

AMMT12 MICROPROCESSORS AND APPLICATIONS

UNIT-1 INTRODUCTION

- 1.1 Organization of 8085: Architecture, Internal Register Organization and Pin Configuration
- 1.2 Instruction Set of 8085- addressing modes
- 1.3 Instruction machine cycles with states and timing diagram.
- 1.4 8085 assembly language programming- Examples.

UNIT II INTERFACING TECHNIQUES

- 2.1 Need for Interfacing- Memory Interfacing, address space partitioning- address map- Address decoding- Designing decoder's circuit.
- 2.2 I/O Interfacing: Data transfer schemes- programmed Synchronous and asynchronous
- 2.3 Interrupt driven Transfer- Multiple devices and multiple interrupt levels- enabling disabling and masking of interrupts.
- 2.4 DMA transfer: Cycle stealing- Burst mode- Multiple DMA devices- DMA transfer in 8085 system- serial data transfer.

UNIT-3 INTERFACING DEVICES 9

- 3.1 Programmable peripheral device (8255)- Programmable interval timer (8353)
- 3.2 Programmable communication interface (8251) (USART)
- 3.3 Programmable interrupt controller- Programmable DMA Controller (8257)
- 3.4 Programmable Keyboard/display controllers.(8279)

UNIT-4 DESIGN USING PERIPHERAL DEVICES

- 4.1 Interfacing A/D and D/A converters
- 4.2 Matrix Keyboard design using 8255 with 8085 programs.
- 4.3 Designing real time clock, detecting power failure, detecting presence of objects using 8253
- 4.4 Design of Keyboard and display interfacing using 8279
- 4.5 Design of digital transmission with modems and telephone lines using 8251 A.

UNIT-5 MICROPROCESSOR APPLICATIONS

- 5.1 Temperature monitoring system- Automotive applications
- 5.2 Closed loop process control- Stepper motor control.

Reference Books:

1. Rafiquzzaman, "Microprocessors and Microcomputer-Based System Design" 2nd Edition, Taylor & Francis, Indian Reprint, 2009
2. Ramesh Gonakar, "Microprocessor Architecture. Programming and Applications with the 8085" 5th edition – Penram International Publishing (India) Private Limited. 2005.