1RV23CY402

	R V College of Engineering **Department of Computer Science and Engineering** **CIE - I: Question Paper**		
Course: **(Code)**	**IOT & Embedded Computing** **(CS344AI)**	**Semester : 4th semester**	
Date : June 2024	**Duration :** 90 Minutes	**Staff :** KB/MSS/SDV/MH	
Name:	**USN :**	**Section :**	A/B/C/D/CD/CY

PART B

1	With neat Block diagram explain the LPC2148 architecture. List the Peripherals associated and their corresponding applications.	10	L2	CO2
2	a) List the differences between the General-Purpose computing systems and Embedded systems. b) Explain the Operating Modes of ARM using the Register Architecture	10	L3	CO2
3	Interface 5-digit seven segment display to LPC 2148 and write an embedded C program to display the moving string "IOT BOARD".	10	L3	CO3
4	Design a Bank locker system as per the specifications given below by clearly indicating the interface diagram and embedded C code. Requirements: a) Use LPC 2148 Microcontroller and suitable interfacing components. b) Enter a 4digit key to open the locker, If the key entered was correct open the locker door, driven by stepper motor. c) Provide a Key, to close the door. Make suitable assumptions.	10	L4	CO3
5	Explain the working of DAC module of LPC 2148 Microcontroller, and indicate the Resolution, input and output ranges. Write an embedded C program to generate triangular, staircase and rectangular waveforms.	10	L3	CO3

Course Outcomes: After completing the course, the students will be able to:-	
CO 1	Apply Embedded System and IoT fundamentals and formulate sustainable societal relevant cost effective solutions.
CO 2	Demonstrate the development of software programs using Embedded C, using Microcontrollers and different sensors and peripherals to build embedded system applications.
CO3	Design smart systems using various I/O peripherals, Sensors, embedded protocols like UART,I2C,SPI using modern tools like Keil IDE software for various domains like Healthcare, automation, agriculture, smart cities and others.
CO 4	Indulge in developing Novel multi-disciplinary IoT projects using prototype boards, with effective oral & written communication skills and working in teams.
CO 5	Engage in Lifelong Learning by investigating and executing real world societal problems using engineering tools – Cross compilers, debuggers and simulators, emerging processor and controller-based hardware platforms, IOT cloud infrastructure & protocols.

BT LEVELS	L1	L2	L3	L4	L5	L6	COS	CO1	CO2	CO3	CO4
MARKS	**	10	30	10	**	**	**	**	20	30	**