FACULTY OF SCIENCE

M.Sc. I Semester Examination, May 2006

COMPUTER SCIENCE

Paper 1.3

(Microprocessor and Microcontrollers)

Time : 3 Hours] [*Max. Marks : 100*

Answer all questions.

Section A – (Marks: 8 × 5 = 40)

1. Construct a clocked RS Flip-Flop using logic gates and explain its working with necessary Truth table.

2. Explain the successive approximation A/D converter.

3. Discuss various types of storage memory used in micro processors.

4. Explain the instruction cycle of 8085.

5. Draw the timing diagram for memory read operation in the minimum mode 8086 and explain.

6. Mention various types of addressing modes for 8086.

7. Discuss the evolution of micro controllers.

8. Write a note on Hard disk controllers.

Section B – (Marks: 4 × 15 = 60)

9. (a) (i) Discuss different types of counters. 5

   (ii) Explain the construction and working of a four bit binary counter with necessary circuit diagram and Truth table. 10

   Or

   (b) (i) Define uninterrupted power supply. 3

   (ii) Explain the working of offline and online ups with necessary block diagrams. 6 + 6

10. (a) Explain the Architecture of micro processor 8085 with a neat block diagram.

10 + 5

Or

(b) (i) Explain various addressing modes used for 8085. 7

(ii) Explain shift and Rotate instructions of 8085. 8

11. (a) Explain different types of Assembles directives and operators used in 8086.

Or

(b) Discuss the operation of programmable peripheral interface 8255 with a neat block diagram.

12. (a) (i) Draw the block diagram of microcontroller 8051. 6

(ii) Explain CPU and port registers of 8051. 3 + 6

Or

(b) (i) Explain the Timer special function registers. 6

(ii) What are the different interrupts used in 8051. 3
Explain the interrupt special function registers. 6

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