**CSCE 4013/5013 Cloud Computing and Security**

**Quiz #7 (20 points)**

**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, ID:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Problem #1 (10 pts)**

1. Yes / No Do you participate in this quiz?

**Problem #2 (10 pts)**

Following is a graph with the given link weights. n0 is the source node. Parallel breadth-first search (BFS) algorithm is applied to find the single source shortest path.



A node is represented by a string as follows. ID    EDGES|WEIGHTS|DISTANCE\_FROM\_SOURCE|COLOR

1. (5 points) Show the representations of 5 nodes after the first iteration of the parallel BFS algorithm.

|  |  |
| --- | --- |
| Node | Representation |
| n0 | 0 1,2|10,5|0|Black |
| n1 | 1 2,3,4|3,5,3|10|Gray |
| n2 | 2 1,3,4|4,6,2|5|Gray |
| n3 | 3 4|4|∞|White |
| n4 | 4 1,3|1,6|∞|White |

2. (5 points) Show the representations of 5 nodes after the second iteration of the parallel BFS algorithm.

|  |  |
| --- | --- |
| Node | Representation |
| n0 | 0 1,2|10,5|0|Black |
| n1 | 1 2,3,4|3,5,3|9|Gray |
| n2 | 2 1,3,4|4,6,2|5|Black |
| n3 | 3 4|4|11|Gray |
| n4 | 4 1,3|1,6|7|Gray |