



Paper id: 250677

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Subject Code: KIT601

Roll No:

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**BTECH**  
**(SEM VI) THEORY EXAMINATION 2024-25**  
**DATA ANALYTICS**

**TIME: 3 HRS****M.MARKS: 100****Note:** Attempt all Sections. In case of any missing data; choose suitably.**SECTION A****1. Attempt all questions in brief.****2 x 10 = 20**

Q No.	Question	CO	Level
a.	Define structured and unstructured data with examples.	1	K2
b.	Explain the phases of the data analytics lifecycle.	1	K2
c.	Apply regression analysis to predict housing prices.	2	K3
d.	How does Bayesian modeling help in data analysis?	2	K3
e.	What is a data stream model?	3	K2
f.	Apply filtering techniques on real-time Twitter data stream.	3	K3
g.	Differentiate between hierarchical and K-means clustering.	4	K4
h.	Compare Apriori and FP-Growth algorithms.	4	K4
i.	What are the basic visualization techniques in R?	5	K2
j.	Implement a basic data import and export process using R.	5	K3

**SECTION B****2. Attempt any three of the following:****10 x 3 = 30**

a.	Describe the evolution of analytic scalability and modern data analytic tools.	1	K2
b.	Implement and explain support vector machines with a real-world classification example.	2	K3
c.	Discuss decaying windows and their importance in stream analytics.	3	K2
d.	Explain the clustering techniques used for high-dimensional data.	4	K4
e.	Implement and analyze the use of Map Reduce in Big Data processing using R.	5	K3

**SECTION C****3. Attempt any one part of the following:****10 x 1 = 10**

a.	Explain the need for data analytics and describe the data analytics pipeline.	1	K2
b.	Describe key roles in a successful analytics project with real examples.	1	K2

**4. Attempt any one part of the following:****10 x 1 = 10**

a.	Apply neural networks to classify handwritten digits and explain the training process.	2	K3
b.	Analyze time series data using linear system analysis in any real-time stock dataset.	2	K3

**5. Attempt any one part of the following:****10 x 1 = 10**

a.	Describe filtering and sampling techniques for streaming data with examples.	3	K2
b.	Apply streaming algorithms to perform real-time analytics on social media sentiment.	3	K3

**6. Attempt any one part of the following:****10 x 1 = 10**

a.	Compare clustering methods in non-Euclidean space vs high-dimensional clustering using CLIQUE.	4	K4
b.	Evaluate the effectiveness of frequent pattern-based clustering in market basket analysis.	4	K4



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7. Attempt any *one* part of the following:

10 x 1 = 10

a.	Explain the role of visualization in analytics and list systems that support interactive visualization.	5	K2
b.	Implement exploratory data analysis in R using a sample dataset and interpret your findings.	5	K3

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