# Quiz 1

**Due** Oct 20 at 11:59pm **Points** 55 **Questions** 26

Available Oct 15 at 12am - Oct 20 at 11:59pm 6 days Time Limit 90 Minutes

## **Instructions**

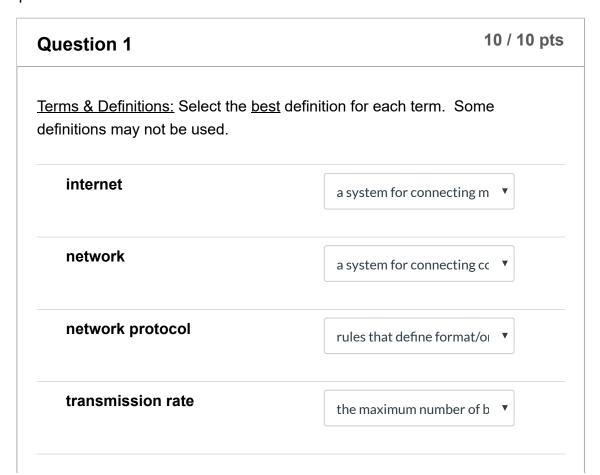
You have 90 minutes to complete this quiz.

### **Attempt History**

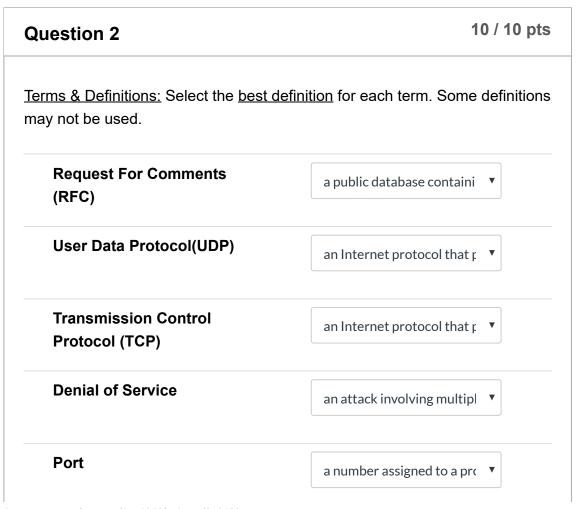
	Attempt	Time	Score
LATEST	Attempt 1	90 minutes	54.2 out of 55

(!) Correct answers will be available on Oct 21 at 12am.

Score for this quiz: **54.2** out of 55 Submitted Oct 20 at 10:30pm This attempt took 90 minutes.

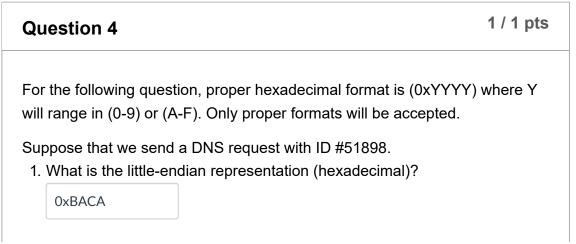


end-to-end delay	for an individual packet, th
propagation speed	rate at which bits travel th ▼
average throughput	end-to-end speed (over a   ▼
statistical multiplexing	shares a transmission med ▼
time-division multiplexing	shares a transmission med 🔻
frequency-division multiplexing	shares a transmission med ▼



Socket	an internet address combi ▼
RTT	time for a small packet to t ▼
caching	temporarily storing data ir ▼
cookie	history information storec ▼
DNS	an application layer protoc ▼

Question 3	1 / 1 pts
Convert the following units. Your answer should be a whole number text in the answer field:	er with no
965 B = bits	
7,720	



s the big-endian representation (hexadecimal)?
3A
representation is required for network communication? (Enter "1
without quotes) 2
:
CA
:
ВА
:

Question 5	1 / 1 pts
Time spent being placed on the transmission medium is called Tra	ansmission
Answer 1:	
Transmission Delay	

Question 6	1 / 1 pts
In store-and-forward networks, only one packet may be in transit or any given time.	n a link at
True	
<ul><li>False</li></ul>	

Question 7	1 / 1 pts
As discussed in the lectures, what are the primary functions of a passitched network.	oacket-
□ Packet Recovery	
Packet Fragmentation	

Question 8	1 / 1 pts
The TCP protocol is connection-oriented.	
True	
<ul><li>False</li></ul>	

Question 9	1 / 1 pts
At the transport layer, what is the payload?	
transport data	

	network-level data
•	application data
	transport header

# Question 10 In the Internet protocol stack, the Transport Layer is responsible for process-to-process communication. Answer 1: Transport Layer

Question 11	1 / 1 pts
A third party intercepting a packet and downloading its information sent onward toward its destination is called	before it is
a packet sniffer	
a virus infection	
<ul><li>malware</li></ul>	
an IP spoofer	
a DoS attack	

Question 12 1 / 1 pts

Mergi	ng multiple communication streams into the same media is called?
•	multiplexing
	interoperability
	morphing
	encapsulation

Question 13	1 / 1 pts
In a hybrid client-server/P2P architecture, one host is always hosts may connect and be handed off amongst themselves	
Answer 1:	
hybrid client-server/P2P	

Question 14	1 / 1 pts
What <i>must</i> an application-level protocol specify? (Check all tha	t apply)
Protocol versioning info	
✓ Message sending rules	
✓ Types of messages exchanged	
Message response rules	
Protocol authoring information	

	· ,
Message Fields & Structure	
Message Semantics	

Question 15

In a client-server architecture, one host is always on, and other hosts may connect and be continually serviced by this first host.

Answer 1:

client-server

In the internet, an application-level protocol implemeting email service would most likely utilize TCP as its transport-layer protocol.

Answer 1:

TCP

An HTTP server maintains client states.

True

False

Question 18	1 / 1 pts
A server-side piece of data which is used to keep track of transact between a client and server is called a cookie.	ions
True	
False	

Question 19	1 / 1 pts
The reserved port for SSH is port 22.	
Answer 1:	
22	

Question 20	1 / 1 pts
HTTP implements caching by use of a UDP check.	
True	
False	

Question 21 1/1 pts

FTP is implemented over a single HTTP connection.

https://oregonstate.instructure.com/courses/1771948/quizzes/2501887

O True		
False		

Question 22 2 / 2 pts

Suppose there are 79 packets entering a queue at the same time. Each packet is of size 7 MiB. The link transmission rate is 1.3 Gbps. What is the queueing delay of packet number 44 (in milliseconds, rounded to one decimal place, e.g. 0.01234 seconds would be entered as "12.3")

1,942.3

Question 23 2 / 2 pts

Suppose there are 5 routers in sequence between Host A and Host B, all of which use store-and-forward routing. What is the total end-to-end delay for a packet originating from Host A with destination Host B, under the following conditions.

Each of the link transmission rates are 4.4 Mbps

The total distance from Host A to Host B along its path of transmisison is 177.7 km

The speed of propagation through the transmission medium is is  $2.7 \times 10^8$  m/s

The packet size is 3 KiB

Remember that you must also uplink from Host A to the first router. Give answer in milliseconds, rounded to 1 decimal place, without units (e.g. for 0.12345 seconds you would enter "123.5" without the quotes).

34.2

**Partial** 

Question 24 3.2 / 4 pts

Given a transmission medium with propagation rate of  $2.5 \times 10^8$  m/sec. Multiple computers share this link using packet switching.

- Assume that queuing is necessary only for transmission. (i.e. **ignore processing delay for all packets.**)
- Assume that there is no other traffic on the medium, no switches between the link and the destination
- At least 20 packets arrive in the queue at time t = 0.
- Each packet's size is 1000 bytes.
- The distance to the destination is 1500 km.

Answer the following questions for each of the given transmission rates. Give answers in milliseconds, without units, rounding to two decimal places, for credit. (e.g. for 0.000302 seconds you would enter "0.30" without the quotes)

	10 Mbps	100 Mbps
What is the <u>transmission delay</u> for each packet?	0.80	0.08
What is the <u>propagation delay</u> for each bit?	6	6
What is the <u>queueing delay</u> for the 4th packet?	2.4	0.24
What is the <u>end-to-end delay</u> for the 5th packet?	6.8	6.08
What is the <u>average queueing delay</u> for the first 10 packets?	3.6	0.36

Ansv	ver 1:			
C	0.80			
Ansv	ver 2:			
C	80.0			
Ansv	ver 3:			
6	6			
Ansv	ver 4:			

6

Answer 5:	
2.4	
Answer 6:	
0.24	
Answer 7:	
6.8	
Answer 8:	
6.08	
Answer 9:	
3.6	
Answer 10:	
0.36	

### Question 25 4 / 4 pts

Given a link with a maximum transmission rate of 33.7 Mbps. Only two computers, X and Y, wish to transmit starting at time t = 0 seconds. Computer X sends *fileX* (11 MiB) and computer Y sends *fileY* (16 KiB), both starting at time t = 0.

- Computer X gets the transmission medium first, so Computer Y must wait.
- For the following calculations, assume maximum transmission rate during transmission.
- Suppose that entire files are sent as a stream (no packets, no multiplexing).

At what time (t = ?) would FileX finish transmitting?

Give answer in seconds, without units, and round to two decimal places (e.g. for an answer of 12.4567 seconds you would enter "12.46" without the

uotes)		
2.74		

Question 26 4 / 4 pts

A client in a network with a proxy server requests a 10 MiB file from an internet server, fakeservername.com. The network's proxy server has a 3.96 Mbps connection to fakeservername.com. The average response time between the network's proxy server and the internet origin server (including RTT) is 1.5 seconds for a small "header-only" HTTP request/response. The file requested by the client is currently in the proxy server cache, but the proxy server relays the client's request to the internet server with "if-modified since".

Assume that transmissions between the proxy and the origin servers are stream (not packets) at full bandwidth, with negligible propagation delay.

How much time is saved if the file has not been modified? (Give answer in seconds, without units, rounded to two decimal places, so for an answer of 1.4233 seconds you would enter "1.42" without the quotes.)

21.18

Quiz Score: 54.2 out of 55