Quiz 1

Due 2 Nov at 10:00 **Points** 10 **Questions** 10 **Available** 2 Nov at 9:30 - 2 Nov at 10:30 1 hour **Time limit** 30 Minutes

Submission details:

Time:	28 minutes
Current score:	8.8 out of 10
Kept score:	8.8 out of 10

Attempt history

	Attempt	Time	Score
LATEST	Attempt 1	28 minutes	8.8 out of 10

ⓘ Correct answers are hidden.

Score for this quiz: **8.8** out of 10
Submitted 2 Nov at 10:03
This attempt took 28 minutes.

Question 1 — 1 / 1 pts

What is an HTTP cookie used for?

- (●) A cookie is a code used by a server, carried on a client's HTTP request, to access information the server had earlier stored about an earlier interaction with this Web *browser*.

Nice! Your answer is correct.

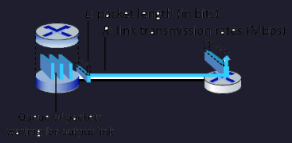
- ( ) Like dessert, cookies are used at the end of a transaction, to indicate the end of the transaction.
- ( ) A cookies is a code used by a server, carried on a client's HTTP request, to access information the server had earlier stored about an earlier interaction with this *person*.
- ( ) A cookie is used to spoof client identity to an HTTP server.
- ( ) A cookie is a code used by a client to authenticate a person's identity to an HTTP server.

Nice! Your answer is correct.

Incorrect

Question 2 — 0 / 1 pts

Suppose a packet is L = 1200 bytes long (one byte = 8 bits), and link transmits at R = 100 Mbps (i.e., a link can transmit bits 100,000,000 bits per second). What is the transmission delay for this packet?

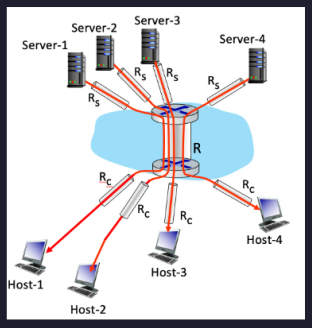


- ( ) .0012 secs
- (●) .00096 secs
- ( ) .000015 secs
- ( ) 8,333 secs
- ( ) .000096 secs

Sorry, your answer isn't correct.

Question 3 — 1 / 1 pts

Consider the scenario below where 4 TCP senders are connected to 4 receivers. Servers 1 - 3 transmit to the receiving hosts at the fastest rate possible (i.e., at the rate at which the bottleneck link between a server and its destination is operating at 100% utilization, and is fairly shared among the connections passing through that link). Server 4 has nothing to send, so its sending rate is zero



Suppose that R = 1 Gbps, R_s is 200 Mbps and R_c is 400 Mbps. What is the TCP throughput achieved on each of the 3 active-sending connections?

- R/4
- R_s
- R
- 4R
- R_c

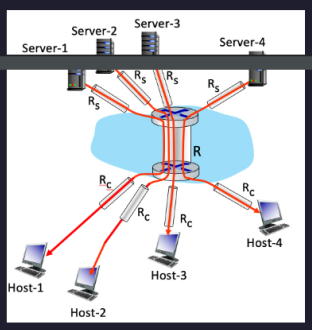
Nice! Your answer is correct.

Nice! Your answer is correct.

Question 4

1 / 1 pts

Consider the scenario below where 4 TCP senders are connected to 4 receivers. The servers transmit to the receiving hosts at the fastest rate possible (i.e., at the rate at which the bottleneck link between a server and its destination is operating at 100% utilization, and is fairly shared among the connections passing through that link).



Suppose that R = 1 Gbps and R_c is 300 Mbps and R_s is 200 Mbps. Assuming that the servers are sending at their maximum rate possible, enter the link utilizations for the client links (whose rate is R_c) below. Enter your answer as a decimal, of the form 1.00 (if the utilization is 1, or 0.xx if the utilization is less than 1, rounded to the closest xx).

The utilization of the client links, whose rate is R_c, is: [A]

0.67

Answer 1:

0.67

Nice! This answer is correct.

Question 5

1 / 1 pts

Match the name of an Internet layer with unit of data that is exchanged among protocol entities at that layer, using the pulldown menu.

Application layer	Message
Transport layer	Segment
Network layer	Datagram
Link layer	Frame
Physical layer	Bit

Nice! This answer is correct.

Partial

Question 6

0.8 / 1 pts

Match the description of a security defense with its name.

Specialized "middleboxes" filtering or blocking traffic, inspecting packet contents inspections	Firewall
Provides confidentiality by encoding contents	Digital signatures
Used to detect tampering/changing of message contents, and to identify the originator of a message.	Digital signatures
Limiting use of resources or capabilities to given users.	Access control
Proving you are who you say you are.	Authentication

Question 7

1 / 1 pts

Consider the network shown in the figure below, with three links, each with the specified transmission rate and link length. Assume the length of a packet is 8000 bits.

What is the transmission delay at link 2?

- .00096 secs
- 12.5 secs
- 12,500 secs
- 8 x 10^(-5) secs

Nice! Your answer is correct.

- 100 secs

Nice! Your answer is correct.

Question 8

1 / 1 pts

A circuit-switching scenario in which N users, each requiring a bandwidth of 10 Mbps, must share a link of capacity 150 Mbps. What is the maximum number of users that can be supported?

- 20
- 5
- 10

Question 9

1 / 1 pts

Suppose an HTTP client makes a request to a web server. The client has the IP address of the server, so the client makes no DNS inquiry. How many round trip times (RTTs) are needed from when the client first makes the request to when the base page and the clicked two object files are completely downloaded, assuming persistence HTTP and the time needed by the server to transmit the base file into the server's link is equal to 1/2 RTT and that the time needed to transmit the object files to the server's link and the HTTP GET into the client's link are zero? (You should take into account any TCP setup time required before the HTTP GET is actually sent by the client, the time needed for the server to transmit the requested object, and any propagation delays not accounted for in these amounts of time.)

- 6.5 RTT
- 4.5 RTT
- 2 RTT
- 2.5 RTT

Question 10

1 / 1 pts

When an application uses a TCP socket, what transport services are provided to the application by TCP? Check all that apply.

- [x] *Loss-free data transfer.* The service will reliably transfer all data to the receiver, recovering from packets dropped in the network due to router buffer overflow.
- [ ] *Throughput guarantee.* The socket can be configured to provide a minimum throughput guarantee between sender and receiver.
- [x] *Congestion control.* The service will control senders so that the senders do not collectively send more data than links in the network can handle.
- [x] *Flow Control.* The provided service will ensure that the sender does not send so fast as to overflow receiver buffers.
- [ ] *Best effort service.* The service will make a best effort to deliver data to the destination but makes no guarantees that any particular segment of data will actually get there.
- [ ] *Real-time delivery.* The service will guarantee that data will be delivered to the receiver within a specified time bound.

Nice! This answer is correct.

Quiz score: **8.8** out of 10

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