

Roll No. ....

**601**

**B. E. (Sixth Semester) EXAMINATION, June, 2009**

**(Common for CS, EC, EE, EI & IT Engg.)**

**MICROPROCESSOR AND INTERFACING**

*Time : Three Hours*

*Maximum Marks : 100*

*Minimum Pass Marks : 35*

**Note :** Attempt any *one* question from each Unit. Total *five* questions are to be attempted. All questions carry equal marks.

**Unit – I**

1. (a) What are the different segments of 8086 ? Describe the organization and functionality of each segment in memory.
- (b) Write a program in 8086 assembly language to count the number in positive and negative number in a given series of numbers.

*Or*

2. (a) Give in detail, evolution of advanced microprocessors.
- (b) Explain various addressing modes of 8086 in detail. Also give suitable examples.

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**Unit – II**

3. (a) Discuss the operation of 8155 in timer mode and I/O mode.
- (b) Draw a hardware design for interfacing a seven segment LED display, illustrating the segment drives. Also explain how interfacing is done.

*Or*

4. (a) Explain different operating modes of 8255.
- (b) Explain the block diagram and operation of programmable keyboard/display interface.

**Unit – III**

5. (a) Describe the importance of Direct memory access (DMA scheme). Draw the block diagram and explain the operation of 8257 DMA controller.
- (b) Discuss how 8253 is used :
- (i) to generate delay
  - (ii) to generate square wave

*Or*

6. (a) Explain the block diagram and function of each block of 8251 USART.
- (b) Explain the function of the 8259 A interrupt controller and its operation in fully nested mode.

**Unit – IV**

7. (a) What is the need of modem ? How modem is connected to a computer ? Explain.
- (b) Explain in detail various bus standards and compare them.

*Or*

8. (a) Which RS-232C signals are used in synchronous transmission ? Which of these signals are generated by the DTE and DCE ?
- (b) What are the main transmit and receive functional blocks of a modem ? Explain the function of each unit.

**Unit – V**

9. (a) What are the functions of timers in microcontroller ?
- (b) Explain various addressing modes of 8051.

*Or*

10. (a) Describe and explain the architecture of 8051 microcontroller.
- (b) Give an overview of 8051 instruction set.