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| **National University of Computer and Emerging Sciences, Lahore Campus** | | | | |
| C:\Users\saif\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\final design.jpg | **Course:** | **Design and Analysis of Algorithms** | **Course Code:** | **CS302** |
| **Program:** | **BS(Computer Science)** | **Semester:** | **Spring 2018** |
| **Duration:** | **10 Minutes** | **Total Marks:** | **10** |
| **Paper Date:** | **8-May-18** | **Weight** | **3** |
| **Section:** | **C** | **Page(s):** | **1** |
| **Exam:** | **Quiz 6** | **Roll No:** |  |
| **Section:** |  |
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Given a weighted, directed graph G (V, E) with no negative-weight cycles, let m be the maximum number of edges in the shortest path from source s to v for all vertices v in V. (Here, the shortest path is by weight, not the number of edges.) Suggest a simple change to the Bellman-Ford algorithm that allows it to terminate in m + 1 passes i.e its time complexity should be O(mV), even if m is not known in advance.