

Ysmael R. Trias Jr

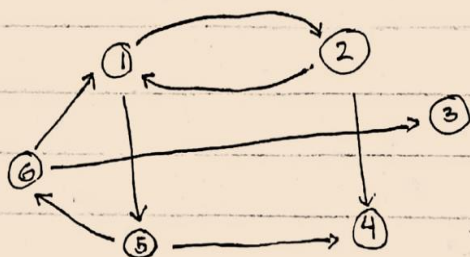
BSCPE2-1

Give the formal description of the directed graph below.

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BSCPE 2-1

Give the formal description of the directed graph below.



✓ $G_a = (V_a, E_a)$

✓ $V_a = \{1, 2, 3, 4, 5, 6\}$

✓ $E_a = \{(1, 2), (1, 5), (2, 1), (2, 4), (5, 4), (5, 6), (6, 1), (6, 3)\}$

✓ Indegree of :

1 is 2

2 is 1

3 is 1

4 is 2

5 is 1

6 is 1

✓ Outdegree of :

1 is 2

2 is 2

3 is 0

4 is 0

5 is 2

6 is 2

Vertices **adjacent to**, **adjacent from** and **incident to** nodes 1, 2, 3, 4, 5, and 6.

✓ Vertices adjacent to node 1 : 2 and 6
Vertices adjacent from node 1 : 2 and 5
Edges incident to node 1 : $(1,2), (2,1), (1,5), (1,6)$

✓ Vertices adjacent to node 2 : 1
Vertices adjacent from node 2 : 1 and 4
Edges incident to node 2 : $(1,2), (2,1), (2,4)$

✓ Vertices adjacent to node 3 : 1
Vertices adjacent from node 3 : 0 (None)
Edges incident to node 3 : $(3,6)$

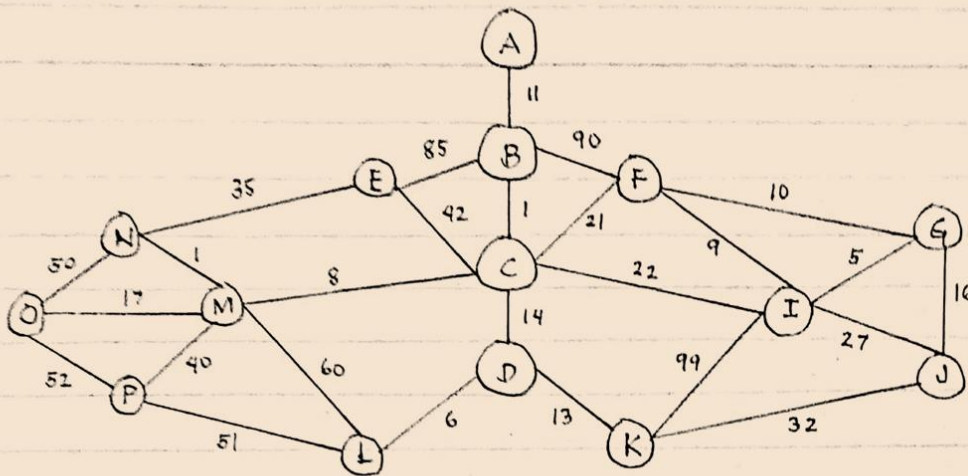
✓ Vertices adjacent to node 4 : 2 and 5
Vertices adjacent from node 4 : 0 (None)
Edges incident to node 4 : $(2,4), (4,5)$

✓ Vertices adjacent to node 5 : 1
Vertices adjacent from node 5 : 4 and 6
Edges incident to node 5 : $(1,5), (4,5), (5,6)$

✓ Vertices adjacent to node 6 : 5
Vertices adjacent from node 6 : 1 and 3
Edges incident to node 6 : $(1,6), (3,6), (5,6)$

Kruskal's and Prim's Algorithm of the graph below.

Minimum Spanning Tree



Kruskal's algorithm :

$$W(B, C) = 1$$

$$W(M, N) = 1$$

$$W(G, I) = 5$$

$$W(D, L) = 6$$

$$W(C, M) = 8$$

$$W(F, I) = 9$$

$$W(A, B) = 11$$

$$W(D, K) = 13$$

$$W(C, D) = 14$$

$$W(G, J) = 16$$

$$W(M, O) = 17$$

$$W(C, F) = 21$$

$$W(E, N) = 35$$

$$W(M, P) = 40$$

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Prim's algorithm :

$$W(A, B) = 11$$

$$W(B, C) = 1$$

$$W(C, M) = 8$$

$$W(M, N) = 1$$

$$W(C, D) = 14$$

$$W(D, L) = 6$$

$$W(D, K) = 13$$

$$W(M, O) = 17$$

$$W(C, F) = 21$$

$$W(F, I) = 9$$

$$W(G, I) = 5$$

$$W(G, J) = 16$$

$$W(E, N) = 35$$

$$W(M, P) = 40$$

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Minimum Spanning Tree:

