HackerRank
For Work

Spring_2018_INFO6205_Se… 30 minutes

Question - 1
Q1

SCORE: **15 points**

Maximum degree of any vertex in a simple graph of vertices n is

- ○ 2n - 1
- ○ n
- ○ n + 1
- ⦿ n - 1

Question - 2
Q2

SCORE: **15 points**

Which data structure conveniently used to implement DFS?

- ⦿ Stack
- ○ Queue
- ○ Priority Queue
- ○ All of the mentioned

Question - 3
Bonus Question

SCORE: **15 points**

Please enter the numbers I will give you on the white board.

- ⦿ 48
- ○ 52
- ○ 53
- ⦿ 62
- ○ 67
- ⦿ 83
- ⦿ 93

Question - 4
Q3

SCORE: **15 points**

In a simple graph, the number of edges is equal to twice the sum of the degrees
of the
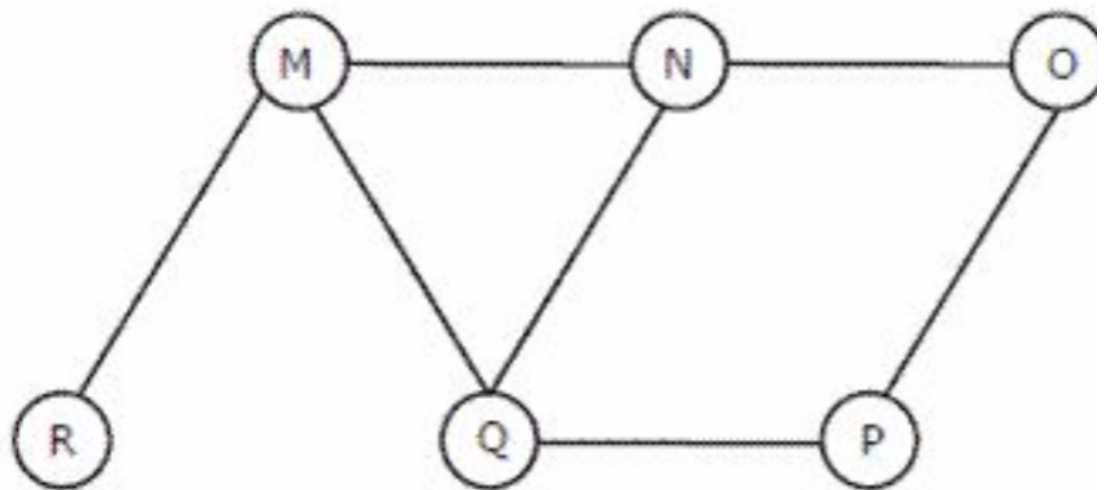vertices

- ○ True

  ⦿ False

Question - 5
Q4

SCORE: **15 points**

The Breadth First Search algorithm has been implemented using the queue data
structure.
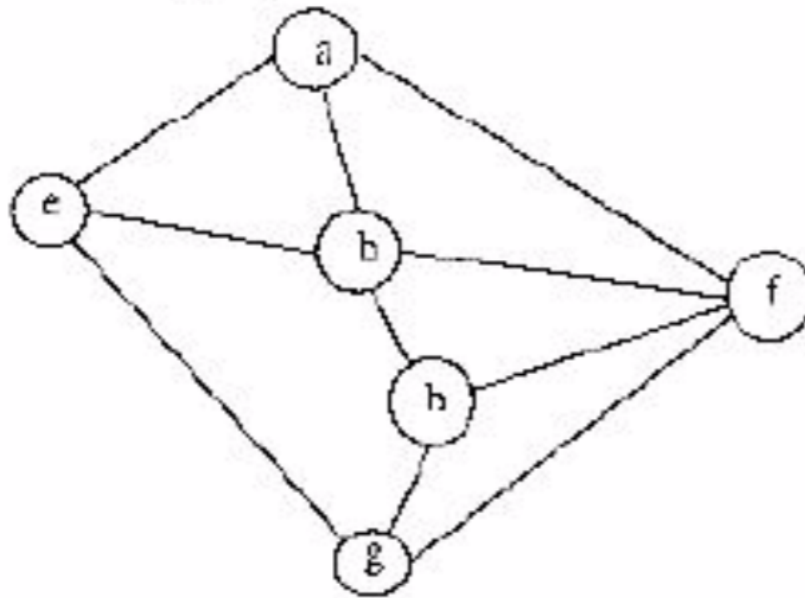One possible order of visiting the nodes of the following graph is

  ◯ MNOPQR

  ◯ NQMPOR

  ⦿ QMNPRO

  ◯ QMNPOR

Question - 6
Q5

SCORE: **15 points**

Consider the following graph

I) a b e g h f
II) a b f e h g
III) a b f h g e
IV) a f g h b e
Which are depth first traversals of the above graph?

○ I, II and IV only

○ I and IV only

○ II, III, IV only

◉ I, III and IV only

Question - 7
Q6

SCORE: **15 points**

If you are required to implement a graph , this graph contains limited(relative small) number of vertex and every two vertex are connected by an edge, this graph will be accessed frequently to get whether two vertex are connected. Which data structure is the most suitable for this graph?

○ list of edges

◉ adjacency matrix

○ adjacency lists

○ adjacency sets

Question - 8
Q7

SCORE: **20 points**

Given a graph G with a vertex V, write pseudo code to determine the degree for this vertex.
Hint : assume that G has a method on it called getAdjacent that gets adjacent vertices for a given vertex