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

Attempt History

	Attempt	Time	Score
KEPT	Attempt 1	144 minutes	107 out of 107
LATEST	Attempt 2	20 minutes	94.5 out of 107
	Attempt 1	144 minutes	107 out of 107

Score for this attempt: **94.5** out of 107
Submitted Dec 1 at 11:36pm
This attempt took 20 minutes.

Question 1

2 / 2 pts

Network address translation has ameliorated the IP address shortage problem.

Correct!

- (•) True
- ( ) False

Question 2

2 / 2 pts

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

Correct!

- (•) True
- ( ) False

Question 3

2 / 2 pts

It is the responsibility of a routing algorithm to forward packets to the appropriate output link.

- True
- False

Correct!

Question 4

2 / 2 pts

IP datagrams fragments can not be fragmented again.

- True
- False

Correct!

Question 5

2 / 2 pts

If an IP datagram is fragmented into 1000-byte fragments, and later encounters a link with an 800-byte MTU, it is dropped.

- True
- False

Correct!

Question 6

2 / 2 pts

The "Identification" header field is unchanged by IP datagram fragmentation.

Correct!

- (•) True
- ( ) False

Question 7

2 / 2 pts

The "time to live" field in a modern IPv4 datagram header specifies...

Correct!

- (•) the number of remaining hops before the datagram is dropped.
- ( ) the seconds to wait for the remaining fragments of a datagram that has been fragmented.
- ( ) the seconds remaining before data in the datagram is considered obsolete.
- ( ) the milliseconds remaining before the datagram is dropped.

Question 8

1.5 / 2 pts

ICMP can carry messages from... (Check all that apply)

Correct!

- [x] Router to Sender Host

Correct Answer

- [ ] Destination Host to Source Host

Correct!

- [x] Router to Router

Correct!

- [x] Source Host to Destination Host

Question 9

2 / 2 pts

The IPv6 address size is 128 bits.

Correct!

- (•) True
- ( ) False

Question 10

2 / 2 pts

The IPv6 header does not have a checksum.

Correct!

- (•) True
- ( ) False

Question 11

2 / 2 pts

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

Correct!

- [x] Source/Destination Addressing
- [ ] Extension Headers

Correct!

- [x] Hop Limit
- [ ] Payload Length
- [ ] Flow Labeling
- [ ] 128-bit Addresses

Correct! ☑ Version

Correct! ☑ Traffic Type

Question 12

2 / 2 pts

Select all features explicit in IPv6 which are not explicitly available in IPv4.

Correct! ☑ Flow Labeling

Correct! ☑ Payload Length

Correct! ☑ Extension Headers

☐ Source/Destination Addressing

☐ Version

☐ Traffic Type

Correct! ☑ 128-bit Addresses

☐ Hop Limit

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.

Correct! ☑ 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.

Question 14

2 / 2 pts

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

Answer 1:

Correct!

handled at the network edge

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

Correct 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

Correct Answers

::ffff:c07b:2101

::ffff:192.123.33.1

Question 17

0 / 3 pts

::ffff:ABCD:DBCA is a valid preferred-format IPv6 address.

You Answered

- (•) True

Correct Answer

- ( ) False

Question 18

3 / 3 pts

Select all "Taking Turns" schemes below.

- [ ] CSMA
- [ ] Bus Ethernet

Correct!

- [x] Polling Multiple Access
- [ ] Star-configured Ethernet

Correct!

- [x] Token Ring Multiple Access
- [ ] TDMA
- [ ] FDMA

Question 19

3 / 3 pts

A network with a [Select] topology must terminate the endpoints, but in with a [Select] topology they are connected so there is no endpoint.

Answer 1:

Correct! bus

Answer 2:

Correct! ring

Question 20

3 / 3 pts

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

True

Correct! False

Question 21

0 / 3 pts

A MAC address was originally designed to be permanent and unique.

Correct Answer True

You Answered False

Question 22

3 / 3 pts

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

- random access protocol
- "taking turns" protocol

Correct!

- (•) carrier sense protocol
- collision detection protocol

Question 23

3 / 3 pts

The address table shown below would be maintained by a host, router, or switch by...

Hardware Address	IP Address
00-13-72-BA-C0-23	10.0.1.142
00-13-72-BA-9E-F0	10.0.2.5
00-13-72-BA-33-7A	10.0.3.213

Correct!

- (•) ARP
- TCP/IP
- ICMP
- NIC

Question 24

3 / 3 pts

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

- UDP
- DHCP
- ARP

Correct!

Question 25

3 / 3 pts

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

- True
- False

Correct!

Question 26

3 / 3 pts

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

```
01001101
```

- True
- False

Correct!

Question 27

3 / 3 pts

Which of the following are used in a wired Ethernet network? (Check all that apply)

Correct! ☑ Collision Detection (CD)

Correct! ☑ Exponential back-off/retry for collision resolution

☐ Collision Avoidance (CA)

☐ Reservation system with Request to Send (RTS) and Clear to Send (CTS)

Correct! ☑ Carrier Sense Multi-Access (CSMA)

Question 28

3 / 3 pts

Select all Random Access schemes below.

Correct! ☑ ALOHA

Correct! ☑ CSMA

☐ FDMA

☐ TDMA

☐ WDMA

☐ Token Ring Multiple Access

☐ Star-configured Ethernet

Question 29

0 / 3 pts

The method by which a MAC protocol coordinates access to a broadcast medium to prevent and/or reduce collisions is most commonly called _____

Correct Answer
- multiple access
- collision detection
- none of these

You Answered
- collision avoidance

Question 30

3 / 3 pts

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

- router

Correct!
- switch
- star hub
- node

Question 31

0 / 3 pts

The data-link layer provides logical communications between device and device .

Answer 1:

You Answered
- device

Correct Answer
- adjacent node

Answer 2:

Correct Answer — adjacent node

You Answered — device

Question 32

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: hardware framing characters

B: [Select]

C: IP header

D: [Select]

Answer 1:

Correct! — hardware framing characters

Answer 2:

Correct! — hardware frame header

Answer 3:

Correct! — IP header

Answer 4:

Correct! — TCP/UDP header

Question 33

3 / 3 pts

A multiple access scheme which uses a master node to poll each slave node, and control who has 'permission' to transmit at any given time is called...

- channel partitioning protocol
- random access protocol
- reservation protocol
- "taking turns" protocol

Correct!

Question 34

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...

Correct!

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

Question 35

3 / 3 pts

When sending a message to all devices on a link, you would send it to the broadcast MAC address: 00-00-00-00-00-00

- True

Correct!

- (•) False

Question 36

3 / 3 pts

There are reserved MAC addresses unusable for devices.

Correct!

- (•) True
- ( ) False

Question 37

3 / 3 pts

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

- ( ) the sender will send a channel reservation message.
- ( ) the sender will immediately retransmit the frame from the beginning.
- ( ) the sender will give an error message to the upper-level protocol

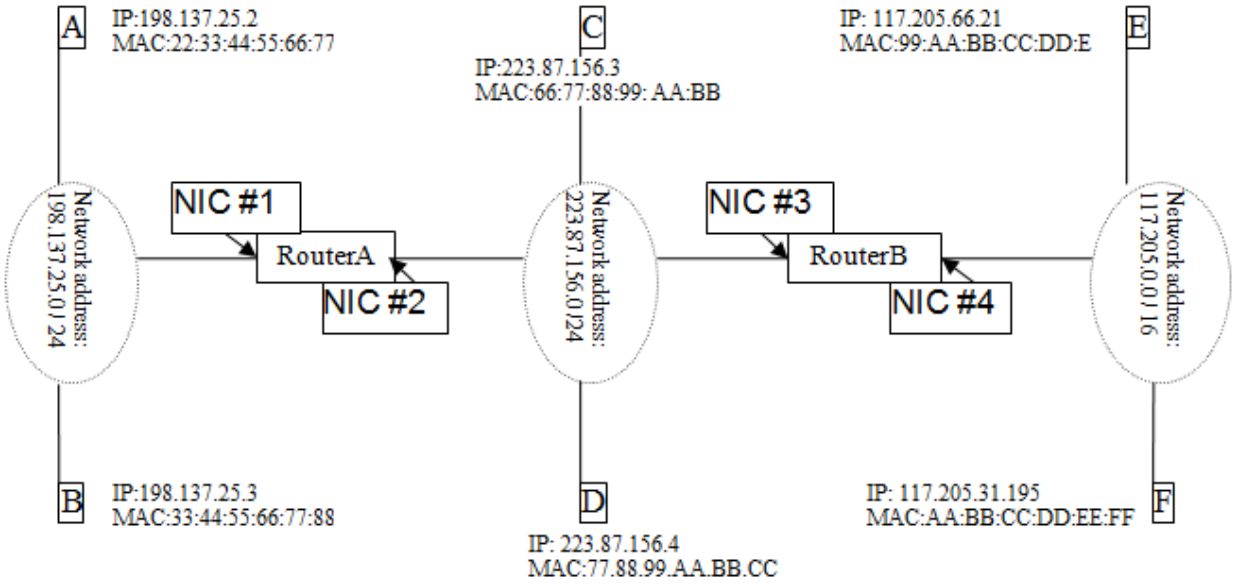
Correct!

- (•) the sender will cut off transmission and wait some time before retransmitting.

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 D's IP address as destination.
9. RouterA's NIC sends frame and D's NIC receives it.

Answer 1:

Correct!

D's IP address

Answer 2:

Correct!

RouterA's NIC#1 IP address

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

Answer 8:

Correct!

D's MAC address

Answer 9:

Correct!

D's IP address

Quiz Score: **94.5** out of 107