

Module 7 Summary Exercises

Due Feb 23 at 1:59am

Points 72

Questions 27

Time Limit None

Allowed Attempts 2

Instructions



Take the Quiz Again

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	386 minutes	70.33 out of 72

⚠️ Answers will be shown after your last attempt

Score for this attempt: **70.33** out of 72
Submitted Feb 22 at 9:49pm
This attempt took 386 minutes.

Question 1

1 / 1 pts

UDP implements network fairness.

☐ True

☒ False

Question 2

1 / 1 pts

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

☒ Typical Internet Usage.

☒ High utilization.

- ☒ Parallel TCP Connections.
- ☒ Dropped TCP Packets.
- ☒ Reliable Data Transfer schemes.

Question 3

1 / 1 pts

The rate of CongWin size increase (in terms of MSS) while in TCP's Slow-Start phase is Exponential .

Answer 1:

Exponential

Question 4

1 / 1 pts

Select the proper equation for TCP's calculation of the Timeout Interval.

- ☐ $TimeoutInterval = \alpha \cdot EstimatedRTT_n + (1 - \alpha) \cdot DevRTT_n$
- ☒ $TimeoutInterval = EstimatedRTT_n + 4 \cdot DevRTT_n$
- ☐ $TimeoutInterval = (1 - \alpha) \cdot EstimatedRTT_n + \alpha \cdot DevRTT_n$
- ☐ $TimeoutInterval = 4 \cdot EstimatedRTT_n + DevRTT_n$

Question 5

2 / 2 pts

Given a effective delay of 17ms when network usage is 81%, what is the effective delay when network usage = 78% ? (Give answer is milliseconds, rounded to one decimal place, without units. So for an answer of 0.10423 seconds you would enter "104.2" without the quotes).

14.7

Question 6**2 / 2 pts**

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

11000000 10101000 00001011 00010100

Question 7**2 / 2 pts**

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

156.224.141.227

Question 8**2 / 2 pts**

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

10.108.112.240

Question 9**2 / 2 pts**

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

☐ congestion control

- ☒ packet forwarding
- ☐ reliable delivery
- ☒ host-to-host communication
- ☐ payload error correction
- ☐ flow control
- ☒ packet routing
- ☐ connection setup/takedown

Question 10

2 / 2 pts

Given a router with 5 input ports and 5 output ports. If the switching fabric is 5 times as fast as the input/output line speed, queueing can occur at an input port.

Answer 1:

can

Question 11

2 / 2 pts

The Internet Protocol (IP) header may be 21 bytes long.

- ☐ True
- ☒ False

Question 12

2 / 2 pts

A network with a connection-oriented network layer is called a virtual circuit network .

Answer 1:

virtual circuit network

Question 13

2 / 2 pts

Where do network-layer protocols run?

- ☒ Routers
- ☒ PCs
- ☒ Mobile devices
- ☒ Laptops

Question 14

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:

subnet address

Answer 2:

broadcast address

Question 15

2 / 2 pts

The network layer manages communications from to .

Answer 1:

host

Answer 2:

host

Question 16**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:

Snucky

Question 17**2 / 2 pts**

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

Answer 1:

datagram network

Question 18**2 / 2 pts**

The Internet Protocol (IP) implements data reliability services.

☐ True

☒ False

Question 19**2 / 2 pts**

Given a router with 5 input ports and 5 output ports. If the switching fabric is 5 times as fast as the input/output line speed, queueing can occur at an output port.

Answer 1:

can

Question 20

2 / 2 pts

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

☒ True

☐ False

Question 21

2 / 2 pts

In a subnet, there are ____ reserved IP addresses.

2

Question 22

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:

Dynamic Host Configuration Protocol (DHCP)

Question 23**4 / 4 pts**

Upon encountering a router with the following routing table:

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 1 .

Answer 1:

Port 1

Question 24**4 / 4 pts**

Upon encountering a router with the following routing table:

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 158.30.143.80 would be routed to Port 2 .

Answer 1:

Port 2

Question 25**4 / 4 pts**

Upon encountering a router with the following routing table:

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 158.30.143.150 would be routed to Port 0 .

Answer 1:

Port 0

Question 26**10 / 10 pts**

For the IPv4 CIDR address 153.10.22.56 /22

What is the...

- Netmask:
- Network Address:
- Host Mask:
- Broadcast Address:
- Number of possible hosts: 1022
- Host Number:

Answer 1:

255.255.252.0

Answer 2:

153.10.20.0

Answer 3:

0.0.3.255

Answer 4:

153.10.23.255

Answer 5:

1022

Answer 6:

568

Partial

Question 27

8.33 / 10 pts

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

1. sends to
2. sends to
3. sends DHCP Request to
4. sends to

Answer 1:

Jetpack

Answer 2:

DHCP Discover

Answer 3:

IP broadcast address

Answer 4:

Rhino

Answer 5:

DHCP Offer

Answer 6:

Jetpack's IP address

Answer 7:

Jetpack

Answer 8:

DHCP Request

Answer 9:

IP broadcast address

Answer 10:

Rhino

Answer 11:

DHCP Acknowledgement

Answer 12:

Jetpack's IP address

Quiz Score: **70.33** out of 72