

Total No. of Questions :6]

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SEAT No. :

[Total No. of Pages :2

BE/ Insem./APR - 195

B.E. (Computer Engineering)

410450 : HIGH PERFORMANCE COMPUTING

(2012 Course) (Semester - II)

Time : 1 Hour]

[Max. Marks :30

Instructions to the candidates:

- 1) Answers to the two sections should be written in separate answer books.
- 2) Answer any three questions from each section.
- 3) Near diagrams must be drawn wherever necessary.
- 4) Figures to the right side indicate full marks.
- 5) Use of Calculator is allowed.
- 6) Assume Suitable data, if necessary.

Q1) a) Explain in detail how implicit parallelism is achieved. [4]

b) Write a note on VLIW processor. [6]

OR

Q2) a) Explain SIMD, MIMD and SIMT architecture. [6]

b) Write a short note on Superscalar Architecture. [4]

Q3) a) Discuss various mapping techniques for load balancing. [5]

b) What are the characteristics of Tasks and Interactions? [5]

OR

Q4) a) Explain memory hierarchy for Intel Nehalem [4]

b) Write a note on IBM Cell Broadband Engine (CBE) [6]

Q5) a) Explain Collective Communication and Computation Operations. [4]

b) Write note on : Topologies and Embedding. [6]

OR

Q6) a) Write an algorithm for Dijkstra's Single-Source Shortest-Path. [5]

b) Write an algorithm for Two-Dimensional Matrix-Vector Multiplication. [5]

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P.T.O.