

Total No. of Questions : 8]
P3201

SEAT No. :

[Total No. of Pages : 2

[5670]-303
B.E (Computer Engineering)
HIGH PERFORMANCE COMPUTING
(2012 Pattern) (Semester - II)

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 wherever necessary.*
- 3) Assume suitable data if necessary.*

Q1) a) Explain following models **[5]**

- i) SIMD
- ii) SPMD
- iii) MIMD

b) State and explain Basic working principal of Super Scalar Processor?**[5]**

Q2) a) Write a Short note on Exploratory and Speculative Decomposition. **[5]**

b) Explain Blocking Communication using MPI. **[5]**

Q3) a) Explain Principles of Message Passing Programming (MPP)? **[8]**

b) Differentiate between thread and process. For multithreading implementation there is implicit support of architecture. **[7]**

OR

Q4) a) Explain OPENMP : a Standard for Directive Based parallel programming.**[8]**

b) Write a Short note on Groups and Communicators? **[7]**

P.T.O.

- Q5)** a) Write a short note on Job scheduling? [7]
b) Explain Matrix Multiplication and Cannons Algorithm in detail. [8]

OR

- Q6)** a) Explain speedup and efficiency attribute of performance analysis of parallel algorithms. [8]
b) Explain the concept of distributed Shared Memory. [7]

- Q7)** a) Write a short note on : (Any Two) [10]
i) Power Aware Processing
ii) Optical Computing
b) Explain the Latency hiding/Tolerating techniques and their limitations?[5]
c) Explain in detail 1 - D and 2 - D Partitioning? [5]

OR

- Q8)** a) Write a short note on : (Any Two) [10]
i) Parallel Depth First Search
ii) Parallel Best - First Search.
b) Explain the Bandwidth and Latency Limitations? [5]
c) Write a note on 0/1 integer - Linear programming problem with an example? [5]

