

Vidyalankar

T.E. Sem.V [ETRX/EXTC]
Microprocessors & Microcontrollers - I

SYLLABUS

Time : 3 Hrs.

Theory : 100 Marks
Term Work : 25 Marks
Practical : 25 Marks

1. Basics of 8085:

Basic 8085 microprocessor architecture and its functional blocks, 8085 microprocessor IC pin outs and signals, address, data and control buses, 8085 features, Interrupt system of 8085, Stack and subroutine, Types of memory and memory interfacing, Decoding techniques – absolute and partial, Mapping techniques – I / O mapped I/O and memory mapped I/O, Serial I/O lines of 8085 and the implementation asynchronous serial data communication using SOD and SID.

2. Programming with 8085 :

Basic instruction set, Timing states, machine cycles and instruction cycles, Instruction timing diagram and interrupt process and timing diagram of interrupt instruction execution, Writing assembly language programs, Looping, counting and indexing operations related programs, stacks and subroutines operations related programs, Conditional call and return instructions operations related programs, Debugging programs.

3. Study and interfacing of peripherals 8155, 8255, 8253/8254, 8259 with 8085

4. Basics of 8051 :

Comparison of microprocessor and microcontroller, Architecture and pin functions of 8051 chip controller, CPU timing and machine cycles, Internal memory organization, Program counter and stack, Input/output ports, Counters and timers, Series data input and output, Interrupts, Power saving modes.

5. Programming with 8051 :

Instruction set, addressing modes, Immediate, registers, direct and indirect data movement and exchange instructions, push and pop op-codes, arithmetic and logic instructions, bit level operations, jump and call instructions, input / output port programming, programming timers, asynchronous serial data communications, and hardware interrupt service routines.

Interfacing of LCD display, hex keyboard, ADC0808, DAC0808 and stepper motor with 8051 current trends in microprocessors and practical implementation

6. Introduction to ARM Processor :

ARM family architecture, Register architecture, Memory Access and addressing modes, Arithmetic and Logical Instructions, Branching Instructions.

Comparative study of salient features of 8051 and its derivatives like 89C51, 89C52, 89C2051 AND 89C2052, Current processor and controller survey, (cost, availability, popularity)

