Dr Hari Singh

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-1 EXAMINATION- February, 2019

M. Tech II Semester (CSE & IT)

COURSE CODE: 14M1WCI432 MAX. MARKS: 15

COURSE NAME: Parallel Programming Techniques

COURSE CREDITS: 3 MAX. TIME: One Hour

Note: *All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

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1. We are considering an enhancement to the processor of a web server. The new CPU is 20 times faster on search queries than the old processor. The old processor is busy with search queries 70% of the time, what is the speed-up gained by integrating the enhanced CPU? (CO1) [3 **marks]**

2. Describe parallel computer architecture on the basis of Flynn's taxonomy. (CO1)**[4 marks]**

3. Write a parallel code in Open MP programming to add two matrices A[] and B[] and store the sum in matrix C[]. Provide explanation wherever necessary. (CO2) **[3 marks]**

4. Write sequential code to show (a) flow dependence (b) anti-dependence (c) output dependence. Also write the corresponding parallel codes with dependence removed using multithreading and Open MP programming. (CO2) **[5 marks]**