

MCA (Revised)

Term-End Examination

04245

June, 2018

MCSE-011 : PARALLEL COMPUTING

Time : 3 hours

Maximum Marks : 100

Note : *Question no. 1 is compulsory. Attempt any three questions from the rest.*

1. (a) What are the problems faced in Superscalar architecture ? Explain how these problems were addressed and resolved in VLIW architecture. 10
- (b) Define permutation network using an example. Also discuss Perfect Shuffle permutation and Butterfly permutation. 10
- (c) What is a Parallel Virtual Machine ? Discuss its features and advantages. 10
- (d) Differentiate between Threads and Processes. Explain the concept of Thread with basic methods in concurrent programming languages for creation and termination of threads. 10

2. (a) Discuss the PRAM model. Which PRAM model can be used to execute any other PRAM algorithm and how can it be used ? 10
- (b) Explain at least two techniques used for optimization of a parallel code. 10
3. (a) Why are Array processors called as SIMD array computers ? Explain the architecture of SIMD array processor using a block diagram. 10
- (b) What is meant by Cluster Computing ? Explain the memory organisation in cluster computing. 10
4. (a) What are the different models of distributed systems ? Also discuss various advantages of distributed systems. 10
- (b) Illustrate Flynn's classification of parallel computer systems. Also list the features of all categories of parallel systems. 10
5. Write short notes on the following : 4×5=20
- (a) Grid Computing
- (b) Handler's Classification
- (c) Hyperthreading Technology
- (d) Bitonic Sorting Algorithm
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