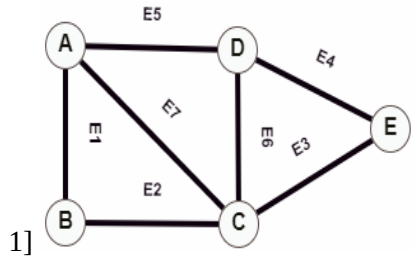
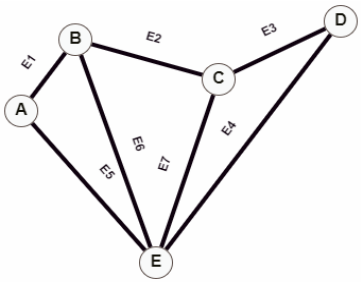
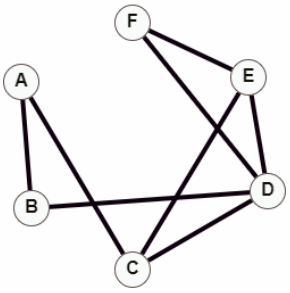
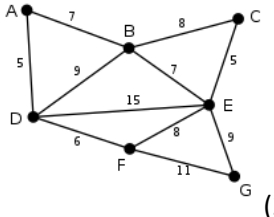
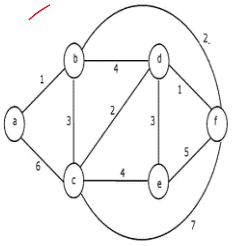
Subject: DM **SEM: 04** **AY: 2024-25**

Tutorial 3
Unit: Graphs & Trees

1	Prove that the following are equivalent for an n-vertex graph T. 1. T is a tree. 2. T is connected and has no cycles. 3. For u, v ∈ V (T), T has exactly one path between u to v. 4. T is connected and has exactly n − 1 edges.	Understanding
2	Explain the spanning tree. Consider the following graph and draw its possible spanning tree. 1]  2]  3] 	Evaluate
3	A tree T has 4 vertices of degree 2, 4 vertices of degree 3, 2 vertices of degree 4. Find the number of pendant vertices in T.	
4	How many spanning trees does K_4 have? why?	Understanding
5	Derive the minimum weighted spanning tree of following graph.  (1)  (2)	Evaluate