

POSSESSION OF MOBILE IN EXAMINATION IN UFM PRACTICE

Name of Student ----- Enrolment No. -----

Department -----

BENNETT UNIVERSITY, GREATER NOIDA

End Semester Examination, FALL SEMESTER 2017-18

COURSE CODE:

MAX. DURATION: **TWO HOURS**

COURSE NAME: **High Performance Computing**

COURSE CREDIT: **FOUR**

MAX. MARKS: **10**

1. Brent's Theorem provides basic foundations regarding the lower and upper bounds regarding the time taken to process an algorithm using P Processors. How you arrive at the Bennett Theorem. Give your critical analysis regarding its applicability and utility in common understanding of Parallel Processing Problems. 2.5
2. Evaluate the important role of Work Optimality Expression and Weak Scalability expression when we compare the Sequential and Parallel work and time for any problem that we wish to implement using multiple parallel processors. 2.5
3. Write a complete algorithm for Bitonic sort with analysis regarding its work and span. Sub modules of Generation of Bitonic Sequences and Merging of Bitonic Sequences should also be expanded. Take a small example to justify your algorithm. 2.5
4. Jump perspective is very powerful to handle list ranking problem. It is also a generic issue to solve many similar situations in Parallel Programming. Write a Parallel List ranker algorithm and explain the jump procedure. What is the work and span of Parallel List Ranker. Also, write few other problems/applications where the jump heuristic can help in parallelizing the sequential task. 2.5