# 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