

## **2.11 40103 MICROCONTROLLER & APPLICATIONS**

### **UNIT-1 ARCHITECTURE OF 8051**

- 1.1 Evolution of MPU
- 1.2 MPU Vs Microcontrollers
- 1.3 Architecture, Block Diagram and Pin Details of 8051
- 1.4 Functions of Blocks and Pins

### **UNIT-2 SFR**

- 2.1 ALU and Special Functional Registers (SFR) Blocks
- 2.2 PC, PSW, Memory Mapping
- 2.3 I/O Ports, Timers and Interrupts
- 2.4 Clock, Serial Port, Instruction Set & its Cycle

### **UNIT-3 INSTRUCTION SET AND PROGRAMMING**

- 3.1 Assembling and running an 8051 program
- 3.2 Addressing Modes, Data Transfer, Arithmetic & Logical Inst
- 3.3 Rotate and Branching Instructions
- 3.4 Call, Delay, PC Instructions I/O

### **UNIT-4 TIMER, INTERRUPT & SERIAL PROGRAMMING**

- 4.1 I/O & Memory Programming
- 4.2 Timer Programming
- 4.3 Serial Programming
- 4.4 Interrupt Configuration for Internal and External & Programming

### **UNIT-5 INTERFACING EXTERNAL DEVICE WITH 8051**

- 5.1 Memory Interfacing
- 5.2 8255, ADC/ DAC Interfacing
- 5.3 Relays & Opto Isolators, Sensors Interfacing
- 5.4 Seven Segment, LCD, Stepper Motor PWM RTC Interfacing

### **Reference Books:**

1. Microprocessor and Microcontroller by R.Theagarajan, Sci tech Publications
2. The 8051 Microcontroller by Kenneth J Ayala, PenramInternationa Publication
3. 8085 Microprocessor and its applications by Ramesh gaonkar, Penram Publishers
4. 8086 Microprocessor by Douglas hall
5. Microprocessors and Interfacing by Douglas V.Hall and Hebbler,K.M, Tata McGraw-Hill