T. E. Computer Sem V / Rev

2 June 2010

28 : mT-F-1stHf10

Con. 3426-10.

Microprocessor
(REVISED COURSE)

AN-4232

(3 Hours)　　　　　　　　　　　　　[**Total Marks : 100**

N.B. (1) Question No. **1** is **compulsory**.
　　　 (2) Solve any **four** questions from the remaining **six** questions.

1. Design a 8086 based system consisting of the following :—　　　20
　　　(a) 8086 microprocessor working at 8 MHz
　　　(b) EPROM of 32 KB using 16 KB devices
　　　(c) SRAM of 64 KB using 32 KB devices
　　　(d) 1 input, 1 output port (both 16 bits), interrupt devices.
　Explain the design.

2. (a) What are the addressing modes in 8086 microprocessor ?　　10
　　　Explain with an example of each addressing mode.
　 (b) Explain what are Dedicated Interrupts in 8086 microprocessor Interrupt types.　10

3. (a) What is segmented memory ? Mention the advantages of segmented memory with　10
　　　reference to 8086 microprocessor.
　 (b) Draw and explain how the address/data bus is demultiplexed in 8086 microprocessor.　10
　　　Draw diagram for all 16 bits.

4. (a) Explain the necessity of a bus controller in the 8086 maximum mode system. Explain　10
　　　8288 Bus Controller in detail.
　 (b) Explain the need of Bus Arbitration. What are the various Bus Arbitration Schemes　10
　　　in loosely coupled systems.

5. (a) What are the advantages of Direct Memory Access ? Show an interfacing diagram　10
　　　of 8086 microprocessor with 8237 DMA controller.
　 (b) Explain Memory Mapped I/O and I/O mapped I/O.　　　　　　10
　　　Compare between memory mapped I/O and I/O mapped I/O with reference to 8086
　　　and 8088 microprocessor.

6. (a) Explain the need of 8259 PIC in 8086 based systems. What are the features of　10
　　　8259 PIC ?
　　　Draw initialization flowchart for 8259.
　 (b) What are the various modes of operation of 8255 PPI ? Explain in details each　10
　　　mode.

7. Write short notes on (any **four**) :—　　　　　　　　　　　　20
　　　(a) Serial communication using RS–232C
　　　(b) 8284 clock generator
　　　(c) Comparison between SRAM and DRAM
　　　(d) Addressing modes in 8085 microprocessor
　　　(e) Generation of Reset signals in 8086 based system
　　　(f) IEEE-488 GPIB standard.