

Total No. of Questions : 12]

SEAT No. :

P1091

[Total No. of Pages : 2

[4458] - 772

**B.E. (Computer Engineering) (Semester - II)**

**ADVANCED COMPUTER ARCHITECTURE**

**(2008 Course)**

*Time : 3 Hours]*

*[Max. Marks : 100*

*Instructions to the candidates:*

- 1) *Attempt three questions from Section-I and three questions from Section-II.*
- 2) *Answers to the two sections should be written in separate books.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Assume suitable data, if necessary.*

**SECTION - I**

- Q1)* a) What is the need of high performance? Explain the Constraints of Conventional architecture. [8]
- b) Explain the mechanism for achieving the Parallelism in Uniprocessor System with example. [8]

OR

- Q2)* a) Describe Parallel Processing Applications with a suitable example. [8]
- b) What are the principles of EPIC architecture? Explain its components. [8]

- Q3)* Explain the mechanism for Instruction Pipelining. [18]

OR

- Q4)* Explain the following terms : [18]
- a) Register Stack Engine,
  - b) Software pipelining,
  - c) VLIW.

*P.T.O.*

- Q5) a) What are the vector instruction types for register based pipelined vector machines. [8]  
b) Explain design rules for Vector performance. [8]

OR

- Q6) Explain the Implementation models of SIMD Computers. [16]

### SECTION - II

- Q7) Explain Crossbar Switch and Multiport Memory. [18]

OR

- Q8) a) What is Cache coherence problem and Explain Cache coherence schemes for preventing this problem. [8]  
b) Describe NOW's architecture with block diagram. [10]

- Q9) Explain Multithreading Issues and solutions. [16]

OR

- Q10) a) Compare synchronous message passing versus Asynchronous message passing with example. [8]  
b) Explain any two approaches for the accomplishment of Latency hiding. [8]

- Q11) Explain language features for parallelism and also explain FORTRAN-90 language features and constructs. [16]

OR

- Q12) a) Write notes on Neuro-Computing and Grid Computing. [8]  
b) Describe any two parallel programming tools. [8]

