

Total No. of Questions : 5 ] [ Total No. of Printed Pages : 3

Roll No. ....

**EX-502(N)**

**B. E. (Fifth Semester) EXAMINATION, June, 2011**

**(Electrical & Electronics Engg. Branch)**

**MICROPROCESSORS AND MICROCONTROLLERS**

**[EX - 502(N)]**

*Time : Three Hours*

*Maximum Marks : 100*

*Minimum Pass Marks : 35*

**Note :** Attempt all questions. All questions carry equal marks.

1. (a) Draw and discuss the internal diagram of 8086 microprocessor. 10
- (b) Draw and discuss the machine control word of 80286 microprocessor. 10

*Or*

- (a) Draw and discuss the read and write cycle timing diagrams of 8086 in maximum mode. 10
  - (b) Explain the use of each of the following registers of 80386 microprocessor : 10
    - (i) Segment Descriptor Registers
    - (ii) Control Registers
    - (iii) Debug and Test Registers
    - (iv) System Address Registers
2. (a) What are the different instruction types of 8086 ? Explain. 10

[ 2 ]

EX-502(N)

- (b) Discuss the assembler directives of 8086 micro-processor. 10

*Or*

- (a) Describe the sequence of signals that occurs on the address bus, data bus and control bus when a microprocessor fetches the instructions. 10
- (b) Write a program for addition of a series of 8-bit numbers. The series contains hundred numbers. 10
3. (a) List the advantages of DMA technique over program data transfer. Explain the three types of data transfer i.e., burst, cycle stealing and transparent using suitable DMA controller. 10
- (b) Discuss an 8-bit ADC operation via a PPI 8255 working in mode 1 strobe input mode. Draw the timing waveform also. 10

*Or*

- (a) With the help of neat timing diagram explain the architecture and control word format for 8254. 10
- (b) Explain the block diagram and function of each block of 8251 USART. 10
4. (a) What do you understand by interrupts ? What happens when the microcontroller is interrupted ? What is meant by interrupt priorities and interrupt signal sensitivity ? 10
- (b) What is the difference between over flow and carry flag in 8051 ? Explain with an example. 10

*Or*

- (a) Enlist the salient features of 8051 family of microcontrollers. 10
- (b) Discuss the port structure and operation of 8051. 10

[ 3 ]

5. (a) Draw a flowchart showing how asynchronous serial data can be sent from port line using a software routine. 10
- (b) Discuss the 8051 connection to RS-232. 10

*Or*

Write short notes on the following : 5 each

- (a) 8051 interfacing to ADC
- (b) Serial communication modes