

[5254]-88

B.E. (Electronics Engineering) (Semester -I)
ADVANCED COMPUTER ARCHITECTURE (Elective -II)
(2008 Pattern)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) Answer any three questions from each section.*
- 2) Answer of the two sections should be written in separate answer books.*
- 3) Neat diagrams must be drawn wherever necessary.*
- 4) Assume suitable data, if necessary.*

SECTION - I

Q1) a) Explain Handler's classification and Feng's classification for parallel computer architectures. **[12]**

b) Explain instruction level parallelism. **[6]**

OR

Q2) a) Discuss any two applications of parallel processing in detail. **[12]**

b) Explain the Von-Neuman computer architecture and its limitations. **[6]**

Q3) a) Explain the loop unrolling techniques & its use. **[8]**

b) Compare superscalar and VLIW processor. **[8]**

OR

Q4) a) Explain the internal forwarding Techniques. **[8]**

b) Explain with suitable examples, the various types of hazards in a pipeline processor. How these hazards can be resolved? **[8]**

P.T.O

- Q5) a)** What are vector processors? Discuss two different architectural configurations of vector processor. [12]
- b) Explain pipeline chaining. [4]

OR

- Q6) a)** State the characteristics of CRAY -I computer system. Draw and explain the computation section of CRAY -I vector processor. [12]
- b) Explain any two types of vector instructions. [4]

SECTION - II

- Q7) a)** Explain the algorithm to compute fast fourier transform for SIMD architecture. [10]
- b) Explain cube interconnection network and hyper cube interconnection network. [8]

OR

- Q8) a)** Explain matrix multiplication on SIMD architecture. [10]
- b) Describe the following system inter connection architectures: [8]
- i) Static interconnection
 - ii) Dynamic interconnection
- Q9) a) i)** State features of IBM power 4 processor. [4]
- ii) Explain chip multiprocessing. [4]
- b) Explain cache coherancy and bus snooping. [8]

OR

Q10)a) Explain in detail, the architecture of MPP. [8]

b) Write a note on interprocess communication and synchronization. [8]

Q11)a) What is multithreading? Explain following performance measuring parameters. [8]

i) Latency (L)

ii) Number of threads (N)

iii) Context switching overhead (C)

iv) Interval between switches (R)

b) Write a short note on latency hiding techniques. [8]

OR

Q12)a) Explain different context switching policies adopted by multithreaded architectures. [8]

b) Write short note on- [8]

i) Synchronous message passing

ii) Asynchronous message passing

