Total No. of Questions : 8]

SEAT No. :

P2338

[Total No. of Pages : 2

[5254]-673
B.E. (Computer Engineering)
HIGH PERFORMANCE COMPUTING
(2012 Pattern) (End - Semester)

Time : 2.½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***First two questions are compulsory. Answer three quetions.(Q3 or Q4), (Q5 or Q6), (Q7 or Q8).***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Assume Suitable data if necessary***

Q1) a) What are applications of Parallel Computing? **[4]**

b) Explain basic working principal of VLIW processor. **[6]**

Q2) a) Explain Randomized block distribution and hierarchical mappings. **[6]**

b) Write note on : Topologies and Embedding. **[4]**

Q3) a) Implement Producer Consumer Problem using Mutex synchronization primitives in Pthreads. **[7]**

b) Describe Barrier Synchronization for shared address space Model. **[8]**

OR

Q4) a) Describe Logical Memory Model of a Thread? **[7]**

b) Why synchronization in important?Enlisht Thread APIs to for Mutex Synch. **[8]**

Q5) a) Explain sorting network with suitable diagram. **[7]**

b) Explain single source shortest path algorithm with suitable example. **[8]**

P.T.O.

OR

Q6) a) Describe different techniques for Latency Hiding. **[7]**

b) How Latency Hiding is different than Latency Reduction? **[8]**

Q7) a) Write a short note on (any two) **[15]**

i) Petascale Computing.

ii) Nano Technology.

iii) Power Aware Processing.

b) Elucidate Thread Organization in detail. **[5]**

OR

Q8) a) Write a short note on (Any two) **[15]**

i) Discrete optimization problems.

ii) Parallel Best - First - Search.

iii) Quantum Computers.

b) Intricate sorting issues in parallel computers. **[5]**