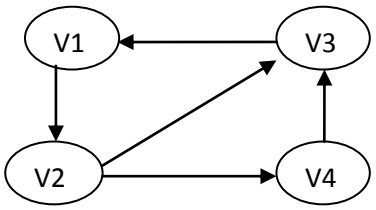
Assignment 7

Q.A. Answer the following questions in one or two lines :

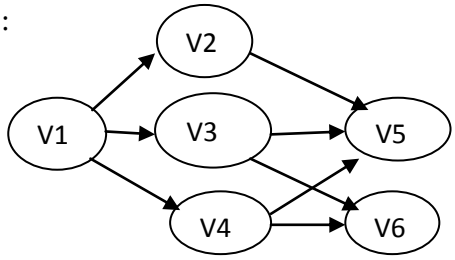
1. Define weighted Graph.
2. What is minimum spanning tree ?
3. Define critically path.
4. What is AOE network ?
5. Which data structure is used in network model ?
6. What are different types of graph ?
7. State any one application of graph.
8. Define : i) Topological sort ii) Degree of vertex iii) Complete Graph iv) Indegree of a vertex
9. State any two applications of Graph.
10. State the purpose of a Topological sort.
11. A Complete graph has n(n-1)/2 edges. State true or false. Justify.
12. Define AOV network.
13. What is minimal spanning tree.

Q. B. Answer the following questions :

1. Write an algorithm for BFS traversal of a Graph.
2. How can a graph be represented as an orthogonal list ? Explain with an example.
3. Explain graph representation using adjacency multilist with example.
4. Consider the graph. Represent the graph in Adjacency List Format. Give DFS & BFS.

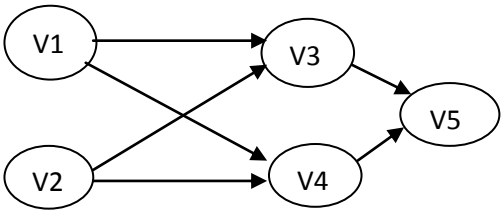


5. Consider the following Graph :

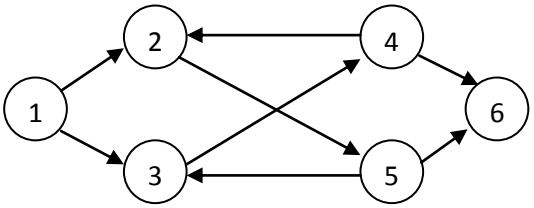


i) Write adjacency matrix. ii) Draw adjacency list. iii) DFS and BFS traversals (Start V1)

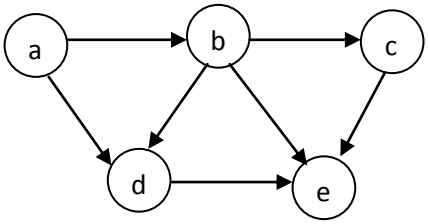
6. Define Topological sorting. What will be the topological order of activities for the AOV network a given below ?



7. Represent the following Graph with adjacency list and inverse adjacency list. Also find the indegree and outdegree of each vertex.



8. Consider the following Graph :



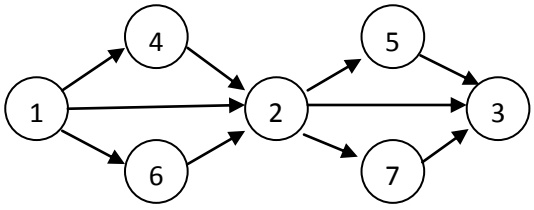
Write : i) Adjacency Matrix ii) Adjacency List iii) DFS and BFS (Source Vertex a)

9) Consider the following Adjacency matrix :

	a	b	c	d	e
a	0	1	0	1	1
b	0	0	0	0	0
c	0	1	0	0	0
d	0	0	1	0	1
e	0	0	0	0	0

i) Draw the graph ii) Find indegree and outdegree of all vertices iii) Draw the Adjacency list.

10. Consider the following Graph :



Write : i) Draw the Adjacency list ii) DFS and BFS traversal
iii) Which vertices have maximum indegree.

11. Consider the following Adjacency matrix :

	1	2	3	4
1	0	1	0	0
2	0	0	1	0
3	0	0	0	1
4	1	0	0	0

i) Draw the graph ii) Draw the Adjacency list iii) Draw the Inverse Adjacency List.