Module 9 Summary Exercises

Due Mar 9 at 1:59am **Points** 107 **Questions** 38 **Time Limit** None
Allowed Attempts 2

Instructions

Attempt History

	Attempt	Time	Score
KEPT	Attempt 1	2,847 minutes	99.89 out of 107
LATEST	Attempt 2	77 minutes	98 out of 107
	Attempt 1	2,847 minutes	99.89 out of 107

Score for this attempt: **98** out of 107
Submitted Mar 7 at 2:50pm
This attempt took 77 minutes.

Question 1

2 / 2 pts

Re-assembly of fragmented IP datagrams is handled by...

- the router in the datagram's path
- Correct! the destination host.
- the next router with a large-enough MTU.
- the sending host.

Question 2

2 / 2 pts

The "ping" application (on Windows) uses ICMP echo request/reply.

- Correct! True

False

Question 3

2 / 2 pts

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

Correct! Router to Router

Correct! Destination Host to Source Host

Correct! Router to Sender Host

Correct! Source Host to Destination Host

Question 4

2 / 2 pts

If hosting a server inside a NATed network, how do clients outside the NAPT router connect to the server? (Check all that apply)

Correct! Through a connection relay service

Correct! By using the NAPT devices IP address, and a port number pre-configured to correspond to the server.

Correct! Using Universal Plug and Play (UPnP)

By using the server's local IP address.

Question 5

2 / 2 pts

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

Correct! True

False

Question 6

2 / 2 pts

The transport-layer header is encapsulated in every IP datagram fragment.

True

Correct!

False

Question 7

2 / 2 pts

In network graph terminology, [a] represent routers.

Weights

Correct!

Nodes

Edges

Shortest Path

Question 8

2 / 2 pts

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

True

Correct!

False

Question 9

2 / 2 pts

Select all features explicit in IPv6 which are not explicitly available in IPv4. (Check all that apply)

Correct! ☑ 128-bit addresses

Correct! ☑ Extension Headers

☐ Version

☐ Hop Limit

☐ Traffic Type

Correct! ☑ Flow labeling

Correct! ☑ Explicit Payload Length

☐ Source/Destination Addressing

Question 10

2 / 2 pts

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

Answer 1:

Correct! handled at the network edge

Question 11

2 / 2 pts

When encountering an IPv4-only router, an IPv6 datagram is encapsulated in an IPv4 datagram, with the next in-line IPv6 router as its destination.

Answer 1:

Correct! encapsulated in

Answer 2:

Correct! next in-line IPv6 router

Question 12

2 / 2 pts

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

- [ ] all ISPs provided IPv6 functionality by January 1, 2015.
- [x] IPv4 routers still in use must “tunnel” IPv6 datagrams, by fragmenting/encapsulating them in IPv4 datagrams
- [ ] all IPv4 routers must have been phased out by January 1, 2015.

Correct!

Question 13

2 / 2 pts

The IPv6 header does not have a checksum.

- (•) True
- ( ) False

Correct!

Question 14

2 / 2 pts

The "Hop Limit" IPv6 header field indicates how many remaining hops to the destination.

- ( ) True
- (•) False

Correct!

Question 15

3 / 3 pts

::ffff:ffff:fffff is a valid preferred-format IPv6 host address.

- ( ) True

Correct!

- False

Question 16

3 / 3 pts

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

- True

Correct!

- False

Question 17

3 / 3 pts

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

Correct!

- True
- False

Question 18

0 / 3 pts

For an machine using 2-dimensional even parity for error detection/correction, and the following received bytes, where is the error? If there is no error, select "No Error" for both boxes. Bits are numbered left-to-right and top-down, indexed 1 => 7 then Parity.

Byte # 2

Bit # 4

2D Parity Check Table

Byte #	Code	Parity
1	1000 011	1
2	1001 110	0
3	1001 101	0
4	1100 011	0
5	1101 000	1
6	1100 110	0

7	1010 100	1
Parity	1111 001	0

Answer 1:

You Answered: 2

Correct Answer: Parity

Answer 2:

Correct Answer: Parity

You Answered: 4

Question 19

3 / 3 pts

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

- True
- False

Correct!

Question 20

0 / 3 pts

For an machine using 2-dimensional even parity for error detection/correction, and the following received bytes, where is the error? If there is no error, select "No Error" for both boxes. Bits are numbered left-to-right and top-down, indexed 1 => 7 then Parity.

Byte # [Select]

Bit # [Select]

2D Parity Check Table

Byte #	Code	Parity
1	1000 011	1
2	1000 110	0
3	1001 101	0

4	1100 011	0
5	1101 000	1
6	1100 110	0
7	1010 100	1
Parity	1111 001	1

Answer 1:

You Answered: Parity

Correct Answer: 2

Answer 2:

Correct Answer: 4

You Answered: Parity

Question 21

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...

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

Question 22

3 / 3 pts

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

- Correct! True
- False

Question 23

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 24

3 / 3 pts

Most modern Ethernet LANs use a star topology.

Answer 1:

Correct!

star

Question 25

3 / 3 pts

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

Correct!

- (selected) switch
- node
- star hub
- router

Question 26

3 / 3 pts

Select all Random Access schemes below.

- Token Ring Multiple Access
- FDMA

- [ ] WDMA
- [ ] TDMA

Correct! - [x] ALOHA

Correct! - [x] CSMA

- [ ] Star-configured Ethernet

Question 27

3 / 3 pts

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

Hardware address to IP address table

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 28

3 / 3 pts

Given the following diagram of typical Ethernet hardware frame with partitions A, B, C, D, Data, and A:

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: [Select]

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 29

3 / 3 pts

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

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

Correct! ☑ Collision Detection (CD)

☐ Collision Avoidance (CA)

Correct! ☑ Carrier Sense Multi-Access (CSMA)

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

Question 30

3 / 3 pts

Ethernet provides...

- error detection and correction via parity checks
- no error detection or correction

Correct!

- (●) error detection via CRC check
- error detection and correction via CRC check

Question 31

3 / 3 pts

Which are functions of the Ethernet preamble? (Check all that apply)

Correct!

- [x] Circuit wake-up
- [ ] Stop signal

Correct!

- [x] Clock synchronization
- [ ] Error detection/correction

Correct!

- [x] Start signal
- [ ] Address switching.

Question 32

3 / 3 pts

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

Answer 1:

Correct!

bus

Answer 2:

Correct!

ring

Question 33

0 / 3 pts

It is fairly easy to detect collisions in wireless networks.

You Answered

- (●) True

Correct Answer

- ( ) False

Question 34

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
- ( ) reservation protocol

Correct!

- (●) "taking turns" protocol
- ( ) random access protocol

Question 35

3 / 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!

- (●) multiple access
- ( ) none of these
- ( ) collision detection
- ( ) collision avoidance

Question 36

3 / 3 pts

MAC addresses are redundant because of IP addresses.

- True
- Correct! False

Question 37

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 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.

Subnet #1 has the network address 198.137.25.0 / 24. Host A, Host B, and NIC #1 of Router A are connected to Subnet #1.

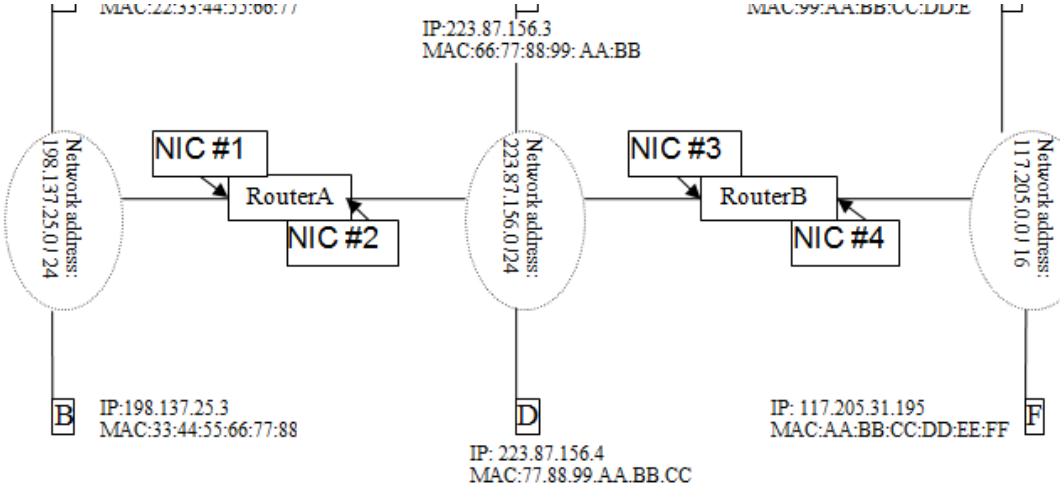
Host A: 198.137.25.2 and 22:33:44:55:66:77

Host B: 198.137.25.3 and 33:44:55:66:77:88

Subnet #2 has the network address 223.87.156.0 / 24. Host C, Host D, NIC #2 of Router A, and NIC #3 of Router B are connected to Subnet #2.

Host C: 223.87.156.3 and 66:77:88:99:AA:BB

Host D: 223.87.156.4 and 77:88:99:AA:BB:CC



1. A finds that D belongs to a different subnet by checking [Select] .
2. A looks up RouterA's NIC#1 IP address in its routing table.
3. A uses ARP to get [Select] .
4. A creates frame with [Select] as destination. Frame contains IP datagram with D's IP address 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 D's MAC address 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: **98** out of 107