M.Sc. 1st Semester Examination, 2013

COMPUTER SCIENCE

PAPER – COS - 102(M1 & M2)

Full Marks : 50

Time : 2 hours

The figures in the right-hand margin indicate marks

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

Illustrate the answers wherever necessary

MODULE – 1

(Parallel Architecture)

[ Marks : 25 ]

Answer any two questions

1. (a) Classify the parallel processor system according to the Flynn's.
(b) Differentiate between Array processor and Multiprocessor?

(c) What are the chief characteristics of an SMP?

2. (a) Explain the following terms:
   (i) Delayed Load
   (ii) Delayed Branch.

   (b) What is the difference between software and hardware cache coherent schemes.

   (c) What are the advantage and disadvantage of parallel processing?

3. (a) Define the following term:
   (i) speed-up
   (ii) speed-up-vector.

   (b) Draw and discuss about the vector processor architecture?

PG/IS/COS-102/13 (Continued)
(c) What do you mean by the data hazards.

4. (a) What is data hazards? How can we overcome data hazards. Explain. (2 + 3)

(b) Perform the operation $A_i \ast B_i + C_i$ for $i = 1, 2, ..., n$ using pipeline. Design and Explain. 5

[ Internal Assessment : 05 Marks ]

MODULE – 2

(Microprocessor)

[ Marks : 25 ]

Answer any two questions

1. (a) Write down the function of following pin in 8086. 3

(i) NMI

(ii) RESET.

(b) Draw and discuss about the 8086 microprocessor block diagram. 5
(c) Discuss about interrupt of 8086 microprocessor. 2

2. (a) What do you mean by 8259 PIC? Draw the block diagram and how it interface with 8086 microprocessor. 1 + 2 + 2
(b) Discuss about BSR-mode of 8255. 3
(c) Difference between 80186 and 80286 microprocessor. 2

3. (a) Write any two type addressing mode in 8086 microprocessor. 1 1/2 + 1 1/2
(b) What do you mean by the DMA and how it act? 3
(c) Write any three instruction with related logical function of 8086 microprocessor. 4

[ Internal Assessment : 05 Marks ]