Week 7 Summary Exercises

Due Nov 17 at 11:59pm **Points** 72 **Questions** 27
Available Nov 10 at 12am - Nov 17 at 11:59pm 8 days **Time Limit** 360 Minutes
Allowed Attempts 2

Take the Quiz Again

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	269 minutes	66.33 out of 72

Score for this attempt: **66.33** out of 72
Submitted Nov 17 at 9:50pm
This attempt took 269 minutes.

Question 1

1 / 1 pts

Select the proper equation for TCP's calculation of DevRTT.

Correct!

- (selected) $DevRTT_n = (1-\beta) \cdot DevRTT_{n-1} + \beta \cdot |SampleRTT_{new} - EstimatedRTT_{n-1}|$
- $DevRTT_n = (1-\beta) \cdot DevRTT_{n-1} + \beta \cdot |SampleRTT_{old} - EstimatedRTT_{n-1}|$
- $DevRTT_n = \beta \cdot DevRTT_{n-1} + (1-\beta) \cdot |SampleRTT_{new} - EstimatedRTT_{n-1}|$
- $DevRTT_n = (1-\beta) \cdot DevRTT_{n-1} + \beta \cdot |SampleRTT_{new} - EstimatedRTT_n|$

Question 2

1 / 1 pts

Select the proper equation for TCP's calculation of EstimatedRTT.

Correct!

- (selected) $EstimatedRTT_n = (1-\alpha) \cdot EstimatedRTT_{n-1} + \alpha \cdot SampleRTT_{new}$
- $EstimatedRTT_n = \alpha \cdot EstimatedRTT_{n-1} + (1-\alpha) \cdot SampleRTT_{new}$
- $EstimatedRTT_n = (1-\alpha) \cdot EstimatedRTT_{n-1} + \alpha \cdot SampleRTT_{old}$
- $EstimatedRTT_n = (1-\alpha) \cdot EstimatedRTT_n + \alpha \cdot SampleRTT_{new}$

Question 3

1 / 1 pts

What are some causes of network congestion? (Check all that apply)

Correct!

- [x] Parallel TCP Connections.

Correct!

- [x] Typical Internet Usage.

Correct!

- [x] High utilization.

Correct!

- [x] Reliable Data Transfer schemes.

Correct!

- [x] Dropped TCP Packets.

Question 4

1 / 1 pts

TCP implements network fairness indirectly.

Correct!

- (•) True
- ( ) False

Question 5

2 / 2 pts

Imagine a mythical set of protocols with the following details.

Maximum Link-Layer data frame: 1,171 bytes

Network-Layer header size: 23 bytes

Transport-Layer header size: 21 bytes

What is the size, in bytes, of the MSS? (Give answer without units)

Correct!

1,127

orrect Answer

1,127

Question 6

2 / 2 pts

For the following binary IP address, give the dotted-decimal representation:

11000000 10101000 00001011 00010100

Correct!

192.168.11.20

orrect Answers

192.168.11.20

Question 7

2 / 2 pts

For the following binary IP address, give the dotted-decimal representation:

11011110 01110011 01100110 01100110

Correct!

222.115.102.102

orrect Answers

222.115.102.102

Question 8

2 / 2 pts

For the following dotted-decimal IP address, give the binary representation:

155.124.185.14

Correct!

10011011 01111100 10111001 00001110

orrect Answers

10011011011111001011100100001110

10011011 01111100 10111001 00001110

Question 9

2 / 2 pts

When a host in a network needs to obtain a valid IP address for itself, it broadcasts a "discover" message that can be handled by a Dynamic Host Configuration Protocol (DHCP) server, which will "offer" an IP address within the correct domain.

Answer 1:

Correct!

Dynamic Host Configuration Protocol (DHCP)

Question 10

2 / 2 pts

What can cause queueing at a router's input ports? (Check all that apply)

Correct!
- [x] Slow outbound link transmission rate.
- [ ] Slow inbound link transmission rate.

Correct!
- [x] Output port contention.

Correct!
- [x] Head of Line blocking.

Question 11

2 / 2 pts

What can cause packet queueing at a router's output port? (Check all that apply)

- [ ] Head of line blocking.
- [ ] Slow inbound link transmission rate.

Correct!
- [x] Slow outbound link transmission rate.

Correct!
- [x] Multiple data flows requiring the same outbound link.
- [ ] Output port contention.

Question 12

2 / 2 pts

The process of determining a path through the internet is called routing .

Answer 1:

Correct!

routing

Question 13

2 / 2 pts

In a link between Host A, and Host B, we have three intermediary routers:

Host A ----- Router Snucky ------ Router Jumpy ------ Router Po ------- Host B

Host A's first hop router is Router Snucky .

Answer 1:

Correct!

Snucky

Question 14

2 / 2 pts

The Internet Protocol (IP) implements flow control.

- True
- False

Correct!

Question 15

2 / 2 pts

Where do network-layer protocols run?

Correct!

- [x] Mobile devices

Correct!

- [x] Routers

Correct!

- [x] Laptops

Correct!

- [x] PCs

Question 16

2 / 2 pts

The Internet Protocol (IP) implements congestion control.

- [ ] True

Correct!

- [x] False

Question 17

2 / 2 pts

In a subnet, the reserved addresses are the subnet address (with a lowest subnet IP address) and the broadcast address (with a highest subnet IP address).

Answer 1:

Correct!

subnet address

Answer 2:

Correct!

broadcast address

Question 18

2 / 2 pts

A network with a connectionless network layer is called a datagram network .

Answer 1:

Correct!

datagram network

Question 19

2 / 2 pts

Routing would be more complicated if we used hardware addresses as network addresses.

Correct!

- (•) True
- ( ) False

Question 20

2 / 2 pts

In a datagram network, the responsibilities of the network layer include: (check all that apply).

- [ ] reliable delivery
- [ ] congestion control
- [ ] payload error correction
- [ ] connection setup/takedown

Correct!

- [x] packet forwarding

Correct!

- [x] packet routing
- [ ] flow control

Correct!

- [x] host-to-host communication

Question 21

2 / 2 pts

The network layer manages communications from [Select] to [Select] .

Answer 1:

Correct!

host

Answer 2:

Correct!

host

Question 22

2 / 2 pts

A router's routing table is output by a routing algorithm .

Answer 1:

Correct!

routing algorithm

Question 23

4 / 4 pts

Upon encountering a router with the following routing table:

Prefix Match	Port
10011110 00011110 10001111	0
10011110 00011110 10001111 000	1
10011110 00011110 10001111 01	2
10011110 00011110 10001110 0001	3
Default	4

A datagram with the destination IP address 158.30.142.90 would be routed to Port 4 .

Answer 1:

Correct!

Port 4

Question 24

0 / 4 pts

Upon encountering a router with the following routing table:

Prefix Match	Port
10011110 00011110 10001111	0
10011110 00011110 10001111 000	1
10011110 00011110 10001111 01	2
10011110 00011110 10001110 0001	3
Default	4

A datagram with the destination IP address 158.30.143.30 would be routed to Port 3 .

Answer 1:

'ou Answered

Port 3

orrect Answer

Port 1

Question 25

4 / 4 pts

Upon encountering a router with the following routing table:

Prefix Match	Port
10011110 00011110 10001111	0
10011110 00011110 10001111 000	1
10011110 00011110 10001111 01	2
	3

10011110 00011110 10001110 0001	
Default	4

A datagram with the destination IP address 158.30.143.10 would be routed to Port 1 .

Answer 1:

Correct!

Port 1

Question 26

10 / 10 pts

Put the following steps in the correct order for new host "Jetpack" joining a network with a DHCP-enabled server "Rhino".

1. Jetpack sends [Select] to [Select]
2. [Select] sends [Select] to [Select]
3. [Select] sends [Select] to [Select]
4. [Select] sends [Select] to [Select]

Answer 1:

Correct!

Jetpack

Answer 2:

Correct!

DHCP Discover

Answer 3:

Correct!

IP broadcast address

Answer 4:

Correct!

Rhino

Answer 5:

Correct!

DHCP Offer

Answer 6:

Correct!

IP broadcast address

Answer 7:

Correct!

Jetpack

Answer 8:

Correct!

DHCP Request

Answer 9:

Correct!

IP broadcast address

Answer 10:

Correct!

Rhino

Answer 11:

Correct!

DHCP Ackknowledgement

Answer 12:

Correct!

IP broadcast address

Question 27

8.33 / 10 pts

For the IPv4 CIDR address 153.10.22.56 /22

What is the...

- Netmask: [Select]
- Network Address: [Select]
- Host Mask: [Select]
- Broadcast Address: [Select]
- Number of possible hosts: [Select]
- Host Number: [Select]

Answer 1:

Correct!

255.255.252.0

Answer 2:

'ou Answered

153.10.22.56

orrect Answer

153.10.20.0

Answer 3:

Correct!

0.0.3.255

Answer 4:

Correct!

153.10.23.255

Answer 5:

Correct!

1022

Answer 6:

Correct!

568

Quiz Score: **66.33** out of 72