HW1 Answer Grid

Q1 (2 each)

a)128.11.3.31

b)192.96.10.1

c) 175.192.240.29

Q2 (2 each)

A)800B:031F

B)C060:0A01

c)AFC0:F01D

Q3 (6 each)

a) Total Time = P.D (1/2 RTT) + transfer time [(Msg size + header)/BW]

50 sec + $1000100/10^6$ = 50 msec + 1000.1 msec = 1050.1 msec

b) TT for one packet **(ignore header overhead, assume 1K = 1000 bytes).**

1 RTT + $1000/10^6$ = 101 msec. Number of packets = 1000

Total time 1000*101 msec = **101 seconds**

To be exact, the last packet only needs ½ RTT . So total time is

999*101 + 51 msec = 100.949 seconds

c) Same as above but only 50 times: 50 * 101 msec = **5.050 sec**

To be exact 49*101 + 51 msec = 5 seconds

d) As BW is infinite, transfer time is 0. Include only the time taken for the first bit to arrive which is equal to the Propagation delay. Hence, time is **50 msec**

e) 50*100 msec = 5 seconds

To be exact, 49*100mec + 50 msec = 4950 msec or 4.950 seconds

Q4 (5 each)

PD= 2x 10^3/2 x 10^8=10^(-5) seconds
Answer1= L/B=PD B=100/10^(-5)= 10 MBps
Answer2=L/B=PD B=512/10^(-5)=51.2 MBps

Q5 (2 each)

a) This header line is to indicate to the server what language the client prefers for response

b) This header line in the response is to indicate to the client that the server can accept request for specific byte ranges for a given object as opposed to always getting the entire object.

c) This header line in the request is to indicate to the server to provide an object only if it has NOT been modified since the time specified. This is useful if the client requests download of object in byte ranges spanning multiple requests. The client does not want the object if the byte range has been modified since the previous request.

D) This header line identifies the client program making the request. It typically identifies the browser the client is using. The server can use the User agent info to format content, collect stats etc.