R18

Code No: 155AT

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, January - 2025

DATA ANALYTICS

(Common to CSE, IT)

Time: 3 Hours **Max. Marks: 75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

1.a)	Define data noise. State its impact on analytics.	[2]
b)	How does duplicate data affect data analysis?	[3]
c)	Differentiate between quantitative and qualitative data.	[2]
d)	What are the benefits of data imputation techniques?	[3]
e)	List assumptions of linear regression models.	[2]
f)	What is the importance of analytics applications in business domains?	[3]
g)	List the measures of forecast accuracy.	[2]
h)	Define object segmentation in data analysis.	[3]
i)	Define data dashboards in the context of visualization.	[2]
j)	Define complex data visualization.	[3]

PART – B

(50 Marks)

2.a)	Compare the characteristics of various data sources like signals, sensors, and GPS.	
b)	Explain the significance of data quality in ensuring reliable analytics.	[5+5]
	OR	
3.a)	Describe methods to handle missing values in large datasets.	
b)	Describe the lifecycle of data in a big data management system.	[5+5]
4.a)	Explain the significance of data modelling in business decision-making.	
b)	Explain the application of Exploratory Data Analysis (EDA) in data modelling.	[5+5]
	OR	
5.a)	Explain how tools and environments are selected for a data analytics project.	
b)	Explain the steps in building a business model using data analytics.	[5+5]
6.a)	Explain the linear regression by taking a suitable example of your choice.	
b)	Explain the concept of residual analysis and its significance in regression.	[5+5]
	OR	
7.a)	Explain the concept of least square estimation with a practical example.	
b)	Discuss the importance of model fit statistics in regression analysis.	[5+5]

8.a) Explain the concept of pruning and its role in avoiding overfitting.
b) Compare supervised and unsupervised learning techniques. [5+5]

OR

9.a) Discuss the challenges of building multiple decision trees.
b) Explain the STL approach to time series forecasting with an example. [5+5]

10.a) Compare different types of data visualization techniques.
b) Explain how complex data is visualized effectively. Give suitable examples. [5+5]

OR

11.a) Discuss the importance of icon-based visualization in big data.
b) Describe the process of designing a hierarchical visualization system. [5+5]

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