D 266

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2003.

Fourth Semester

Information Technology

IF 250 — MICROPROCESSOR AND MICRO CONTROLLER APPLICATIONS

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. Differentiate between memory mapped I/O and I/O mapped I/O.

2. Classify the different groups of 8085 instruction set with example.

3. Differentiate between unidirectional buffer and bi-directional buffer.

4. Give the operation of these following 8086 instructions
   (a) DAA (b) DEC (c) CBW (d) STD.

5. Name the different modes of operation in 80386 DX.

6. Write the command instruction format of 8251.

7. Sketch a simple block diagram to interface ADC with microprocessor.

8. What do you mean by an in-circuit emulator and simulator?

9. Draw the timing waveforms for external data memory read cycle for 8051.

10. Write the HSO command tag format of 8096.

PART B — ($5 \times 16 = 80$ marks)

11. (i) Draw and explain in detail about the architecture of 8086. (12)

    (ii) Differentiate between macro and procedure. (4)

12. (a) (i) Draw the pin configuration of 8085 and explain the functional usage of each pin in detail. (10)

    (ii) Write a 8085 program to generate a delay of 0.6 sec for the given crystal frequency of 5 MHz. (6)

Or

(b) (i) What are the types of interrupts in 8085? Explain in detail the hardware interrupts in 8085. (8)

(ii) Draw the timing diagram for MVI A, 30 H instruction. (4)

(iii) What do you mean by polling in 8085? (4)

13. (a) (i) Explain in detail the different addressing modes supported by 8051. (8)

(ii) Explain in detail the serial port modes in 8096. (8)

Or

(b) (i) What are the different timer mode operations of 8051? Explain them in detail. (10)

(ii) Draw the pin configuration of 8051 and explain the function of each pin in detail. (6)

14. (a) (i) Explain the I/O mode operation of 8255 in detail. (12)

(ii) What are the features of 8255? (4)

Or

(b) (i) With a neat block diagram explain the operation of 8259 PIC. (12)

(ii) Write short notes on DMA controller. (4)

15. (a) (i) With a neat block diagram explain the operation of microprocessor based temperature control system. (10)

(ii) What are the different types of optical shaft encoders? Explain them in detail. (6)

Or

(b) Write short notes on :

(i) Interfacing μp to alphanumeric displays. (10)

(ii) Digital filters. (6)
