Class Test 5 **Date: August 31, 2022**

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY

Department of Computer Science and Engineering

L-3/T-1 CSE 305: Computer Architecture

Time: 20 minutes **Marks: 20**

Student Name: _____ Student No: _____

1. Suppose you have n processors with a shared memory. You have been tasked to find the maximum element of an array of length l. Describe how you will do it. Analyze the running time complexity. [You do not have to write any pseudo-code, you may assume $l \gg n$.] (10)

2. You have to multiply two matrices of size 3×3. Your desktop processor has 10 CPU cores with a shared ram. How will you parallelize this computation across these 10 cores. Calculate the speedup of your parallel program for this task with respect to a sequential program and the percentage with respect to its potential. You may ignore memory latencies. (10)