

FIFTH SEMESTER BTECH. (E & C) DEGREE END SEMESTER EXAMINATION DECEMBER 2021-JANUARY 2022 SUBJECT: MICROPROCESORS (ECE - 3153) MAX. MARKS: 20

Instructions to candidates

- Answer ALL questions.
- Missing data may be suitably assumed.

Q. No.	Questions	M *	C*	A*	B *
1A.	With neat interface diagram, write a program in 'C' to flash a message "LPC2148" continuously with suitable delay on 16x2 LCD. Use Port 1 pins to connect LCD to LPC2148 microcontroller.	4	2	1,2 ,3, 4,6	AP
1B.	Write an assembly code for ARM7 processor to separate the odd numbers in an array. Assume that the array has 32 bit numbers. Give the comments to explain the logic used.	3	2	1,2 ,3, 4,6	AP
1C.	 Assume register r3 contains 0x8000. What would the register r3 contain after executing the following instructions? i) STR r6, [r3, #12]! ii) STRB r7, [r3], #4 iii) LDRH r5, [r3]!, #8 iv) LDR r12, [r3, #12] v) CMP r3, r2 vi) MVN r3, r3 	3	2	1,2 ,3	U
2A.	Differentiate between ARM and Thumb instructions with the help of examples. Write an ARM7 program to show the state change from ARM to Thumb.	4	5	1,2 ,3	U
2B.	Given a number, 0xABCD5678, the digits B and C need to be extracted, write two Thumb-2 instructions that can be executed to achieve this in the unsigned and signed extended modes in Cortex M3 processor. Write the syntax and describe the function.	3	5	1,2 ,3, 4,6	AP
2C.	Compare the advantage of OMAP architecture over RISC architecture. Write a C program to generate a square wave using OMAPL138	3	5	1,2 ,3	U