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BICSE-017

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

Term-End Examination

00173

June, 2018

BICSE-017 : PARALLEL ALGORITHMS

Time : 3 hours *Maximum Marks : 70*

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

1. Explain private memory and shared memory model for parallel sieve of Eratosthenes algorithms. *10*

2. What are the different multi-processors ? Explain them. *10*

3. Explain Bitonic sort with the help of suitable example. Prove that its complexity is $O(\log_2 n)$. *10*

4. Explain Manber and Lander's algorithm. Give suitable examples. *10*

5. Explain the hypercube SIMD model and shuffle exchange SIMD model in detail. *10*

6. Describe the fast Fourier transform with a suitable example. What is the utility of this transformation in parallel computing ? *10*

7. (a) Explain the various methods of dynamic load balancing on multicomputers. *5*

   (b) Discuss the mapping schemes of data to processors on processor array. *5*

8. (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*

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

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

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