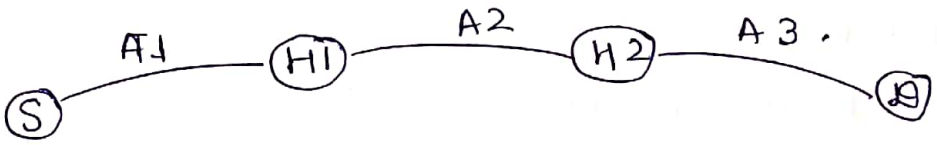
Que 1 ⇒

Ans 1 ⇒.



Bandwith of each link = 1 mbps. = 10^6 bps

Signal travelling speed = 10^8

File divided in 1000 packets of 1000 bits.

Length of link = 100 km

Propagation time = $\frac{\text{length}}{\text{speed of signal.}}$

for each link,

Propagation time = $\frac{100\ km}{10^8\ m/sec} = \frac{100 \times 10^3}{10^8\ m/sec}$

$= \frac{10^5}{10^8}\ sec = \frac{1}{10^3}\ sec = .1\ ms.$

Transmission Time =

$\frac{\text{Packet length (in bits)}}{\text{Bandwidth (in bps).}}$

$= \frac{1000}{10^6} = \frac{1}{10^3} = 1\ ms.$

Tot

for 1 Packet:

Now total time taken to Reach destination =.

(Transmission Time of sender + Propagation Time of sender to H1) + (Transmission Time of H1 + Propagation Time of from H1 to H2) + (Transmission Time of H2) + Propagation Time from H2 to destination)

= 1 ms + 1 ms + 1 ms + 1 ms + 1 ms + 1 ms

= 6 ms.

So total time for 1000 packets

= 6 ms + 999 ms

= 1005 ms.

Ans ∴ Total time taken for file to send from S to D is 1005 ms.