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**UNIT – I:**

General definitions of microprocessors and microcontrollers, micro processor architecture and its operations, 8085 microprocessor Architecture and signal descriptions, 8085 instructions and addressing modes , Instruction cycle, machine cycle, T-states, counters and time delays, stacks and subroutines, assembly language programming examples

**UNIT – II:**

8086/8088 Architectures, pin diagrams and timing diagrams: Register Organization, Architecture, signal descriptions, physical memory organization, General bus operation, I/O Addressing capability, Minimum and Maximum mode of 8086 System and Timings.

8086/8088 Instruction set and assembler directives: Instruction formats, Addressing modes of 8086, Instruction set of 8086/8088, Assembler directives and operators, Assembly language programming with 8086/8088

Special architectural features and related programming: Stack, Stack Structure of 8086/8088, Interrupts and ISRs, Interrupt cycle, Maskable and Non maskable Interrupts, procedures and macros, Coprocessor.

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With effect from Academic Year 2020-21 (R18)

**UNIT – III:**

Basic peripherals and their interfacing with 8086/8088: Semiconductor memory Interfacing, Dynamic RAM interfacing, Interfacing I/O ports, PIO 8255, modes of operation of 8255, Interfacing ADC, DAC, Stepper Motor, The Keyboard/ Display controller 8279, programming examples.

**UNIT – IV:**

Programmable Peripheral devices and their Interfacing with 8086 : 8259A programmable interrupt controller, 8253 programmable interval timer, DOS and BIOS function calls.

**UNIT – V:**

Programmable communication Interface 8251 USART, DMA Controller 8257. DMA Transfers and operations, Introduction to advanced processors.

**Learning Resources :**