

Started on

Sunday, 24 March 2024, 8:51 AM

State

Finished

Completed on

Sunday, 24 March 2024, 9:08 AM

Time taken

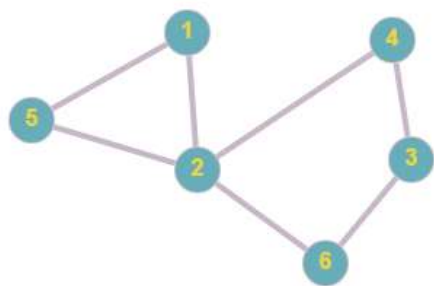
16 mins 27 secs

Question 1

Complete

Marked out of 1.00

Given the following unweighted undirected graph please fill in the corresponding adjacency matrix.



	1	2	3	4	5	6
1	0	X	X	X	X	X
2	1	0	X	X	X	X
3	0	0	0	X	X	X
4	0	1	1	0	X	X
5	1	1	0	0	0	X
6	0	1	1	0	0	0

**Question 2**

Complete

Marked out of 1.00

Which of the following represent the correct pseudo code for non recursive DFS algorithm?

Select one:

- ☐ procedure DFS-non\_recursive(G,v):  
    //let St be a stack  
    St.push(v)  
    while St is not empty  
        v = St.pop()  
        if v is not discovered:  
            label v as discovered  
            for all adjacent vertices of v do  
                St.push(v)
- ☐ procedure DFS-non\_recursive(G,v):  
    //let St be a stack  
    St.pop(v)  
    while St is not empty  
        v = St.pop()  
        if v is not discovered:  
            label v as discovered  
            for all adjacent vertices of v do  
                St.push(a) //a being the adjacent vertex
- ☐ procedure DFS-non\_recursive(G,v):  
    //let St be a stack  
    St.pop()  
    while St is not empty  
        v = St.push(v)  
        if v is not discovered:  
            label v as discovered  
            for all adjacent vertices of v do  
                St.push(a) //a being the adjacent vertex
- ☒ procedure DFS-non\_recursive(G,v):  
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    while St is not empty  
        v = St.pop()  
        if v is not discovered:  
            label v as discovered  
            for all adjacent vertices of v do  
                St.push(a) //a being the adjacent vertex

**Question 3**

Complete

Marked out of 1.00

Time Complexity of Depth First Search is:

Select one:

- ☒  $O(V + E)$
- ☐  $O(V * E)$
- ☐  $O(\log(V + E))$
- ☐  $O(V / E)$

**Question 4**

Complete

Marked out of 1.00

Given two vertices in a graph  $s$  and  $t$ , both BFS and DFS can be used to find if there is path from  $s$  to  $t$ .

Select one:

- ☒ True
- ☐ False

**Question 5**

Complete

Marked out of 1.00

Traversal of a graph is different than tree because.

Select one:

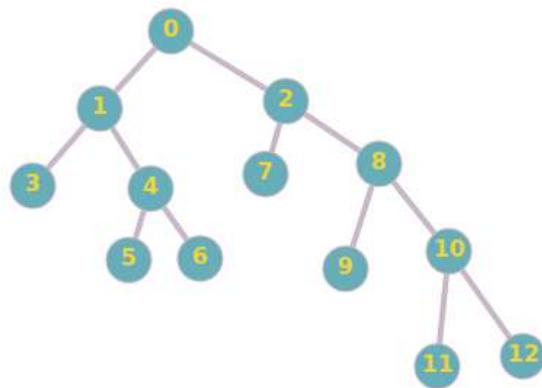
- ☒ a. There can be a loop in the graph
- ☐ b. DFS on a graph uses stack, while inorder traversal is recursive
- ☐ c. Both (a) and (b)
- ☐ d. None of the above

**Question 6**

Complete

Marked out of 1.00

Find the output of Depth-First search of the following tree using in-order traversal:



Select one:

- ☐ 0 1 2 3 4 7 8 5 6 9 10 11 12
- ☐ 0 1 3 4 5 6 2 7 8 9 10 11 12
- ☐ 3 5 6 4 1 7 9 11 12 10 8 2 0
- ☒ 3 1 5 4 6 0 7 2 9 8 11 10 12

**Question 7**

Complete

Marked out of 1.00

Which of the following are NOT a real-life application of graphs?

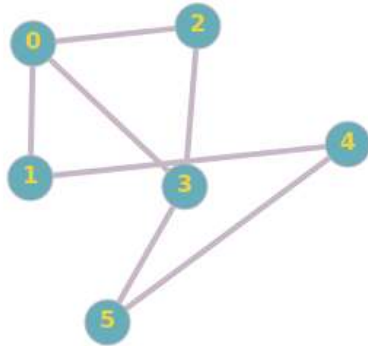
- ☐ Google PageRank
- ☐ Social networks
- ☒ Binary Search Algorithm
- ☐ Routing algorithms in computer networks

**Question 8**

Complete

Marked out of 1.00

Find a output of Breadth-First Traversal of the following graph starting from 0 node:



Select one:

- ☒ 0 1 2 3 4 5
- ☐ 0 1 4 5 3 2 0
- ☐ 0 1 4 5 3 2
- ☐ 1 0 2 4 3 5

**Question 9**

Complete

Marked out of 1.00

Which of the following data structure is used to implement DFS?

Select one:

- ☐ Tree
- ☒ Stack
- ☐ Queue
- ☐ Linked list

**Question 10**

Complete

Marked out of 1.00

When the Breadth First Search of a graph will be unique?

Select one:

- ☐ When the graph is a n-ary Tree
- ☐ When the graph has no cycle
- ☐ When the graph is a Binary Tree
- ☒ When the graph is a Linked List