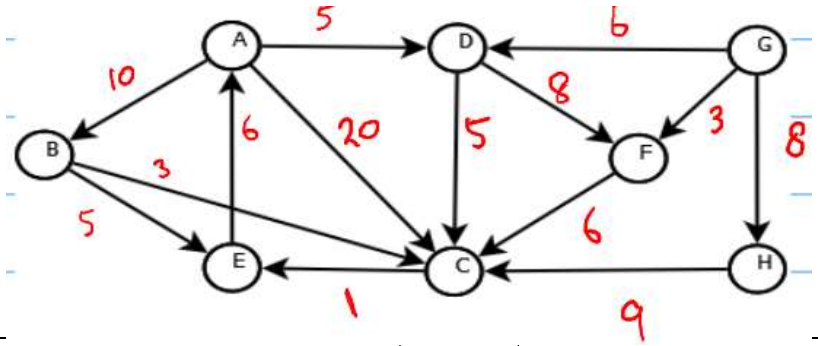
Artificial Intelligence Fall 21

Assignment 01

Submission Date: **2nd November 2021**

Q1. Apply **Breadth First Search (BFS) algorithm** through this graph. Do not consider the cost written in red, rather cost is 1 for every arc. Show the order in which nodes are expanded (i.e., to expand a node means that its children are generated), from **start node (A)** and ending with the **goal node (E)** that is found. Show the path from start to goal, or write "None". **[Marks 5]**

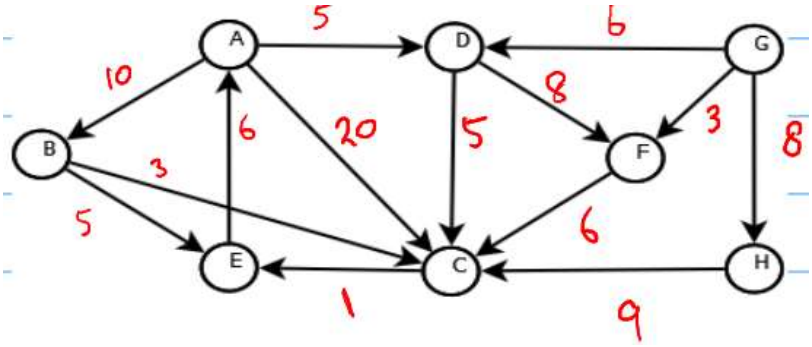


Step	Frontier	Expand	Explored: a set of Nodes

Traversed Path: _____

Actual Path: _____

Q2. Apply **Iterative Deepening Search (IDS) algorithm** through this graph. Do not consider the cost written in red, rather cost is 1 for every arc. Show the order in which nodes are expanded (i.e., to expand a node means that its children are generated), from **start node (A)** and ending with the **goal node (E)** that is found. Show the path from start to goal, or write "None". **[Marks 5]**

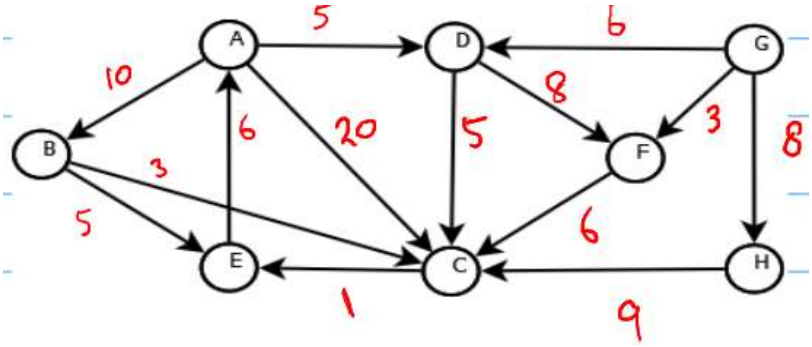


Step	Frontier	Expand	Explored: a set of Nodes

Traversed Path: _____

Actual Path: _____

Q3. Apply **Uniform Cost Search (UCS) algorithm** through this graph. Step costs are given next to each arc in red color. Show the order in which nodes are expanded (i.e., to expand a node means that its children are generated), from **start node (A)** and ending with the **goal node (E)** that is found. Show the path from start to goal, or write "None". **[Marks 5]**



Step	Frontier	Expand	Explored: a set of Nodes

Traversed Path: _____

Actual Path: _____