

	R V College of Engineering Department of Computer Science and Engineering CIE - III: Test 2 Question Paper		
	Subject : (Code)	Microcontroller and Embedded Systems 16CS53	Semester : B.E 5th Semester
Date : November 2018	Duration : 90 minutes	Staff : SDK/MSS/TM/KB	
Name :	USN :	Section :	A/B/C/D

Note: Answer all questions

SL.No		Marks	* L1-6	*CO
1.a	Briefly describe any five characteristics of embedded systems.	5	L1	CO1
1.b	Briefly describe the different ARM operating modes.	5	L1	CO1
2.a	Write an ALP for ARM 7, to count number of 1's in given word. Assume the number and the result are stored in registers.	5	L3	CO2
2.b	With an example explain the working of following instructions: MVN MOVS MOVEQ	5	L2	CO2
3.a	Discuss with an example the use of Pin Connect block (Pin Selection registers) of ARM LPC 2148 microcontroller.	5	L2	CO3
3.b	List the different serial protocols supported by ARM LPC 2148 microcontroller. Mention any one application of each of the protocol.	5	L3	CO3
4	Design DC Motor Speed Control System using ARM LPC 2148 microcontroller using PWM block. Draw the suitable schematic circuit and write the suitable program. (Make suitable assumptions)	10	L3	CO4
5	Interface 3 LEDs (say Red,Yellow,Green) to ARM LPC 2148 microcontroller. Write Embedded C program to simulate traffic light system. Use timers to implement the required delay. (Make suitable assumptions).	10	L3	CO4

Course Outcomes:

CO1	Acquire the knowledge of architecture of Microcontrollers (Intel 8051 variants and ARM LPC 2148) for the different applications.
CO2	Develop skills in program writing for micro controllers based applications in assembly level language and Embedded C.
CO3	Develop skills to interface different Input Output device/peripherals to Microcontroller.
CO4	Design the required system configuration with software integration and test the design for a given application.

BT Levels & CO Mappings

L1	L2	L3	L4	CO1	CO2	CO3	CO4
10	10	30	0	10	10	10	20