**Data Structures and Algorithms**

**Lab Journal - Lab 10**

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Class/Section: BS-CS-3A

**Objective**

This lab session is intended to introduce students to the Graphs and concepts related to Graphs.

**Task 1 :**

Give answers to the following.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 1. | Consider the following directed graph.  10  3  5  0  4  6  Represent the given graph using an adjacency matrix and adjacency list.   |  |  | | --- | --- | | Adjacency Matrix | Adjacency List | | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | A | B | C | D | E | | A | 0 | 5 | 0 | 10 | 6 | | B | 0 | 0 | 0 | 3 | 0 | | C | 0 | 0 | 0 | 0 | 0 | | D | 0 | 0 | 0 | 0 | 0 | | E | 0 | 0 | 4 | 0 | 0 | | A B D E    B D  C D  D  E C | |
| 2. | Starting at vertex ‘A’, give the depth-first and breadth-first traversal of the graph in Question 1.  Depth First : ABDEC  Breadth First : ABDEC |
| 3. | Generate a graph from the given adjacency list. |