11. NOS

Roll No.

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. (Full Time) - END SEMESTER EXAMINATIONS, APRIL / MAY 2024

ELECTRONICS AND COMMUNICATION ENGINEERING
Semester 06
EC 5022 & IoT Enabled Systems Design
(Regulation 2019)

Time: 3hrs Max. Marks: 100

CO1	Articulate the main concepts, key technologies, strength and limitations of IoT
CO2	Identify the architecture, infrastructure models of IoT
CO3	Analyze the networking and how the sensors are communicated in IoT
CO4	Analyze and design different models for IoT implementation
CO5	Identify and design the new models for market strategic interaction.

BL – Bloom's Taxonomy Levels
(L1-Remembering, L2-Understanding, L3-Applying, L4-Analysing, L5-Evaluating, L6-Creating)

PART- A (10x2=20Marks)

(Answer all Questions)

Q. No.	Questions	Marks	CO	BL
1	State the Definition of IoT	**2**	1	1
2	What are the Characteristics of IoT?	**2**	1	1
3	What is the middleware in IoT?	**2**	2	1
4	List down the challenges introduced by 5G in IoT.	**2**	2	1
5	State the difference between CoAP and MQTT	**2**	3	2
6	How resource management is made in IoT?	**2**	3	2
7	List down various embedded boards used in developing IoT application.	**2**	4	1
8	List down various IEEE standards related to technologies used in IoT application.	**2**	4	1
9	How IoT is used in logistic application?	**2**	5	2
10	How IoT is used in Health care application?	**2**	5	2

PART- B (5x 13 = 65Marks)

Q. No.	Questions	Marks	CO	BL
11 (a)	Explain five different Technologies involved in enablement of IoT	**13**	1	2
	OR			
11 (b)	Detail six IoT levels and deployment templates used design and development of IoT Application.	**13**	1	2
12 (a)	With suitable example, explain the working mechanism of RFID based IoT SCADA Middleware architecture.	**13**	2	3
	OR			
12 (b)	With suitable example, explain the working mechanism of Zigbee based IoT SCADA Middleware architecture.	**13**	2	3
13 (a)	With suitable example, explain the working mechanism of 6LowPAN technology in the development of IoT application.	**13**	3	4

	OR			
13 (b)	With suitable example, explain the working mechanism of LoRAWAN technology in the development of IoT application.	**13**	3	4
14 (a)	Provide your understanding on tools used in the development of IoT applications.	**13**	4	4
	OR			
14 (b)	Provide your understanding on embedded systems used in the development of IoT applications.	**13**	4	4
15 (a)	With suitable scenario, explain usage of IoT in Retail applications.	**13**	5	5
	OR			
15 (b)	With suitable scenario, explain usage of IoT in smart cities applications.	**13**	5	5

PART- C (1x 15=15Marks)

(Q.No.16 is compulsory)

Q. No.	Questions	Marks	CO	BL
16.	Using SCADA Architecture, explain with necessary illustrative sketch, how IoT can be used in the development of Smart campus application.	**13**	5	6