

# Week 9 Summary Exercises

**Due** Dec 1 at 11:59pm**Points** 107**Questions** 38**Available** Nov 24 at 12am - Dec 1 at 11:59pm 8 days**Time Limit** 360 Minutes**Allowed Attempts** 2[Take the Quiz Again](#)

## Attempt History

	Attempt	Time	Score
LATEST	<a href="#">Attempt 1</a>	144 minutes	107 out of 107

Score for this attempt: **107** out of 107

Submitted Dec 1 at 11:15pm

This attempt took 144 minutes.

### Question 1

2 / 2 pts

The "tracert" application (on Windows) receives ICMP messages.

**Correct!**☒ True☐ False

### Question 2

2 / 2 pts

NAPT devices translate IP address *and* port numbers.

**Correct!**☒ True☐ False

**Question 3****2 / 2 pts**

The transport-layer header is encapsulated in the first fragmented IP datagram.

**Correct!**☒ True☐ False**Question 4****2 / 2 pts**

It is the responsibility of a routing algorithm to determine the cost of an output link.

**Correct!**☐ True☒ False**Question 5****2 / 2 pts**

In a prefix-matching network, a routing table stores... (Check all that apply)

**Correct!**☒ IP Prefixes☐ Path cost information☐ Link state information☐ Complete path information**Correct!**☒ Next-Hop link information

**Question 6****2 / 2 pts**

It is the responsibility of a routing algorithm to correlate MAC addresses with IP addresses.

☐ True☒ False**Correct!****Question 7****2 / 2 pts**

Network address translation has ameliorated the IP address shortage problem.

☒ True☐ False**Correct!****Question 8****2 / 2 pts**

The path MTU is the largest MTU on a path from sender to receiver.

☐ True☒ False**Correct!****Question 9****2 / 2 pts**

The IPv6 header does not have a checksum.

**Correct!**

- ☒ True
- ☐ False

**Question 10****2 / 2 pts**

The IPv6 address size is 128 bits.

**Correct!**

- ☒ True
- ☐ False

**Question 11****2 / 2 pts**

Select all features explicitly available in IPv6 which were already available explicitly in IPv4.

**Correct!**

☒ Source/Destination Addressing

☐ Payload Length

**Correct!**

☒ Traffic Type

☐ Flow Labeling

**Correct!**

☒ Hop Limit

☐ Extension Headers

☐ 128-bit Addresses

**Correct!**

☒ Version

**Question 12****2 / 2 pts**

The IPv6 address size is 120 bits.

☐ True

☒ False

**Correct!****Question 13****2 / 2 pts**

The transition from IPv4 to IPv6 requires that \_\_\_\_\_. (Check all that apply)

☐ all IPv4 routers must have been phased out by January 1, 2015.



IPv4 routers still in use must “tunnel” IPv6 datagrams, by fragmenting/encapsulating them in IPv4 datagrams

☐ all ISPs provided IPv6 functionality by January 1, 2015.

**Correct!****Question 14****2 / 2 pts**

In IPv6, datagram fragmentation is handled at the network edge .

**Answer 1:**

handled at the network edge

**Correct!****Question 15****3 / 3 pts**

Convert the following IPv4 address to its corresponding IPv6-mapped address, with proper formatting.

114.18.222.10

**Correct!**

::ffff:7212:DE0A

**Incorrect Answers**

::ffff:114.18.222.10

::ffff:7212:de0a

### Question 16

3 / 3 pts

Convert the following IPv4 address to its corresponding IPv6-mapped address, with proper formatting.

192.123.33.1

**Correct!**

::ffff:C07B:2101

**Incorrect Answers**

::ffff:c07b:2101

::ffff:192.123.33.1

### Question 17

3 / 3 pts

1234:aac:a03::abcd is a valid preferred-format IPv6 address.

**Correct!**

☒ True

☐ False

**Question 18****3 / 3 pts**

A switch is a network-layer device.

☐ True☒ False**Correct!****Question 19****3 / 3 pts**

The link-layer device at the center of an ethernet star is a \_\_\_\_\_.

☐ node☒ switch☐ router☐ star hub**Correct!****Question 20****3 / 3 pts**

A MAC address is permanent and unique.

☐ True☒ False**Correct!****Question 21****3 / 3 pts**

A link-layer link between only two adjacent nodes is called a/an point to point link.

**Answer 1:**

**Correct!**

point to point

## Question 22

3 / 3 pts

It is fairly easy to detect collisions in wireless networks.

☐ True

**Correct!**

☒ False

## Question 23

3 / 3 pts

A link-layer link between more than two adjacent nodes is called a/an broadcast link.

**Answer 1:**

**Correct!**

broadcast

## Question 24

3 / 3 pts

Star Ethernet uses the same multiple access control as Bus Ethernet.

☐ True



**Correct!**☒ False**Question 25****3 / 3 pts**

A multiple access scheme which listens to the channel to make sure it is empty, prior to transmitting, is called...

☐ collision detection protocol☐ "taking turns" protocol**Correct!**☒ carrier sense protocol☐ random access protocol**Question 26****3 / 3 pts**

In a CSMA/CD system, when a collision is detected, ...

**Correct!**☒ the sender will cut off transmission and wait some time before retransmitting.☐ the sender will give an error message to the upper-level protocol☐ the sender will immediately retransmit the frame from the beginning.☐ the sender will send a channel reservation message.**Question 27****3 / 3 pts**

A multiple access scheme which divides the usable medium into "chunks" and allows each device sole acces to some number of "chunks" is called...

- ☐ "taking turns" protocol
- ☐ random access protocol
- ☐ collision avoidance protocol
- ☒ channel partitioning protocol

Correct!

### Question 28

3 / 3 pts

Select all Random Access schemes below.

- ☐ Star-configured Ethernet
- ☐ Token Ring Multiple Access
- ☒ CSMA
- ☐ WDMA
- ☐ FDMA
- ☐ TDMA
- ☒ ALOHA

Correct!

Correct!

### Question 29

3 / 3 pts

Given the following received byte on an even-parity machine, there is definitely at least one error.

01001101

☐ True

**Correct!**

☒ False

### Question 30

3 / 3 pts

Most modern Ethernet LANs use a star topology.

**Answer 1:**

star

**Correct!**

### Question 31

3 / 3 pts

There are reserved MAC addresses unusable for devices.

☒ True

**Correct!**

☐ False

### Question 32

3 / 3 pts

Ethernet provides...

☐ error detection and correction via CRC check

☒ error detection via CRC check

**Correct!**

☐ error detection and correction via parity checks

☐ no error detection or correction

**Question 33****3 / 3 pts**

Given the following diagram of typical Ethernet hardware frame:

Select the proper portion of the data encapsulation from the dropdown menu, which corresponds to the letter in the figure.

A	B	C	D	Data	A
---	---	---	---	------	---

A:

B:

C:

D:

**Answer 1:****Correct!**

hardware framing characters

**Answer 2:****Correct!**

hardware frame header

**Answer 3:****Correct!**

IP header

**Answer 4:****Correct!**

TCP/UDP header

**Question 34****3 / 3 pts**

A protocol designed to control access to a medium is most commonly called a

**Correct!**

- ☒ multiple access protocol
- ☐ none of these
- ☐ link access protocol
- ☐ media control protocol

**Question 35****3 / 3 pts**

In Random Access multiple access schemes, no two nodes will ever transmit at the same time.

**Correct!**

- ☐ True
- ☒ False

**Question 36****3 / 3 pts**

To retrieve an adjacent node's MAC address, \_\_\_\_\_ is used.

**Correct!**

- ☐ UDP
- ☐ DHCP
- ☒ ARP

## Question 37

3 / 3 pts

It is fairly easy to detect collisions in wired networks.

Correct!

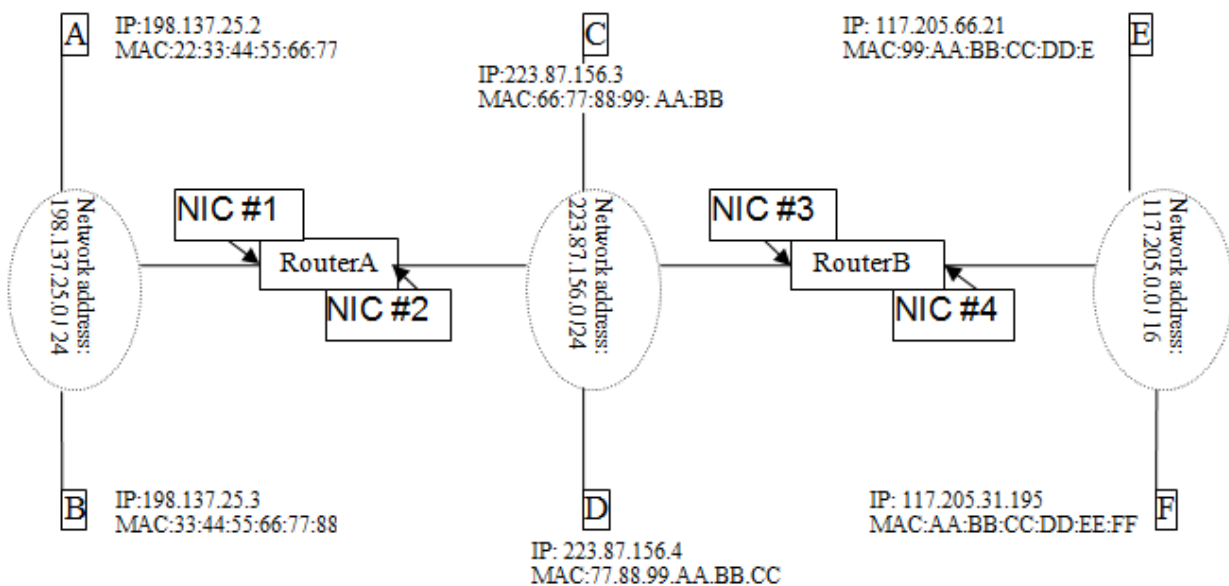
☒ True

☐ False

## Question 38

10 / 10 pts

Select words/phrases from the dropdown menus to define the process of sending a message from host A to host D in the diagram below. Each phrase may be used zero or more times.



1. A finds that D belongs to a different subnet by checking

[ Select ]

2. A looks up [ Select ] in its routing table.

3. A uses ARP to get RouterA's NIC#1 MAC address .

4. A creates frame with [ Select ] as destination. Frame contains

IP datagram with [ Select ] as destination.

5. A's NIC sends frame and RouterA's NIC receives it.

6. RouterA removes IP datagram from frame, learns that its destination is

[ Select ] ▼ .

7. RouterA uses ARP to get [ Select ] ▼ .

8. RouterA creates frame with [ Select ] ▼ as destination. Frame

contains IP datagram with [ Select ] ▼ as destination.

9. RouterA's NIC sends frame and D's NIC receives it.

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**Answer 1:**

Correct!

D's IP address

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**Answer 2:**

Correct!

RouterA's NIC#1 IP address

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**Answer 3:**

Correct!

RouterA's NIC#1 MAC address

---

**Answer 4:**

Correct!

RouterA's NIC#1 MAC address

---

**Answer 5:**

Correct!

D's IP address

---

**Answer 6:**

Correct!

D's IP address

---

**Answer 7:**

Correct!

D's MAC address

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**Answer 8:**

Correct!

D's MAC address

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**Answer 9:**

Correct!

D's IP address

Quiz Score: **107** out of 107