National University of Computer and Emerging Sciences, Lahore Campus

Course:	**Design and Analysis of Algorithms**	**Course Code:**	**CS302**
Program:	**BS(Computer Science)**	**Semester:**	**Spring 2018**
Duration:	**10 Minutes**	**Total Marks:**	**10**
Paper Date:	**26-April-18**	**Weight**	**3**
Section:	**E**	**Page(s):**	**1**
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Exam:	**Quiz 5(b)**	**Section:**	

Assume that G(V,E) is a weighted undirected graph where edge weights may not be distinct. Either proof or disproof the following statement.

If G has more than |V|-1 edges and there is a unique edge with highest weight, then this edge cannot be part of minimum spanning tree (MST).

If it is correct give the argument/justification or give a counter example if it is incorrect.

False the maximum weight edge can be part of the MST if that edge is a bridge e.g in the graph below if edge 0,3 has maximum weight then it will always be a part of MST