# Homework #2 – Sowmya 2337911

1. Propagation Delay:

PD = d/s where d= length of the physical link

s= propagation speed

d = 5000 x 103 m , s = 2.5 X 108

Time taken to move from 1switch to other ie.

PD = (5000 x 103 m)/( 2.5 X 108 ) = 5/(2.5 X 102) = 1/50 s = **20ms**

1. Queuing delay for 1st packet is 0, 2nd packet is L/R,3rd packet is 2L/R likewise Nth packet is (N-1)L/R

So, Average rate is sum of queuing delays / N

i.e Average queuing rate is [0+L/R+2LR+-----(N-1)/R]/N

A.Q = (L/R)[1+2+…N-1] /N **= (N-1)L/2R**

3. a)TCP b) UDP (as UDP is faster than TCP) c)TCP d) Neither TCP or UDP e) TCP

4. a) gaia.cs.umass.edu/cs453/index.html

b) HTTP 1.1

c)Netscape

d)Persistent (because of connection:keep-alive)

5.

RTT between the local host and server containing objects

Time taken for TCP connection and request and response is

**RTT+RTT**

Time taken to get Html and 3 images is **4 X 2 RTT**

Considering negligible time to access server ip from local cache

1. 2RTT+8 RTT = **10 RTT**
2. 2 RTT+2 RTT= **4RTT**
3. 2RTT+ RTT= **3RTT**

## References : Applayer ppt, overview ppt in canvas , Wiki.