**CMSC132 Fall 2015 Quiz #5, Duration 20 Minutes**

**Name (last name followed by first name):**

**Student ID:**

**Section:**

**Graphs**

Use the following graph to answer the questions below.

6

8

2

3

4

1

7

8

6

10

1. Give a possible order in which the nodes of this graph could be visited in performing a ***Breadth First Search (BFS)*** starting at vertex **C**. Pick nodes to visit using alphabetical order (when multiple choices are possible). Notice you do not need to use the algorithms described in lecture; just provide a BFS.
2. Give a possible order in which the nodes of this graph could be visited in performing a ***Depth First Search (DFS)*** starting at vertex **C**. Pick nodes to visit using alphabetical order (when multiple choices are possible). Notice you do not need to use the algorithms described in lecture; just provide a DFS.
3. Apply Dijkstra’s algorithm using **C** as the starting (source) node. Indicate the cost and predecessor for each node in the graph after processing 2 nodes (**C** and another node). Remember to update the appropriate table entries after processing the 2nd node (after it has been added to the set of processed nodes). An empty table entry implies an infinite cost or no predecessor. *Note: points will be deducted if you simply fill in the entire table with the final costs and predecessors instead of showing the table at the first two steps.*

After processing 1 node:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Node** | A | B | C | D | E | F | G |
| **Cost** |  |  |  |  |  |  |  |
| **Predecessor** |  |  |  |  |  |  |  |

After processing 2 nodes:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Node** | A | B | C | D | E | F | G |
| **Cost** |  |  |  |  |  |  |  |
| **Predecessor** |  |  |  |  |  |  |  |

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**ADDITIONAL SPACE IN CASE YOU NEED IT**