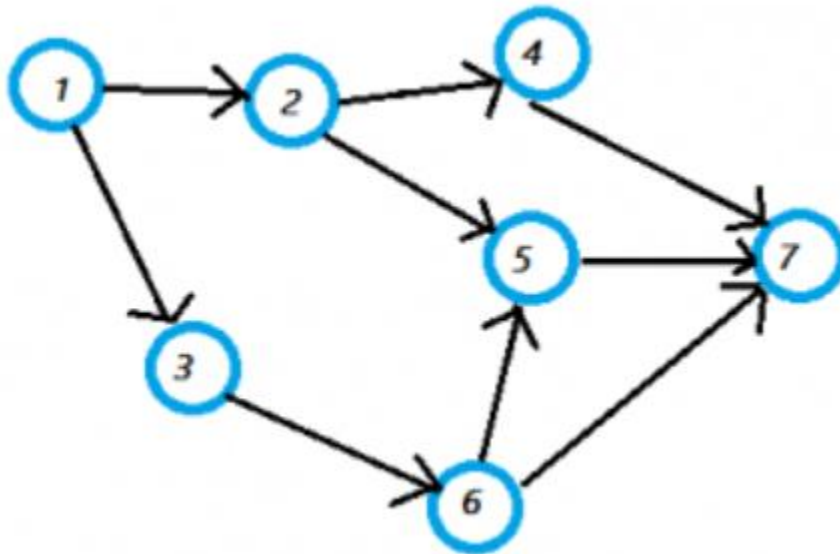1. (10 points) Given the following directed graph:

a) write/draw the adjacency matrix of the graph
b) write/draw the adjacency list of the graph
c) Starting from vertex 1, list the result of BFS
d) Starting from vertex 1, list the result of DFS

2. (15 points) Study the "**6th degree of Kevin Bacon**" problem through a generative AI tool, such as ChatGPT, write a report about your findings that include the following items:
a) The problem description
   After you study the problem description/understand the problem, play with the site
   https://oracleofbacon.org/

b) The terminologies/strategies/algorithms used to solve the problem
c) What areas/fields of interests do you think this problem can be used?

   Your report should include the list of questions that you used/asked to study the topic. What you learnt from each question. The report should be at least one page long.