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BICSE-017

B.Tech. – VIEP – COMPUTER SCIENCE AND ENGINEERING (BTCSVI)

Term-End Examination

December, 2015

BICSE-017 : PARALLEL ALGORITHMS

Time : 3 hours *Maximum Marks : 70*

Note : *Answer any* ***seven*** *questions. All questions carry equal marks.*

1. (a) Explain the various PRAM algorithms with suitable examples. *7*

(b) Discuss about the various Parallelism mechanism. *3*

2. Discuss Gaussian elimination and Gauss - Seidel algorithm for solving linear system problems with suitable examples. *10*

3. (a) Discuss the various types of processors and their organization with suitable examples. *6*

(b) Explain Flynn's taxonomy in detail with illustrations. *4*

4. Discuss the 2-D mesh SIMD and UMA multi-processor model with the help of examples. *10*

5. (a) What is sequential matrix multiplication ? Explain the various algorithms for multi-processors in detail. *7*

   (b) Explain the discrete Fourier transform with an example. *3*

6. Explain the programming model of SEQUENT, OCCAM, nCUBE and C-LINDA for parallel computation. *10*

7. (a) Explain the various methods of dynamic load balancing on multi-computers. *6*

   (b) Discuss the mapping schemes of data to processors on processor arrays. *4*

8. Discuss the Jacobi algorithm. Where is it applicable ? *10*

9. (a) With a suitable example, explain the parallel and Hyper Quick Sort. *6*

   (b) Explain Bitonic merge sort, with an unsorted list of six elements. *4*

10. (a) What is a minimum cost spanning tree ? Explain with a suitable diagram. Write an algorithm to find a minimum cost spanning tree. *5*

(b) Discuss the complexity of parallel search algorithms. *5*
