Q. Consider two hosts are connected by a router where the distances (D1 and D2) and the transmission rates (R1 and R2) are given in the following diagram. Suppose the processing delays are negligible, there is a queuing delay of 0.005 second at the router; the propagation speed over both links is 2.5 x 108 meter/sec. If we want to send a packet of 400 kilobits from A to B and the router implements stop-and-forward routing method, how long will be required to reach the entire packet at host B?



Transmission delay:

R=link bandwidth (bps)

L=packet length (bits)

time to send bits into link = L/R

Propagation delay:

d = length of physical link

s = propagation speed in medium ( m/sec)

propagation delay = d/s

In this problem, Host A to router

Trans. Delay = = 0.2 sec

Prop. Delay = = 0.04 sec

At the router 0.005 sec queying delay will be added.

Router to Host B

Trans. Delay = = 0.267 sec

Prop. Delay = = 0.02 sec

Therefore, total delay = (0.2 + 0.04 + 0.005 + 0.267 + 0.02) sec =0.532 sec