No. of Printed Pages : 2

BICSE-017

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

00013

Term-End Examination

December, 2016

BICSE-017 : PARALLEL ALGORITHMS

Time : 3 hours *Maximum Marks : 70*

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

1. Discuss the parameters, on the basis of which Flynn's taxonomy is defined. Discuss all four categories of parallel computers, covered under Flynn's taxonomy. *10*

2. Explain the following : *5+5=10*
   (a) Data parallel approach
   (b) Model for serial computation

3. What do you understand by static scheduling ? How is static scheduling on UMA multiprocessors performed ? *10*

4. Give the salient features of any ***two*** of the following parallel programming languages : *5+5=10*
   (a) FORTRAN 90
   (b) SEQUENT C
   (c) nCUBE C

5. Explain the 2-D Mesh SIMD model and UMA multiprocessor model in detail. *5+5=10*

6. Discuss any ***two*** of the following in detail : *5+5=10*

   (a) Fast Fourier Transform

   (b) Discrete Fourier Transform

   (c) Inverse Discrete Fourier Transform

7. Explain Bitonic sort with a suitable example. Prove that its complexity is $O(\log_2 n)$. *10*

8. Write the algorithms for any ***two*** of the following : *5+5=10*

   (a) Enumeration sort

   (b) Odd-even transposition sort

   (c) Quick sort

9. Explain Manber and Ladner's algorithm. Give suitable examples. *10*

10. Differentiate between any ***two*** of the following : *5+5=10*

    (a) Branch and Bound Algorithm and Parallel Branch and Bound Algorithm

    (b) Alpha-Beta Search and Parallel Alpha-Beta Search

    (c) All Pairs Shortest Path Algorithm and Single Source Shortest Path Algorithm