PEL5I102 MICROPROCESSORS AND MICROCONTROLLER

MODULE-I (10 Hours)

University Portion (80%):

Introduction of Microcomputer System (08 Hours)

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)**

College/Institute Portion (20%): (02 Hours)

Logic diagram of the 74LS244 octal buffer. Logic diagram of the 2114 memory device.**(Book 2: 2.52, 2.56)** Or related advanced topics as decided by the concerned faculty teaching the subject.

MODULE-II (10 Hours)

University Portion (80%):

Instructions and programming of 8085 and 8086 (08 hours)

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)**

College/Institute Portion (20%): (02 Hours)

BCD to seven segment LED code conversion, microprocessor based development systems and assemblers.**(Book 2: 9.3, 10.1)** Or related advanced topics as decided by the concerned faculty teaching the subject.

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)

College/Institute Portion (20%): (02 Hours)

Interfacing of EPROM chip with 8085, Interfacing RAM chip with 8085**(Book 1: 6.2.2, 6.2.3)** Or related advanced topics as decided by the concerned faculty teaching the subject.

MODULE-IV (10 Hours)

University Portion (80%) (08 Hours)

1. 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)**

College/Institute Portion (20%): (02 Hours)

Close loop control of stepper motor and servo motor.RTC interfacing using I^2C bus

(Book 1: 12.7, 12.9, 12.13) Or related advanced topics as decided by the concerned faculty teaching the subject.

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",*

Reference:

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*