

# Theory Assignment 02

Total Marks: 100

## Question: 1

- a) Write pseudocode for Dijkstra's algorithm? (Naive Approach) 10
- b) Write some limitations of the Dijkstra algorithm? (at least 3). 10

## Question: 2

- a) What is Topological Sort? Explain with Example. 15
- b) Can a topological sort be implemented in a Directed cyclic graph (DCG)? If so, explain How would you do it? 5

## Question: 3

- a) Draw a Directed Cyclic Graph(DCG) and Directed Acyclic Graph(DAG) 10
- b) Explain the differences between Directed Cyclic Graphs (DCG) and Directed Acyclic Graphs (DAG). (At least 3) 10

## Question: 4

- a) What is the purpose of a base case in a recursive function, and what happens if it is not included? 10
- b) What is recursion, and how is it different from iteration? 10

## Question: 5

- a) What is a bipartite graph? 5
- b) How can you detect whether a graph is bipartite? 15