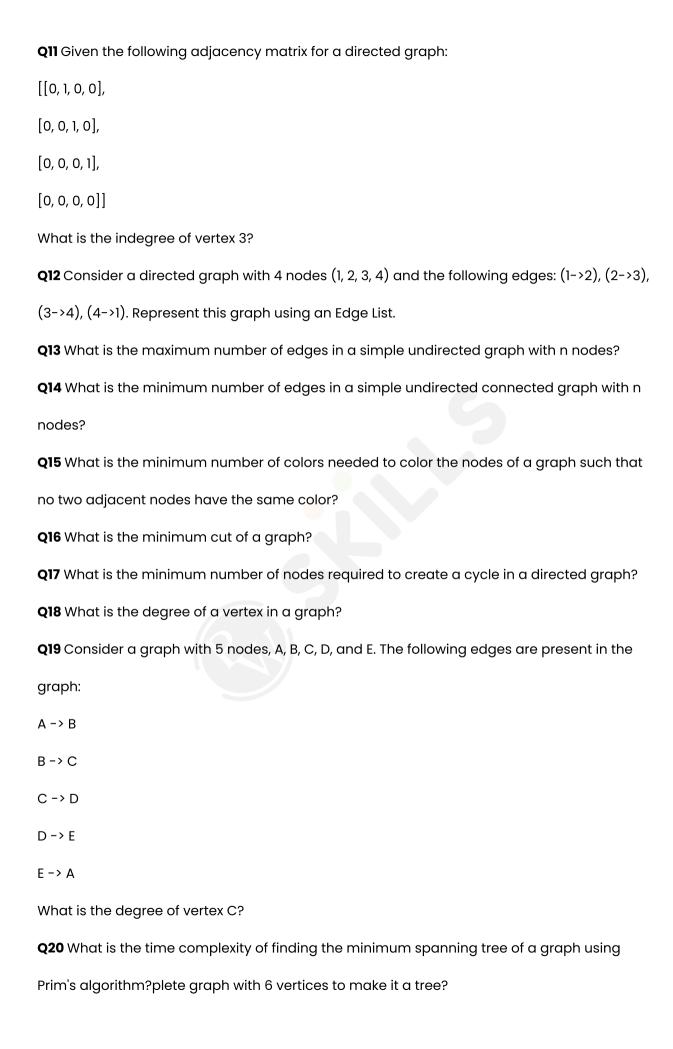


**Assignment: Graphs 1** Q1 For a graph with n nodes, how many edges are there in a complete graph? Q2 Minimum number of edges to make a graph on n nodes is? Q3 Minimum number of edges to make a connected graph of n nodes? **Q4** Insertion and deletion of edges is fastest in \_\_\_? Q5 Which representation should be used if we have a graph with a large number of nodes (>108) but with a few edges between them? Q6 Can adjacencyMatrix[i][j]!= adjacencyMatrix[j][i] in any case? If yes, what would be the type of graph called? Q7 For a graph with n nodes, how many edges are there in a complete graph? **Q8** Minimum number of edges to make a graph on n nodes is? Q9 Minimum number of edges to make a connected graph of n nodes? **Q10** Given the following adjacency list for an undirected graph: ſ [1, 2], [0, 3], [0, 3], [1, 2]

What are the adjacent vertices of vertex 1?



- **Q21** In a complete graph, what is the sum of the degrees of all the vertices?
- **Q22** If a graph has 10 vertices and 25 edges, is it a tree?
- **Q23** How many edges can be removed from a complete graph with 6 vertices to make it a tree?
- Q24 How many vertices are there in a graph with 12 edges and a maximum degree of 4?
- **Q25** What is the diameter of a complete graph with 10 vertices?
- **Q26** In a simple graph with 4 vertices and 3 edges, is there a cycle?

