D17002111

Registration No: | | | | | | | | | | |

Total Number of Pages : 01 **M.TECH**

M.TECH 1ST SEMESTER REGULAR EXAMINATIONS, DECEMBER 2017

PARALLEL COMPUTING

Branch: CS, Subject Code:MCSPE1042

Time: 3 Hours

Max Marks : 70

The figures in the right hand margin indicate marks.

PART-A

(2X10=20 MARKS)

1. Answer the following questions .

a) How Can One Ensure Mutual Exclusion Without Locks?
b) Name Some Network Architectures Prevalent In Machines Supporting The Message Passing Paradigm?
c) What is Task-parallel Computation?
d) What is task-latency and task-throughput?
e) What is the Maximum Time Speed-up possible according to Amdahl's Law?
f) What is Cache Coherence?
g) What is a Hypercube Connection? What is the diameter of an N-node Hypercube?
h) What is the memory consistency model supported by OpenMP?
i) What is the impact of eliminating shared write from PRAM?
j) What is Accelerated Cascading?

PART-B

(5 X 10=50 MARKS)

Answer any five questions from the following.

2.	a.	Explain PRAM Model with its components.	**5**
	b.	Explain Hypercube Network with properties.	**5**
3.	a.	Explain Bernstein conditions for detection of parallelism.	**5**
	b.	Explain the concept of multithreading and its use in parallel computer architecture.	**5**
4.	a)	Flynn's classification is based on multiplicity of instruction stream and data stream observed by CPU during program execution. Explain in detail.	**5**
	b)	What is the PRAM model? Which PRAM model can be used to execute any other PRAM algorithm and how?	**5**
5.		Discuss the following with respect to a parallel virtual machine.	**5**
	a)	Compiling and running of a PVM program.	
	b)	Creating and managing Dynamic process group.	**5**
6.	a)	Explain the concept of multithreading and its use in parallel computer architecture.	**8**
	b)	Define multi-threading models	**2**
7.	a)	Define array processing.	**2**
	b)	Why are array processors called as SIMD Array computers ? With the help of a Block diagram. Explain the architecture of an SIMD array processor.	**8**
8.		Write Short notes on	
	a.	PRAM.	**5**
	b.	Cloud computing.	**5**

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