of Tableau (CO5) 2

SECTION-B 30

3. Answer any five of the following:-

3-a.	Explain the role of Data Science in various fields.(CO1)	6
3-b.	Describe the libraries in Python used for Data Analysis and Scientific Computations.(CO1)	6
3-c.	Why do we need Data Manipulation Tools? justify it with example (CO2)	6
3-d.	How do social networks collect data? (CO2)	6
3.e.	Explain the five stages of transforming data into information. (CO3)	6
3.f.	Explain in detail how does python handle missing data and outliers ? (CO4)	6
3.g.	How Can You Optimize the Performance of a Dashboard? justify it. (CO5)	6

SECTION-C 50

4. Answer any one of the following:-

4-a.	Explain in detail about Nature of Data and its applications. (CO1)	10
4-b.	Explain the various risks of Big data.(CO1)	10

5. Answer any one of the following:-

5-a.	Describe dimensionality. Explain high dimensional data with examples.(CO2)	10
5-b.	Write various characteristics of a good data model. (CO2)	10

6. Answer any one of the following:-

6-a.	Explain the steps involved in data transformation.(CO3)	10
6-b.	How can data be reduced? Explain in detail. (CO3)	10

7. Answer any one of the following:-

7-a.	Describe multicollinearity. Differentiate between covariance and correlation. How are these terms related with each other?(CO4)	10
7-b.	Differentiate between graphical and non-graphical exploratory data analysis.(CO4)	10

8. Answer any one of the following:-

8-a.	Explain six different categories of Tableau Filters.(CO5)	10
8-b.	Explain Bar charts in Tableau. What are the different kinds of Bar Charts? (CO5)	10

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