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Que 1

Ans ⇒

1 MSS = 1200 B.

No. of MSS to send = $\frac{500 \times 10^3}{1200}$ = 416.66
= 417.

① 1 MSS ⇒ 1 RTT
② 2 MSS → 1 RTT (3 MSS sent)
③ 4 MSS → 1 RTT (7 MSS sent)
④ 16 MSS → 1 RTT (23 MSS sent)
⑤ 32 MSS → 1 RTT (55 MSS sent)
⑥ 64 MSS → 1 RTT (119 MSS sent)
⑦ 128 MSS → 1 RTT (247 MSS sent)
⑧ 170 MSS → 1 RTT (417 MSS sent).

Total time to send 417 MSS = 8 × RTT
= 8 × 50 ms
= 400 ms.

Total data sent = 500 KB = 5×10^5 B.

Throughput = $\frac{\text{Total data sent}}{\text{Total time}}$

= $\frac{5 \times 10^5}{400 \times 10^{-3}}$.

= $\frac{5}{4} \times 10^6$ = 1.25 MB/sec

Throughput = 1.25 MB/sec