Design and Analysis of Algorithm  
Quiz # 3  
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ID: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Section \_\_\_\_\_\_\_

Demand for multimedia, combining audio, video and data streams over a network, is rapidly increasing. Some of the most popular uses of multimedia are real-time interactive applications such as desktop video and audio conferencing, collaborative engineering, shared white boards, transmission of university lectures to a remote audience, and animated simulations. With the advent of the real-time interactive applications, **delay constraint** is also an important objective along with minimizing bandwidth cost. Delay constraint means that a packet must be reached within that interval. In this quiz, you need to modify Dijkstra Algorithm to accomplish that task (Illustration with clear example is enough). Figure 1 shows an example tree. Each edge consists of 2 values (**first one is bandwidth cost** and **second one is delay**). Your objective is to find a minimum bandwidth cost tree from source \_\_\_\_\_\_**a**\_\_\_\_ to all destinations with delay constraint of **5** i.e. all packets should be received from source to all destinations within this delay.

