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Que 3
Ans ⇒.

Given

Receiver window size = 24 KB.
maximum segment size = 2 KB.
RTT = 10 m sec.

Receiver window size : .

Receiver window size in terms of mss

$= \dfrac{\text{Receiver window size.}}{\text{Size of 1 mss}}$

$= \dfrac{24\,KB}{2\,KB} = 12\,mss.$

Slow start Threshold :

$= \dfrac{\text{Receiver window size}}{2} = \dfrac{12\,mss}{2} = 6\,mss.$

Slow start Phase :—

— Window size at the start of 1st transmission = 1 mss.
— Window size of the start of 2nd transmission = 2 mss
— Window size of the start of 3rd transmission = 4 mss,
— Window size at the start of 4th transmission = 6 mss.

since the threshold is reached, so it marks the end of slow start phase.

Now congestion Avoidance phase begin.

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Congestion Avoidance Phase :-

1. window size at the start of 5th transmission = 7mss.
2. window size at the start of 6th transmission = 8 mss
3. ———— " ———— 7th transmission = 9 mss
4. ———— " ———— 8th transmission = 10 mss
5. ———— " ———— 9th transmission = 11 mss
6. ———— " ———— 10th transmission = 12 mss

from here,

→ window size at the end of 9th transmission
or at the start of 10th transmission is 12 mss.

• Thus 9 RTT's will be taken before the first full window. can be spent

so,
Time taken before the first full window is
sent

$$= 9 \text{ RTT's}.$$

$$= 9 \times 10 \text{ msec}$$

$$= 90 \text{ msec}. \quad \underline{Ans}$$