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| Computer Networks (BSE-7A)  Quiz 03 (Fall 2023). Instructor: Dr. Syed M. Irteza | | Name: ***SOLUTION*** |
| Date: 2023-10-24 | | Roll Number: |
| Total Marks: 15 | Time Allowed: 15 mins |

TimeoutInterval = EstimatedRTT + (4 \* DevRTT)

DevRTT = (1-β) \* DevRTT + β \* |SampleRTT-EstimatedRTT|

1. Suppose that the two measured SampleRTT values are 130ms and 140ms. Compute the EstimatedRTT after each of these SampleRTT values is obtained, using a value of α = 0.125 (α is the weight for SampleRTT) and assuming that the value of EstimatedRTT was 100ms just before the first of these two samples were obtained. Further, compute the TCP TimeoutInterval after each of these samples is obtained, assuming the value of DevRTT was 12ms just before the first of these two samples was obtained, and assuming a value of β = 0.25. (12m)

ERTT1=103.75 ms

DRTT1=15.5625 ms

T1=166 ms

ERTT2=108.28125 ms

DRTT2=19.6015625 ms

T2=186.6875 ms

1. What is flow control, and how is it different from congestion control? (3m)

*Flow control makes sure the sender does not send more than the receiver can take, and the initial value of rwnd is shared by the receiver during the 3-way handshake. There is a field for rwnd in the TCP header.*

*Congestion control enables the sender to modify his sending rate based on feedback attained through ACKs received from the receiver. Depending on ACKs being received on time, we will either increase or decrease the sending rate. We increase exponentially if we are in slow start, we increase linearly if we are in congestion avoidance, and we decrease exponentially whenever there is a loss event.*