EMBEDDED SYSTEM DESIGN LAB-UE19EC256

Faculty: Mrs. YJP/AKY/VP/VS **Credits: 01**

List of Experiments

CYCLE I

1. Write a PYTHON program to demonstrate I/O operation of Raspberry Pi kit for ARM processor using GPIO LED interface.
   A Write a PYTHON program to demonstrate operation of buzzer and switch

2. Write a PYTHON program to interface OLED device with Raspberry Pi kit for ARM processor to display the user defined string.
   A Write a PYTHON program to interface OLED device with Raspberry Pi kit for ARM processor to display the RESULT of basic arithmetic operations carried by taking user inputs

3. Write a PYTHON program to interface Ultrasonic sensor to display various control parameters using Raspberry Pi kit for ARM processor.
   A Write a PYTHON program to interface Moisture sensor to display control parameters using Raspberry Pi kit for ARM processor.

4. Write a PYTHON program to interface temperature sensor to display control parameter using Raspberry Pi kit for ARM processor.
   A Write a PYTHON program to interface flame sensor to display control parameter using Raspberry Pi kit for ARM processor.

5. Write a PYTHON program to interface LDR sensor to display control parameter using Raspberry Pi kit for ARM processor.
   A Write a PYTHON program to interface PIR sensor to display control parameter using Raspberry Pi kit for ARM processor.

CYCLE II

6. Write an ALP to find the GCD (Greatest Common Divisor) of two numbers using ARM instructions.
   A Write an ALP to find GCD of two numbers using conditional execution and store the GCD value in memory address 0x100.

7. Write an ALP to copy and exchange the given string from source to destination using ARM instructions.
   A Write an ALP to exchange the given string and put into same address using ARM instructions.

8. Write an ALP to find the product of two matrices using with and without MLA ARM instruction.
   A Write an ALP to sort given array of elements in ascending order using ARM instruction.

9. Write an ALP to find the convolution of two sequences using with and without MLA ARM instruction
   A Write an ALP to demonstrate ARM-THUMB interworking

10. Write an ALP to find if the given number is 2 out of 5 code or not. If yes then store "YES" in destination else store "No" in destination address using ARM instruction.
    A Write an ALP to find if the given 32-bit number is palindrome or not. If yes then store "YES" in destination else store "No" in destination address using ARM instruction.

11. Demo of Bluetooth

12. Demo of Relay to control Bulb.

Lab In charge:

Mrs. YJP

Mrs. AKY

Mrs. VP

MRs.VS

Lab Internal Assessment

1 Record 15 Marks

2 Assignment 15 Marks

3 Conduction 20 Marks

Note:

1 Each assignment has a weightage of 15 Marks and the total assignment marks will not exceed maximum of 15 Marks after taking average

2 Assignments are to be submitted by the end of each lab after completion of the regular lab experiment

3 Submission of assignment and records has to be done in every lab without fail.

4 Postponement of assignment and records will lead to deduction of marks