2008

M.Sc.

1st Semester Examination

COMPUTER SCIENCE

PAPER—CS-1102.

Full Marks : 50

Time : 2 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

All notations have their usual meaning.

Module–M1
(Parallel Architecture)

Answer *Q. No.1* and any *one* from the rest.

1. Write difference between :
   (i) Intrainstruction parallelism & Interinstruction parallelism.

   (ii) Multiprocessing and multitasking. $2\frac{1}{2}+2\frac{1}{2}$

2. (i) What type of hazard arises in the following code segment ? How can you remove this hazard ? Show all techniques of hazard removal.

   lw   R1, O (R2)
   AND   R3, R1, R6
   SUB   R4, R1, R3, OR R5, R6, R3

   (ii) Define parallel processing and pipelining.   10+5

3. (i) Discuss all steps of pipelining data path with a block diagram.

   (ii) Explain Job-level parallelism and Program-level parallelism.

(Turn Over)

(iii) What is software hazard removal technique ? Explain with appropriate example.   6+4+5

Module–M2
(*Microprocessor Systems*)

Answer *Q. No.4* and any *one* from the rest.

4. Write an assembly language program (8085/8086) to find the maximum and minimum number among a given set of data stored from 2001H onwards. The number of data stored at 2000H location.   8

5. (i) Draw a schematic diagram to interface 2K bytes of EPROM with address space 0000H to 07FFH with 8085.

   (ii) Explain the control signals used for demultiplexing the address data bus with a neat circuit diagram.
                                                          6+6

6. (i) Explain with appropriate block diagram the architecture of 8086/8088.

   (ii) Draw the register organization of 8085 and explain the flags of 8085.   8+4

7. (i) In the maximum mode operation of 8086, how does the control signals are generate ?

   (ii) Explain the following instructions in reference of 8086.

      (a) $\overline{RQ}/\overline{GTO}$ and $\overline{RQ}/\overline{GTI}$

      (b) $\overline{LOCK}$

      (c) QSI, QSO

      (d) $\overline{DEN}$

   (ii) Draw the register organization of 8085 and explain the flags of 8085.   8+4

[Internal Assessment — 10]