

Code No: 155EM

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, January/February - 2023****DATA ANALYTICS FOR IOT****(Computer Science and Engineering - IOT)****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 IoT. [2]
- b) What is the need of data analytics? [3]
- c) List the telematic devices. [2]
- d) What are the different types of sensors used in IoT? [3]
- e) Give the features of Parquet. [2]
- f) What is cloud infrastructure? [3]
- g) Define data visualization. [2]
- h) List the features of the Tableau. [3]
- i) Define precision, recall. [2]
- j) What is machine learning? [3]

**PART – B****(50 Marks)**

2. Describe Internet of Things architectures with suitable diagrams. [10]  
**OR**
3. Explain different types of data analytics and their application to IoT environment. [10]
4. Discuss the protocol stack used in internet of things network and the problems solved by network protocols. [10]  
**OR**
5. Make a comparison of Zigbee network with 6LoWPAN for IoT. [10]
- 6.a) Explain the steps followed in encapsulation process and the goal of encapsulation analytics.  
b) Does private subnets provide security? Justify your answer. [5+5]  
**OR**
7. Discuss the methods used to build security into analytics by cloud service providers. [10]

8. Explain the techniques to understand the data quality of IoT devices. [10]

**OR**

9. Discuss the concept of regression used in statistical analysis and R support for statistical analysis. [10]

10. Describe feature engineering with IoT data. [10]

**OR**

11.a) Demonstrate different validation methods used for IoT data.

b) Discuss the importance of bias and variance. [5+5]

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