Nov01

1.

(a)

(i)

(ii)

(iii)

(b)

Let be packet size, overhead size, number of packets respectively.

For ,

For ,

This is a minimum since when .

2

(a)

Time taken to transmit 1 frame

Propagation delay

No. of frames on the link

Since

we have 3 frames sent every , with 0.1 probability of frame drop.

Thus, we have 2.7 frames sent every .

(b)

(c)

Let rate be R.

Using stop-and-wait ARQ, there is 1 frame sent every , with 0.2 probability of frame drop.

Thus, 0.8 frames sent every

We require

(b)

3

(a)

A waits 0 or 1 slots

(b)

B waits slots.

(c)

(d)

For backoff race i, A’s chance of winning is