Code No: 155EM **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, August/September - 2024
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)	Explain the basic components of an IoT architecture.	[2]
b)	Describe two challenges associated with IoT analytics.	[3]
c)	Describe the characteristics of the MQTT protocol.	[2]
d)	Explain the role of networking in IoT.	[3]
e)	List two key components of IoT data processing.	[2]
f)	Describe how cloud security is maintained in IoT analytics.	[3]
g)	List two statistical analysis techniques used in IoT data.	[2]
h)	Describe how to handle missing data in IoT time series analysis.	[3]
i)	What is the bias-variance tradeoff?	[2]
j)	Describe a common validation method used in IoT analytics.	[3]

PART – B

(50 Marks)

2. Demonstrate how an IoT-based health monitoring system can be implemented. [10]

OR

3. Identify and explain the potential bottlenecks in IoT data processing pipelines. [10]

4. Analyze the performance differences between various IoT networking connectivity protocols, such as Wi-Fi, Bluetooth, and LoRaWAN. [10]

OR

5. Evaluate the security risks associated with IoT networking and propose countermeasures. [10]

6. Implement a data processing pipeline for IoT analytics using a cloud platform such as AWS or Azure. [10]

OR

7. Compare cloud security practices for IoT data across different cloud service providers. [10]

8. Apply statistical analysis techniques to assess the quality of IoT data. Discuss the findings. [10]

OR

9. Examine different techniques for visualizing IoT data and discuss their effectiveness. [10]

10. Compare different machine learning algorithms for processing IoT data. Discuss their pros and cons. [10]

OR

11. Evaluate the ethical implications of using machine learning in IoT systems and propose guidelines for responsible use. [10]

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