

## PEE51102 MICROPROCESSORS AND MICROCONTROLLER

### Module-I

[10 Hours]

#### University Portion (80%):(08 Hours)

**Introduction of Microcomputer System:** Fundamental block diagram, signal, interfacing, I/O ports and data transfer concepts, timing diagram, interrupt structure of Intel 8085 processor. Introduction of Intel 8086 processor. Basic difference between 8085 and 8086 processor. Timer and Counter. (Book 1: 2.2, 2.3, 2.4, 5.7, 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 13.1)

### Module-II

[10 Hours]

#### University Portion (80%): (08 hours)

Instructions and programming of 8085 and 8086: Instruction format and addressing modes, assembly language format, data transfer, data manipulation, Arithmetic instructions, Logical instructions, control and string instruction, programming: loop structure with counting and indexing, look up table, sub routine instruction stack. Stack operation, branching programming.(Book 2: Ch. 5 and 6)

### Module-III

[10 Hours]

#### University Portion (80%):(08 Hours)

I/O Interfacing devices

Study of Architecture and programming of ICs : 8-bit input output port 8255 PPI, 8259 PIC, 8257 DMA, 8251 USART, 8279 Keyboard display controller and 8253 timer/counter-interfacing with 8085- A/D and D/A converter interfacing(Book 1: Ch. 7)

### Module-IV

[10 Hours]

#### University Portion (80%): (08 Hours)

Micro controller 8051 programming and applications. Architecture of 8051. Data Transfer, manipulation, control and I/O instruction, simple programming, keyboard and display interface.(Book 1: Ch. 9 and 10)

#### Text book:

1. Ramesh S.Gaonkar, "Microprocessor - Architecture, Programming and Applications with the 8085", Penram International publishing private limited, fifth edition.
2. Douglas V. Hall, "Microprocessors and Interfacing: Programming and Hardware",
3. *Microprocessor & Microcontroller*, N.Senthil Kumar, M.Saravanan,S. Jeevananthan, Oxford University Press

#### Reference Book:

1. Muhammad Ali Mazdi & Janice Gilli Mazdi, *The 8051 Microcontroller and Embedded System*, Pearson Education , 5th Indian reprint, 2003.
2. *Microprocessors and microcontrollers Architecture, programming and system Design 8085, 8086, 8051, 8096:* by Krishna Kant : PHI
3. *The 8051 Microcontroller*, Kenneth Ayala, Third Edition