Computer Network Assignment5

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P1:y-t-u, y-t-v-u, y-t-v-w-u, y-t-v-x-w-u, y-v-u, y-v-t-u, y-v-w-u, y-v-x-w-u, y-x-w-u, y-x-v-u, y-x-w-v-u, y-x-v-t-u, y-x-w-v-t-u, y-z-x-w-u, y-z-x-v-u, y-z-x-w-v-u, y-z-x-v-t-u, y-z-x-w-v-t-u (I used picture in P3, the solution of this kind problems is just like the deep search of binary tree) .

P7:a.D(x->w)=2, D(x->y)=2+2=4, D(x->u)=2+5=7.

b.If c(x,y)>=1, the least cost path from x to u will cost at least 7, so a change in c(x,y) will not cause x to inform its neighbors of any changes.

If c(x,y)<1, then the least cost path now changes to pass through y and has cost c(x,y)+6, which is less than 7.

If c(x,w)<2, the path will cost 5+c(x,w), also ,if c(x,w)>6, the path will change to pass y, at a least cost of 11.

c.Any change will not cause x to inform its neighbors of a new minimum-cost path to u.

P9:No, because decreasing link will not create a loop. Connecting two nodes with a link is equivalent to decreasing the link weight from infinite to the finite weight.

P13:No, there are issues to be considered in the route selection process. It is very likely that a longer loop-free path is preferred over a shorter loop-free path due to economic consideration. For example, an AS might prefer to send traffic to one neighbor instead of another neighbor with shorter AS distance.

P19:Advise to B is 2 routes, AS-paths A-W and A-V. Advise to C is one route, A-V. C receives AS paths: B-A-W, B-A-V, A-V.