Register Number:……..

KUMARAGURU
college of technology
character is life

B.E DEGREE EXAMINATIONS: NOV/DEC 2024

(Regulation 2018)

Fifth Semester

COMMON TO ALL BRANCHES

U18CSR5203: IOT Analytics

COURSE OUTCOMES

CO1: Realize the need of Data analytics, types of data generated by IOT devices and data analytics tools.

CO2: Determine the appropriate data pre-processing and analysis strategy for IoT Data analytics.

CO3: Discover the benefits of IoT core services and create IoT resources.

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)

1.	Explain the key objectives of Data Analysis.	CO1	[K2]
2.	List any four types of data generated by IoT device.	CO1	[K_1]
3.	Name the methods used to resample time series data in Pandas.	CO2	[K1]
4.	Outline the concept of data aggregation with an example.	CO2	[K2]
5.	Tell about some of the commonly used classification techniques.	CO2	[K1]
6.	Determine the factors to be considered while selecting a machine learning model.	CO2	[K_1]
7.	Infer the techniques used to handle missing data.	CO2	[K2]
8.	Interpret the concept of outlier detection.	CO2	[K_2]
9.	Identify the key challenges in IoT device management.	CO3	[K3]
10.	Summarize the concept of device shadow.	CO3	[K_2]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.	a)	Explain some of the common IoT data analysis techniques.	8	CO1	[K2]
	b)	Illustrate the use of Data Analytics in IoT-based healthcare monitoring systems.	8	CO1	[K2]
12.		Develop a python script that generates a NumPy array of random numbers and computes basic statistics (mean, median, standard deviation).	16	CO2	[K_3]

13.	Assume you work for a retail company and are tasked with evaluating the demographic information (age, gender, and location) of your customers in addition to their shopping patterns (total spent, number of purchases, and product categories). Describe the kind of data plotting schemes you plan to use in the given situation. a. Choose the plot(s) you would use to visualize the distribution of customer age across different regions? Why? b. You want to compare the average spending behavior between male and female customers. Identify the visualization techniques would best help with this comparison?	16	CO2	[K4]
14.	Analyze the use of statistical methods such as the z-score, interquartile range (IQR), and percentiles for detecting outliers in a dataset.	16	CO2	[K_4]
15.	Explain in details about linear regression models.	16	CO2	[K2]
16.	Organize the ways how AWS IoT green grass facilitates edge computing for Internet of Things applications? Talk about its salient characteristics and advantages.	16	CO3	[K1]

****