Total No. of Questions : 8]

SEAT No. :

P3227

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[5354]-683
B.E. (Computer Engineering)
HIGH PERFORMANCE COMPUTING
(2012 Pattern) (Semseter - 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 whenever necessary***
3) ***Assume suitable data if necessary***

Q1) a) What is Dataflow Model? **[4]**

b) State and explain Basic working principal of Super Scalar Processor? **[6]**

Q2) a) Explain Mapping Technique for load balancing? **[6]**

b) Write a Short note on Concurrency and Task-Interaction? **[4]**

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

b) Describe in details Topologies and Embedding? **[7]**

OR

Q4) a) Explain in detail Non-Blocking Communication Using MPI? **[8]**

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

Q5) a) State and explain the Performance Analysis of Parallel Algorithms? **[7]**

b) Write a short note on Job scheduling? **[8]**

OR

Q6) a) Explain in detail OPENMP: a Standard for Directive Based parallel programming? **[8]**

b) Write a short note on thread termination? **[7]**

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Q7) a) Explain the Latency hiding/Tolerating techniques and their limitations? **[8]**

b) Explain in detail 1-D and 2-D Partitioning? **[7]**

c) Explain Parallel Best-First Search algorithm in detail? **[5]**

OR

Q8) a) Explain in detail Quicksort algorithm with example? **[8]**

b) Explain the Bandwidth and Latency Limitations? **[7]**

c) Write a note on 0/1 integer-Linear programming problem with an example? **[5]**

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