**Part A**

*1Mb = 1,000,000b*

*1s = 1000msecs*

**Senario1:**

1-1/3 1/3-2/3 2/3-1

1/3 give to 1st slot

2nd slot: 2.88/9 = 0.32 s = 320 msecs <0.333

3rd slot: 0.33333

**t1 = 320 + 333.333 +500 = 1153.333 msecs**

1/3 give to 1st slot

2nd slot: 0.96/9 = 0.10666666666s = 106.667 msecs

**1500 + 333.333 + 106.667 = 1940 msecs**

**Senario2:**

****

Packet transmission delay = time needed to transmit L-bit packet into link

= L(bits)/R(bits/sec)

Four sources of packet delay: nodal processing, queueing, transmission, propagation

dnodal = dproc + dqueue + dtrans + dprop

dtrans = L/R L: packet length(bits) R: link bandwidth(bps)

dprop = d/s d: length of physical link s: propagation speed (~2x10­8m/sec)

L1:

L, packet size, 100bytes, 800bits R, rate of transmission is varying

dtrans = L/R = 800/10^8 = 0.0008 s

d, length of the link between the two routers is varying, propagation speed is varying

dprop = d/s = 240/(2\*10^8) = 0.0000012 s

L2: 800/7000 + 36000000/(3\*10^8)

L4: 800/10^8 + 40/(2\*10^8)

L5: 800/10^8 + 3200000/(2\*10^8)

**dnodal = 251.103 + 1 + 1 + 0.25 = 253.353 msecs - 252.563**

252.563\*2 = 505.127

741.690

978.254

2243.623

3058.911

10366.134

11312.388

**Senario3:**

1,8

2,3,4,5,6,7

**Part B**

Firefox

Microsoft – ISS/7.0

Yes

8 (64-56)

3851697578

2747564191

00011000

63.116.243.97

110sec

c:7 s:5

5888

1514 11.1448

Q12. 4

38

39

0





