Answer

SOLUTION-

Consider the given data,

Length of the packet = L

Rate of transmission = R

Currently transmitted packet = x bits = L / R

Number of packets present in the queue = n packets

Formula for calculating Queing Delay will be :

$$QueingDelay = \frac{[nL + (L - x)]}{R}$$

Given data,

L = 1500 bytes

R = 2.5 Mbps = 2.5 x 10^6 bps

x = 1500 / 2 = 750

n = 4

Using the above formula mentioned, we can calculate the result as follows:

= nL + (L - x)

= 4 x 1500 + (1500 - 750) = **6750 bytes**

R = 2.5 Mbps = 2.5 x 10^6

Since 4 packets are waiting to be transmitted,therefore,

Packets are transmitted at a rate of 2.5 Mbps = 6750 x 2.5 x 4 = 67500

Queuing Delay = 67500 / (2.5 x 10^6) = **0.027 sec**

Hence, the queuing delay for the packet is 0.027 seconds.

IF YOU HAVE ANY DOUBT PLEASE COMMENT DOWN BELOW I WILL SOLVE IT FOR YOU:)
----------PLEASE RATE THE ANSWER----------THANK YOU!!!!!!!!----------

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