

(REVISED COURSE)

(3 Hours)

[Total Marks : 100

N.B. (1) Question No. 1 is **compulsory**.(2) Attempt any **four** questions out of remaining **six** questions.

1. Design a single board computer system with following specifications – 20
- 8086 processor working at 5 MHz.
 - 8087 NDP
 - 32 KB EPROM using 2764 devices.
 - 12 KB SRAM using 4KB devices.
 - Two interrupt drives 8 bit input ports.
 - Two interrupt driven 8 bit output ports.
- Design the system using absolute decoding technique. Show memory and I/o maps.
2. (a) Explain 8237 DMA Controller in detail. 10
 (b) Explain the various Data Formats supported by 8087 NDP, and convert $(20.875)_{10}$ into short real format. 10
3. (a) Explain Interrupt Structure of 8086 processor. 10
 (b) Explain operating modes of 8254 PIT and draw any four with timing waveforms. 10
4. (a) Draw block diagram of 8259 PIC and explain it's operation in brief 10
 (b) Draw timing diagram of back to back interrupt acknowledge bus cycles in minimum mode of 8086 processor and explain. 10
5. (a) List and explain various string instructions and prefixes of 8086 instruction set. 10
 (b) Show the interfacing of DRAM chips using 8203 DRAM controller and explain in brief. 10
6. (a) What do you mean by Assembler directive ? Explain with example all the directives. 10
 (b) Draw interfacing diagram of 3 PIC, one master and two slaves connected to 8086 processor and explain the operation. 10
7. Write short notes (any two) – 20
- What is microprocessor and how it become CPU of a computer ?
 - RS 232 C serial Interface.
 - Maximum mode of 8086 processor.