

Total No. of Questions : 8]

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SEAT No. :

[Total No. of Pages : 2

[5561]-287

**B.E. (Computer Engineering)
HIGH PERFORMANCE COMPUTING
(2012 Pattern) (Semester-II) (410450)**

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) First two questions are compulsory. Answer three questions [(Q.3 or Q.4), (Q.5 or Q.6), (Q.7 or Q.8)]*
- 2) Neat diagrams must be drawn whenever necessary.*
- 3) Assume suitable data, if necessary.*

Q1) a) Describe the term implicit parallelism. **[5]**

b) What is the motivation behind parallelism. **[5]**

Q2) a) Define Network Topology and types it. **[7]**

b) Describe the levels of parallelism in terms of instruction, Transaction, Task. **[8]**

Q3) a) Draw and explain Intel Larrabee micro architecture. **[7]**

b) Describe the Nvidia Tesla GPU architecture with diagram. **[8]**

OR

Q4) a) Explain IBM CELL BE architecture. **[7]**

b) Explain intel Nehalem micro architecture. **[8]**

Q5) a) Explain the principles of Message-Passing Programming. **[6]**

b) Write an algorithm for Dijkstra's Single source shortest path. **[6]**

OR

P.T.O.

- Q6)** a) Write an algorithm for Two-Dimensional Matrix-Vector. [6]
b) Explain Groups and Communicators. [6]
- Q7)** a) Explain Job Allocation and Job Partitioning. [6]
b) Explain Programming shared Address space Platforms. [6]
c) Explain Thread Cancellation. [6]

OR

- Q8)** a) Explain OPENMP Standards for Directive Based parallel programming. [6]
b) Explain Parallel Best-First Search algorithm. [6]
c) Explain Shell sort algorithm with example. [6]

