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BICSE-017

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

00884

Term-End Examination

June, 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 PRAM model of parallel computation. *5*

(b) Discuss the various performance measures of PRAM algorithms. *5*

2. State the various parallel programming languages with their properties in detail, with the help of suitable examples. *10*

3. (a) Explain Flynn's taxonomy in detail. Also discuss about super-computer speed measurement in detail. *5*

(b) Explain the parallel pipelined algorithm and data parallelism in detail. *5*

4. (a) Discuss the various algorithms for multiprocessors as well as multicomputers in detail. *5*

(b) Explain Eller's algorithm with the help of suitable examples. *5*

5. Discuss the parallel algorithm for back substitution for solving the linear equations on a UMA multiprocessor. *10*

6. (a) Discuss the parallel quick sort and hyper quick sort in detail, with the help of examples. *5*

(b) What do you mean by alpha-beta and parallel alpha-beta search ? Explain. *5*

7. What are the various performance measures and classification mechanisms of elementary parallel algorithms ? Discuss in detail with the help of suitable examples of each mechanism. *10*

8. (a) What is minimum cost spanning tree ? Discuss all pair shortest path algorithms with the help of examples. *6*

(b) Explain 2-D Mesh SIMD model. *4*

9. (a) Explain in detail the various terminologies and algorithms to solve linear system problems. *5*

(b) Discuss about processor array, MIMD algorithms and multigrid methods in detail. *5*

10. (a) Explain Inverse discrete Fourier transform with example. *5*

(b) Discuss Bitonic merge sort and Gauss-Seidel algorithm in detail. *5*