RollNo. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. (Full Time) - END SEMESTER EXAMINATIONS, NOVEMBER / DECEMBER 2023

ELECTRONICS AND COMMUNICATION ENGINEERING
Semester 5
EC5022 & IOT ENABLED SYSTEM DESIGN
(Regulation2019)

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.

PART- A(10x2=20Marks)
(Answer all Questions)

Q.No	Questions	Marks	CO	BL
1	Draw the Functional blocks of an IoT Ecosystem.	2	1	1
2	Compare Fog, Edge with Cloud computing in the perspective of IoT.	2	1	2
3	Define Middleware.	2	2	1
4	What are the challenges introduced by 5G in IoT Middleware.	2	2	1
5	Compare IEEE 802.15.4 with IEEE 802.11ah in the terms of security algorithm.	2	3	2
6	Compare WSN with 6LowPAN	2	3	2
7	Why Raspberry Pi is known as exemplary device?	2	4	2
8	List out the packages supported by Python.	2	4	1
9	How IoT can be used in retail application?	2	5	2
10	What is Precision Farming?	2	5	1

PART- B(5x 13=65Marks)

Q.No	Questions	Marks	CO	BL
11 (a)	Explain your understanding on IoT Enabling Technologies.	13	1	2
	OR			
11 (b)	Explain the Communication Models and APIs used in IoT applications.	13	1	2
12 (a)	Provide your understanding on incorporation of MODBUS in IoT application.	13	2	3
	OR			
12 (b)	Provide your understanding on M2M middleware architecture.	13	2	3
13 (a)	Explain the LoRaWAN architecture used in IoT applications	13	3	3
	OR			
13 (b)	Explain the 6LowPAN architecture used in IoT applications	13	3	3
14 (a)	Write a Python program for blinking LED and controlling an LED with a switch. Also write your understanding on interfaces of Raspberry Pi.	13	4	4
	OR			
14 (b)	With simple use case, detail the Implementation of IoT with Raspberry Pi embedded board	13	4	4

15 (a)	Write your understanding of using IoT for Smart city and Ssmart Environment applications.	**13**	5	3
	OR			
15 (b)	Write your understanding of using IoT for Smart Home applications.	**13**	5	3

PART- C(1x 15=15Marks)

(Q.No.16 is compulsory)

Q.No	Questions	Marks	CO	BL
16.	Design an IoT architecture for Precision Farming system with suitable wireless technology such as wifi, LoRA etc.,Also Analyze the impact of topology and IoT deployment level on this application.	**15**	5	5