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Chp - 1

P7 Given:

Propogation delay - 10 ms   ①
Transmission   : 2 mbps (mega bits per second)
Analog → Digital Conversion speed = 64 KBps

Packet sent = 56 byte
            = 56 KB
            = 448 bits

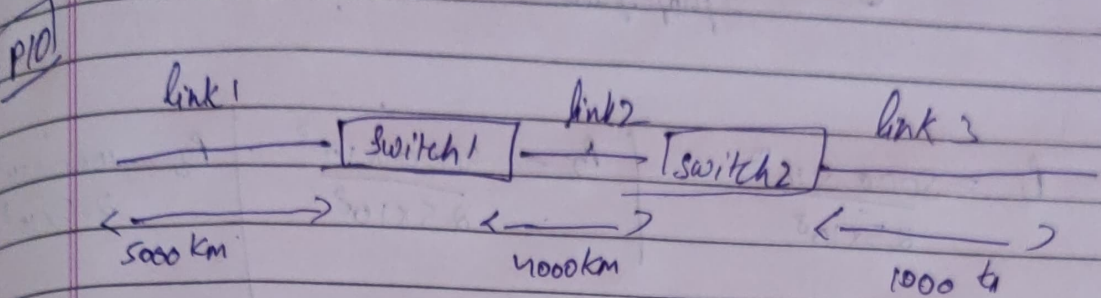- Packet Tran time

  2mb — 1s
  448 b — ?

  $$\frac{448}{2 \times 10^6} = 0.224 \text{ ms}$$

- Analog → digital time

  64 Kb — 1s   → $\frac{448}{64 \times 10^3}$ = 7 ms
  448 b → ?

Total time $= ① + ② + ③$

$= 17 ms$

link 1 ————→ [Switch 1] link 2 ——→ [Switch 2] link 3 ————→

←——→ 5000 km   ←——→ 4000 km   ←——→ 1000 km

Given:

Size of Packet: 1500 bytes

$= 1500 \times 8$ bits

for each link:

Prop Speed $= 2.5 \times 10^8$ m/s

trans speed 2×10^6 bit/s

Processing time $= 3 ms$

$l_1 = 5000 \times 10^3 m$, $l_2 = 4000 \times 10^3 m$, $l_3 = 1000 \times 10^3 m$

○ There are 2 switches

total packet switch processing delay

$= 3ms \times 2$

$= 6ms$

→ Trans. delay $= \dfrac{\text{Total bits}}{\text{Trans . rate}} = \dfrac{1500 \times 8}{2 \times 10^6}$

$= 6000 \times 10^{-3} = 6ms$, total tran $= 6 \times 3$

$= 18 ms$

→ Prop delay $= \dfrac{\text{distance}}{\text{prop speed}}$

$P_1 = \dfrac{5000 \times 10^3}{25 \times 10^8}$	$P_2 = \dfrac{4000 \times 10^3}{2.5 \times 10^8}$	$P_3 = \dfrac{1000 \times 10^3}{2.5 \times 10^8}$
$= 2 \times 10^{-2}\, s$	$= -16\, ms$	$= 4\, ms$
$= 20\, ms$		

total prop delay $= P1 + P2 + P3$
$= 40\, ms$.

Total Delay $= ① + ② + ③$
$= 6 + 18 + 40$
$= 64\, ms$ total

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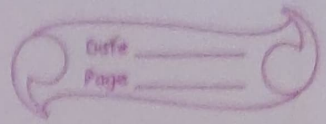
Chapter 2

P1 ⓐ True or False (Question Type)

Ans False — Because it sends 4 and Recives 4

ⓑ True or False (Question Type)

Ans True — Persistant HTTP leaves connection opens

P1(C) ⓑ True or False

Ans False — Each TCP segment can only carry one request

P1(D) True or False

A False — Date is request generation time

P1(E) True or False

A False — 204 No content

P7

the successive visit incur can RIT of RTT_2 = --RTT
when is actually the total amount of time to
get the Ip Address from the DNS

$$[RTT_2 + RTT_2 + \ldots + RTT_n]$$

- First of all, the connection with establish

-) one side client, other side server

After getting IP Address], two RTT_0 are /needed /to/
Receive the file since one RTT_0 is use to

- When connection is Made then RTT Convert in (from
  0 ., whenever client go fro request then RTT will
  updated By 1 and event time RTT fell on cut"
  the connection will not close

that is why it total Amount of RTT

$$[RTT_1 + RTT_2 + \ldots + RTT_n]$$

- After getting the IP Address, two RTT_0
  are needed to Receive the file since on RTT_0
  used to set up the TCP connection and
  another RTT_0 is used to Request and
  Receive the file

$$2 RTT_0 + RTT_1 + RTT_2 \ldots + RTT_n$$