Department of Technical Education

DIPLOMA COURSE IN ELECTRONICS AND COMMUNICATION ENGINEERING

Sixth Semester

ARM CONTROLLER LAB

Contact Hours/Week : 06 **Contact Hours/Semester : 96**

GRADED EXERCISES:

Section A

I) This part should be done with a simulator by using an IDE(Integrated Development Environment)

II) The Students should be introduced to the options/menu/facilities of the IDE they are using.

III) The student should write the program using assembly language.

1. Program to Find factorial of a number
2. program for 16 bit binary multiplication
3. Program to add an array of 16 bit numbers and to store the 32 bit result in internal RAM
4. Program to Disassemble a byte into its high and low order nibbles
5. Program to add two 64 bit numbers.
6. Program to find the square of a number(1 to 10) using look up table.
7. Program to find the largest/smallest number in an array of 32 numbers .
8. Program to Find the length of a null terminated string
9. Program to arrange a series of 32 bit numbers in ascending/descending order.
10. Program to count the number of ones and zeros in two consecutive memory locations.
11. Program to search for a given 32 bit number in an array of 32 bit numbers.
12. Program to Scan a series of 32 bit numbers to find how many are negative

Section B

I) This part should be done with the use of ARM7 LPC2148 kits

II)The student should write the program using C language..

1. Interface stepper motor and control its speed and direction.
2. Interface DC motor and control its speed.
3. Program to blink a group of 8 LEDs with a delay.
4. Interface push button switch & seven segment display, count the number(from 0 to 9) of times the switch is pressed and display it on Seven segment display.
5. Interface LCD module to output a message on the display.
6. Program to display the hex digits in binary to the surface-mounted LEDs
7. Program to generate a 50% duty cycle , 1Khz wave and to use it for exciting a buzzer.
8. Program to flash digits 0 to n – 1 on the seven- segment display and the surface mounted LEDs. Start with the n value in r0.
9. Write a program to generate square ,triangular and sine wave using DAC
10. Write a program to interface relay card

Scheme of Valuation

1	Record	05
2	Viva Voce	20
3	**Section A**	35
	Writing one ALP ---- 10	
	Simulation and Result -- 20	
	Print Out --- 05	
4	**Section - B**	40
	Writing One C Program - 15	
	Flash Programming & Result - 20	
	Print Out -05	
	Total	100