G 212

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2003.

Fourth Semester

Information Technology

IF 250 — MICROPROCESSOR AND MICROCONTROLLER APPLICATIONS

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. What is the need for ALE signal in 8085 microprocessor?

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

3. List out the hardware resources available in 8051 microcontroller.

4. Write short note on bitwise instructions of 8051 microcontroller.

5. Explain Min/Max mode of 8086 microprocessor.

6. Give the operation of the following instructions :

   (a) DAA

   (b) DEC.

7. What do you mean by BSR mode of 8255 PPI?

8. What are the signals normally handled in ADC interfacing?

9. What are the precautions to be carried out, while interfacing high power devices with μP?

10. What are the advantages of Digital filter over Analog filter?

PART B — ($5 \times 16 = 80$ marks)

11. With suitable functional block diagram, explain the architecture of 8051 microcontrollers. Also, explain the functions of each block in detail. (16)

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

(ii) Write a 8085 assembly language program to generate a delay of 0.1 sec for the given crystal frequency of 2 MHz. (6)

Or

(b) (i) Draw the timing diagram of MVI A, $3E_H$ instruction. (8)

(ii) With suitable examples, explain the addressing modes of 8085 μP. (8)

13. (a) Explain the architecture of 8086 microprocessor in detail. (16)

Or

(b) Explain how ADC chip can be interfaced with μP. (16)

14. (a) (i) Explain the working of 8251 – serial communication interface. (12)

(ii) Write short notes on DSP. (4)

Or

(b) With a neat block diagram, explain the operation of microprocessor based temperature control system. (16)

15. (a) (i) Explain the High Speed I/O facility of 8096 microcontroller. (10)

(ii) Compare Hardware features of 8086, and Intel 32 bit/64 bit microcontrollers. (6)

Or

(b) (i) Explain the interfacing of Alpha numeric displays to microprocessors. (8)

(ii) Write an assembly language program to multiply two 8 bit binary numbers. (8)

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