T 8129

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2006.

Fifth Semester

Computer Science and Engineering

CS 1304 — MICROPROCESSORS AND MICROCONTROLLERS

(Regulation 2004)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Name the various Flag bits available in an 8085 microprocessor.

2. Give the significance of SIM and RIM instruction available in 8085.

3. What do you mean by pipelining in an 8086 processor?

4. How the 20 bit effective address is calculated in an 8086 processor?

5. What is the purpose of CLK signal in an 8086 system?

6. What is the use of Latch signal on the AD0-AD15 bus in an 8086 system?

7. Name the two modes used by the DMA processes to transfer data.

8. Name the six modes of operations of an 8253 programmable interval timer.

9. Differentiate a microprocessor and a microcontroller.

10. Differentiate RRA and RRCA instruction in 8051 microcontroller.

PART B — (5 × 16 = 80 marks)

11. (a) (i) With a neat block diagram explain the architecture of an 8085 microprocessor? (12)

(ii) List out the Maskable and Non-Maskable interrupts available in an 8085 processor. (4)

Or

(b) (i) How do the instructions of 8085 is classified based on their functions and word length? Give an example. (10)

(ii) Write an ALP to add two 8 bit numbers. (6)

12. (a) (i) With the neat sketch explain the architecture of an 8086 processor. (12)

(ii) Give the significance of O Flag, T Flag and I Flag , D flag of 8086.(4)

Or

(b) (i) Explain in detail about the various addressing modes used in 8086 processor? Give an example. (12)

(ii) Name the various segment registers and their usage in 8086 processor. (4)

13. (a) (i) Explain the MIN/MAX mode operation of an 8086 processor. (10)

(ii) Give a note on the role of a decoder in memory interfacing with example. (6)

Or

(b) (i) Explain in detail about the 8086 memory banks and the associated signals for byte and word operations. (12)

(ii) Give the significance of $\overline{RQ}/G\overline{TO}$ and $IO/\overline{M}$ signals. (4)

14. (a) (i) With a neat sketch and explain the operation of an Interrupt controller (8259). (14)

(ii) What is the use of CAS0, CAS1 and CAS2 signals? (2)

Or

(b) Draw the block diagram of a DMA controller (8237) and explain its operation. (16)

15. (a) With the help of a functional block diagram explain any one application of 8051 microcontroller. (16)

Or

(b) Give the PIN details of an 8051 microcontroller and explain. (16)
