

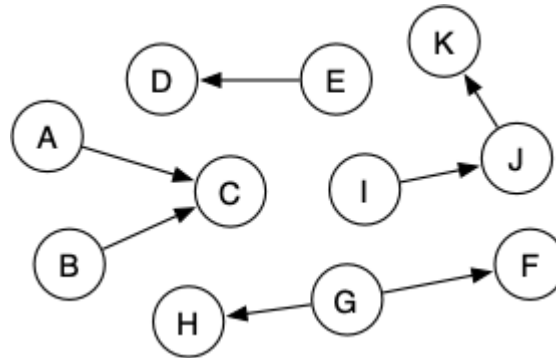
The University of New South Wales

# COMP2521 Data Structures & Algorithms Final Exam

[\[Instructions\]](#) [\[Website\]](#) [\[C\]](#)  
[\[Q1\]](#) [\[Q2\]](#) [\[Q3\]](#) [\[Q4\]](#) **[\[Q5\]](#)** [\[Q6\]](#) [\[Q7\]](#) [\[Q8\]](#)

## Question 5 (4 marks)

Consider the following digraph in answering the questions below:



- How many cliques does the graph have?
- How many connected components does the graph have?
- Which nodes are reachable from node C?
- Which nodes are reachable from node J?
- Which nodes are reachable from node G?
- What is the length (#edges) of the longest path in the graph?
- If an edge is added from C→H, how many connected components does the graph now have?
- If an edge is added from G→I, which nodes are now reachable from G?

### Instructions:

- Type your answer to this question into the file called `q5.txt`
- Submit via: **give cs2521 exam\_q5 q5.txt**  
or via: Webcms3 > exams > Final Exam > Submit Q5 > Make Submission

*End of Question*