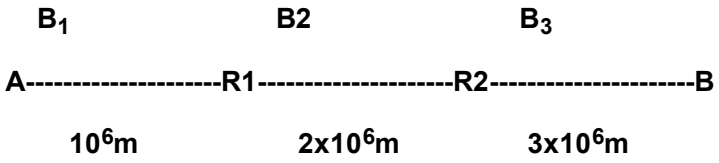
Expert Answer

General Guidance

The answer provided below has been developed in a clear step by step manner.
Step: 1



Propagation speed v = 2.5 x 10^8 m/s

Hence:

Propagation delay from A-R1 = 10^6 m/ 2.5 x 10^8 m/s = 4 x 10^{-3} s

Given RTT from A to R1 = 12ms = 12 x 10^{-3} s

Here RTT is the total time from from transmitting the first bit of request packet to recieving the last bit of the response packet.

Traceroute packet size L = 50 bytes = 50 x 8 bits = 400 bits

Thus: 12ms = 2 x 4ms + 2xL/B_1

==> $800/B_1 = 4 \times 10^{-3}$

==> $B_1 = 2 \times 10^5$ bits/sec = *0.2 Mbps*

Similarly

Propagation delay from A-R2 = $3x10^6$ m/ 2.5×10^8 m/s = 12×10^{-3} s = 12ms

Given RTT from A to R2 = 36ms = 36×10^{-3} s

Traceroute packet size L = 50 bytes = 50 x 8 bits = 400 bits

Thus: $36ms = 2 \times 12ms + L/B_1 + L/B_2$

==> $12ms = 400/(2 \times 10^5) + 400/B_2$

==> $12ms = 2ms + 400/B_2$

==> $B_2 = 400/10ms = 40/10^{-3}$ bits/sec = *40 Kbps*

At Last

Propagation delay from A-B = $6x10^6$ m/ 2.5×10^8 m/s = 24×10^{-3} s = 24ms

Given RTT from A to B = 76ms = 76×10^{-3} s

Traceroute packet size L = 50 bytes = 50 x 8 bits = 400 bits

Thus: $76ms = 2 \times 24ms + L/B_1 + L/B_3$

==> $28ms = 400/(2 \times 10^5) + 400/B_3$

==> $28ms = 2ms + 400/B_3$

==> $B_3 = 400/26ms = 400/26x10^{-3}$ bits/sec = *15.38 Kbps*

Explanation:Please refer to solution in this step.

Answer:

Link	Transmission Rate
A-R1	200Kbps
R1-R2	40Kbps
R2-B	15.38Kbps

Kbps stands for kilo bits per second.