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BTECH
(SEM V) THEORY EXAMINATION 2025-26

INTRODUCTION TO DATA ANALYTICS AND VISUALIZATION

TIME: 3 HRS

M.MARKS: 70

Note: Attempt all Sections. In case of any missing data; choose suitably.

SECTION A

1. Attempt all questions in brief.

02 x 7 = 14

Q no.	Question	CO	Level
a.	Define Data Analytics and explain its importance in decision making.	1	K2
b.	Differentiate between structured, semi-structured and unstructured data.	1	K2
c.	List and briefly explain the phases of Data Analytics lifecycle.	2	K2
d.	What is regression modeling? Mention one application.	2	K3
e.	Define data streams with one real-time example.	3	K2
f.	What is frequent itemset mining?	4	K3
g.	State two principles of human vision used in data visualization.	5	K2

SECTION B

2. Attempt any three of the following:

07 x 3 = 21

a.	Explain sources and characteristics of data with suitable examples.	1	K2
b.	Explain regression modeling and discuss its limitations.	2	K2
c.	Describe stream data model and architecture with neat diagram.	3	K3
d.	Explain Apriori algorithm and its role in frequent itemset mining.	4	K3
e.	Explain challenges involved in effective data visualization.	5	K3

SECTION C

3. Attempt any one part of the following:

07 x 1 = 07

a.	Explain Data Analytics lifecycle with a neat diagram and example.	1	K2
b.	Analyze the role of data analytics in modern organizations.	1	K3

4. Attempt any one part of the following:

07 x 1 = 07

a.	Explain Bayesian modeling and in data analytics.	2	K2
b.	Compare regression modeling and Bayesian modeling.	2	K3

5. Attempt any one part of the following:

07 x 1 = 07

a.	Explain sampling and filtering techniques in data streams.	3	K2
b.	Analyze challenges in mining high-speed data streams.	3	K3

6. Attempt any one part of the following:

07 x 1 = 07

a.	Explain clustering techniques used in data mining.	4	K2
b.	Analyze the working of K-means clustering with an example.	4	K3

7. Attempt any one part of the following:

07 x 1 = 07

a.	Explain stages of data visualization.	5	K2
b.	Evaluate the impact of human vision limitations on visualization design.	5	K3