Question - 1

SCORE: **5 points**

Graphs

Which algorithms is most suited to determining the shortest path between two nodes of a graph? DFS or BFS?

- (●) BFS
- ( ) DFS
- ( ) BFS and DFS both
- ( ) None of them

Question - 2

SCORE: **5 points**

Graphs

Which of the following statements is/are TRUE for an undirected graph?
A: Number of odd degree vertices is even
B: Sum of degrees of all vertices is even

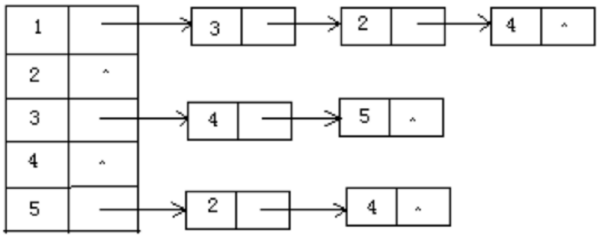
- ( ) A
- ( ) B
- (●) Both A and B
- ( ) Neither A nor B

Question - 3

SCORE: **5 points**

Graphs - 10 points

Given the following digraph's adjacency-lists, starting from Vertex 1, the order of visiting the vertices under DFS and BFS are:



- ( ) DFS: 14352 BFS: 13254
- ( ) DFS: 14325 BFS: 12345

- DFS: 13452 BFS: 13245
- DFS: 13425 BFS: 13254

Question - 4

Depth First Search

SCORE: **30 points**

Implement a depth-first search on a given instance of *Graph*. The data structure of graph is provided in the *Graph.java*. Implement the dfs method in *DepthFirstSearch.java*

Please **Do Not Edit** Test File, and **Do not run** Main().

Hint: Use the contains method of ArrayList to check if node is visited or not.