Service course
to ECE

R-15

IV B.Tech I Semester

15AEC37-MICROPROCESSORS AND MICROCONTROLLERS LAB

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Course Objectives:

- *Developing of assembly level programs and providing the basics of the processors*
- *To provide solid foundation on interfacing the external devices to the processor according to the user requirements to create novel products and solutions for the real time problems*
- *To assist the students with an academic environment aware of excellence guidelines and lifelong learning needed for a successful professional carrier.*

List of Experiments

I. Microprocessor 8086

1. Introduction to Masm/Tasm.
2. Arithmetic Operation – Multi Byte Addition and Subtraction, Multiplication and Division – Signed and Unsigned Arithmetic Operation, ASCII – Arithmetic Operation.
3. Logic Operations – Shift and Rotate – Converting Packed BCD to Unpacked BCD, BCD to ASCII Conversion.
4. By Using String Operation and Instruction Prefix: Move Block, Reverse String, Sorting, InsertingDeleting, Length of The String, String Comparison.
5. Modular Program: Procedure, Near and Far Implementation, Recursion.
6. Dos/Bios Programming: Reading Keyboard (Buffered With And Without Echo) – Display Characters, Strings.

II. Interfacing

8259 – Interrupt Controller.
8279 – Keyboard Display.
8255 – Ppi.
8251 – Usart.

III. Microcontroller 8051

1. Reading and Writing on a Parallel Port.
2. Timer in Different Modes.
3. Serial Communication Implementation.
4. Understanding Three Memory Areas Of 00 – Ff (Programs Using Above Areas).
5. Using External Interrupts
6. Programs Using Special Instructions like Swap, Bit/Byte, Set/Reset Etc.
7. Programs Based on Short, Page, Absolute Addressing.

Course Outcomes:

- *familiarize with the assembly level programming, Design circuits for various applications using microcontrollers,*
- *An in-depth knowledge of applying the concepts on real - time applications*

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