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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)

MCA Integrated

SEM: VII - THEORY EXAMINATION (2025 - 2026)

Subject: Advance concepts of 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. Data integrity refers to:(CO1,K1)

1

- (a) Speed of data processing
- (b) Accuracy, consistency, and reliability of data
- (c) Amount of data stored
- (d) Cost of data storage

1-b. Importance of data integrity includes: (CO1,K1)

1

- (a) Reducing data storage costs
- (b) Building trust and ensuring compliance
- (c) Increasing data volume
- (d) Eliminating need for data analysis

1-c. Main objective of data cleaning involves:(CO2,K2)

1

- (a) Increasing data volume
- (b) Improving data quality
- (c) Data visualization
- (d) Data storage

1-d. Exploring raw data typically starts with:(CO2,K2)

1

- (a) Analyzing results
- (b) Identifying data types
- (c) Cleaning data
- (d) Storing data

1-e. The primary goal of data visualization. (CO3, K2)

1

- (a) Collecting data
 - (b) Cleaning data
 - (c) Making data understandable
 - (d) Storing data
- 1-f. The design principle that emphasizes using white space effectively. (CO3, K3) 1
- (a) Balance
 - (b) Contrast
 - (c) Pattern
 - (d) Unity
- 1-g. Tell the primary use of Power Query. (CO4, K3) 1
- (a) Data modeling
 - (b) Data transformation
 - (c) Data storage
 - (d) Data analysis
- 1-h. The component of Power BI that lets you create custom visualizations. (CO4, K3) 1
- (a) Power BI Desktop
 - (b) Power BI Service
 - (c) Power BI Mobile
 - (d) Power Query
- 1-i. Big Data is. (CO5, K1) 1
- (a) Small data files
 - (b) Relational databases
 - (c) Extremely large and complex datasets
 - (d) Simple data
- 1-j. A major challenge of conventional systems. (CO5, K3) 1
- (a) Handling massive volume
 - (b) Simple queries
 - (c) Real-time processing
 - (d) Small datasets
2. Attempt all parts:-
- 2.a. Define "data integrity" and explain its significance in decision-making.(CO1,K1) 2
- 2.b. In a dataset with missing values, explain how this issue can impact data analysis.(CO2,K2) 2
- 2.c. Define dynamic visualization and give an example. (CO3, K3) 2
- 2.d. Define Power BI Desktop. (CO4, K2) 2
- 2.e. Define Big Data. (CO5, K2) 2

SECTION-B

30

3. Attempt all parts:-

3.a. Answer any one of the following:-

- 3.a.(i) Explain the concept of data integrity and its critical role in organizational success. 6

- Include examples.(CO1,K2)
- 3.a.(ii) Identify various strategies for handling insufficient data in research studies. Discuss the advantages and disadvantages of each.(CO1,K2) 6
- 3.b. Answer any one of the following:-
- 3.b.(i) Explain the concept of correlation analysis and its importance in identifying relationships between variables.(CO2,K2) 6
- 3.b.(ii) Discuss the impact of inconsistent data formats on analysis and give examples of common formatting issues and their resolutions.(CO2,K2) 6
- 3.c. Answer any one of the following:-
- 3.c.(i) Discuss how data visualization impacts decision-making in organizations. (CO3, K5) 6
- 3.c.(ii) Describe the difference between qualitative and quantitative visualizations with examples. (CO3, K4) 6
- 3.d. Answer any one of the following:-
- 3.d.(i) Explain the process of importing data from Excel and flat files into Power BI Desktop. (CO4, K3) 6
- 3.d.(ii) Describe the functionalities of the Query Editor in Power BI and its role in data transformation. (CO4, K4) 6
- 3.e. Answer any one of the following:-
- 3.e.(i) Explain the evolution of Big Data and its significance in the current economy. (CO5, K4) 6
- 3.e.(ii) Explain challenges faced by conventional data processing systems in handling Big Data. (CO5, K4) 6

SECTION-C

50

4. Answer any one of the following:-
- 4-a. Examine the balance between operational objectives and data integrity, and discuss how prioritizing data integrity can lead to better long-term outcomes. (CO1,K2) 10
- 4-b. Describe an automated data-cleaning tool and analyze its functionalities, explaining how it enhances data quality and supports decisions.(CO1,K2) 10
5. Answer any one of the following:-
- 5-a. Analyze the importance of data validation throughout the data cleaning process. Discuss how validation techniques enhance overall data quality and reliability.(CO2,K4) 10
- 5-b. Explore the challenges posed by noisy data in time-series analysis. Discuss techniques for smoothing and filtering noisy data to improve accuracy in analysis.(CO2,K3) 10
6. Answer any one of the following:-
- 6-a. Analyze the relationship between data accuracy and visualization clarity. (CO3, K5) 10
- 6-b. Discuss different methods to handle missing or noisy data in visualization. (CO3, K5) 10
7. Answer any one of the following:-
- 7-a. Explain importing and loading data from different sources into Power BI Desktop 10

with examples. (CO4, K5)

- 7-b. Discuss views in Power BI Desktop and their distinct purposes in report development. (CO4, K5) 10
8. Answer any one of the following:-
- 8-a. Conclude the evolution of Big Data and explain how data transformed into an economic asset. (CO5, K4) 10
- 8-b. Explain different data processing models and their applicability to Big Data analytics. (CO5, K5) 10

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