Week 5 Quiz Results for Austin Koske

Score for this attempt: 36 out of 38
Submitted Oct 5 at 2:51pm
This attempt took 38 minutes.

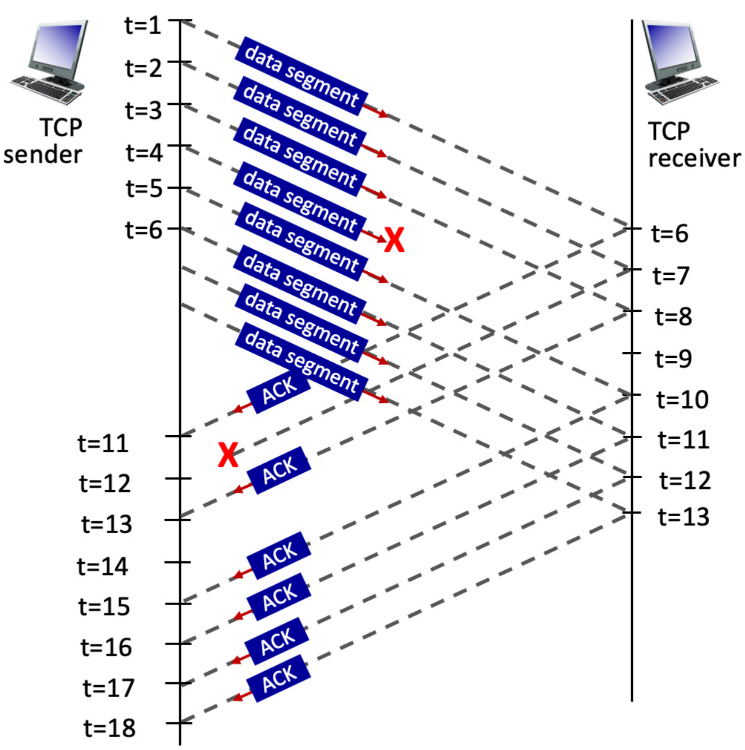
Correct answer

Question 1

2 / 2 pts

3.5-2a. TCP sequence and ACK numbers. Consider the figure below, where a TCP sender sends 8 TCP segments at *t = 1, 2, 3, 4, 5, 6, 7, 8.* Suppose the initial value of the sequence number is 0 and every segment sent to the receiver each contains 100 bytes. The delay between the sender and receiver is 5 time units, and so the first segment arrives at the receiver at t = 6. The ACKs sent by the receiver at *t = 6, 7, 8, 10, 11, 12* are shown. The TCP segments (if any) sent by the sender at t = 11, 13, 15, 16, 17, 18 are *not* shown.

The segment sent at t=4 is lost, as is the ACK segment sent at t=7.



What is the sequence number of the segment sent at t=2?

- 200
- 100

- 1
- 2

Nice. This answer is correct.

Correct answer

Question 2

2 / 2 pts

3.5-2b. TCP sequence and ACK numbers (b). Consider again the figure above (in question 3.5-2a) where a TCP sender sends 8 TCP segments at *t = 1, 2, 3, 4, 5, 6, 7, 8* and the segment sent at t=4 is lost, as is the ACK segment sent at t=7.

What is the ACK value carried in the receiver-to-sender ACK sent at t = 6?

- 200
- 100
- 1
- 2
- 0
- None of these other answers.

Nice. This answer is correct.

Correct answer

Question 3

2 / 2 pts

3.5-2c. TCP sequence and ACK numbers (c). ;Consider again the figure above (in question 3.5-2a) where a TCP sender sends 8 TCP segments at *t = 1, 2, 3, 4, 5, 6, 7, 8* and the segment sent at t=4 is lost, as is the ACK segment sent at t=7.

What is the ACK value carried in the receiver-to-sender ACK sent at t = 8?

- 200
- 100
- 300
- 400
- 3
- None of these other answers.

Nice. This answer is correct.

Correct answer

Question 4

2 / 2 pts

3.5-2d. TCP sequence and ACK numbers (d). Consider again the figure above (in question 3.5-2a) where a TCP sender sends 8 TCP segments at *t = 1, 2, 3, 4, 5, 6, 7, 8* and the segment sent at t=4 is lost, as is the ACK segment sent at t=7.

What is the ACK value carried in the receiver-to-sender ACK sent at t = 10?

- ○ 200
- ○ 100
- ◉ 300
- ○ 400
- ○ 3
- ○ None of these other answers.

Nice. This answer is correct.

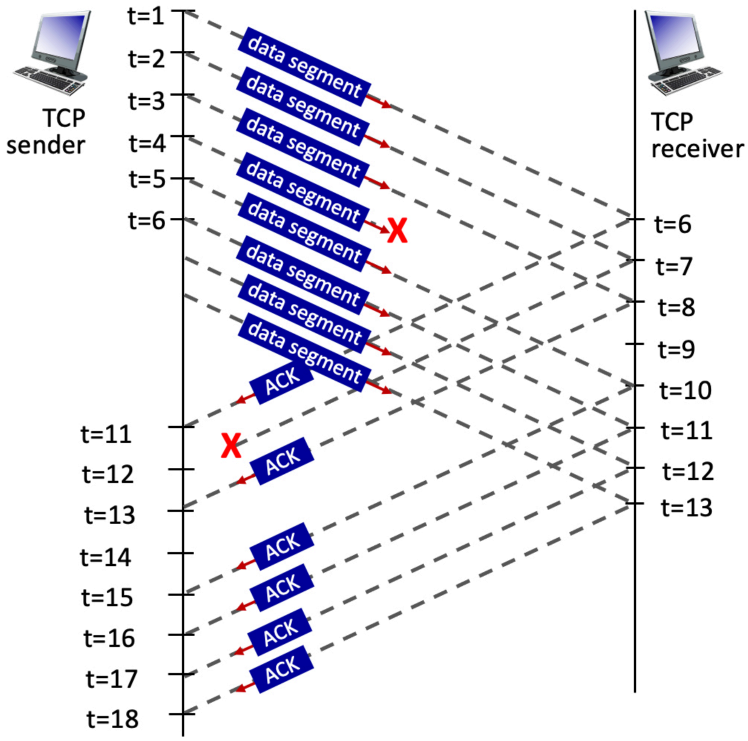
Wrong answer

Question 5

0 / 2 pts

3.7-1a. TCP congestion control example (a). Consider the figure below, where a TCP sender sends 8 TCP segments at *t = 1, 2, 3, 4, 5, 6, 7, 8.* Suppose the initial value of the sequence number is 0 and every segment sent to the receiver each contains 100 bytes. The delay between the sender and receiver is 5 time units, and so the first segment arrives at the receiver at *t = 6*. The ACKs sent by the receiver at *t = 6, 7, 8, 10, 11, 12* are shown. The TCP segments (if any) sent by the sender at t = *11, 13, 15, 16, 17, 18* are *not* shown.

The segment sent at *t=4* is lost, as is the ACK segment sent at *t=7*.



What is the sender action at *t = 11* upon receipt of the ACK?

Increase the congestion window size, move the window base forward by 2, and send new segments, as available and as allowed by the congestion window

Increase the congestion window size, move the window base forward by 1, and send new segments, as available and as allowed by the congestion window

Keep the congestion window size the same but send new segments, as available and as allowed by the congestion window.

Do nothing.

Send an ACK to the ACK.

Not quite. This answer is incorrect.

Correct answer

Question 6

2 / 2 pts

3.7-1b. TCP congestion control example (b). Consider again the figure above (in question 3.7-1a), where a TCP sender sends 8 TCP segments at *t = 1, 2, 3, 4, 5, 6, 7, 8* and the segment sent at *t=4* is lost, as is the ACK segment sent at *t=7*.

What is the sender action at *t=13* upon receipt of the ACK?

- Increase the congestion window size, move the window base forward by 2, and send new segments, as available and as allowed by the congestion window
- Increase the congestion window size, move the window base forward by 1, and send new segments, as available and as allowed by the congestion window
- Keep the congestion window size the same. Increment the duplicate ACK count by 1.
- Do nothing.
- Send an ACK to the ACK.

Nice. This answer is correct.

Correct answer

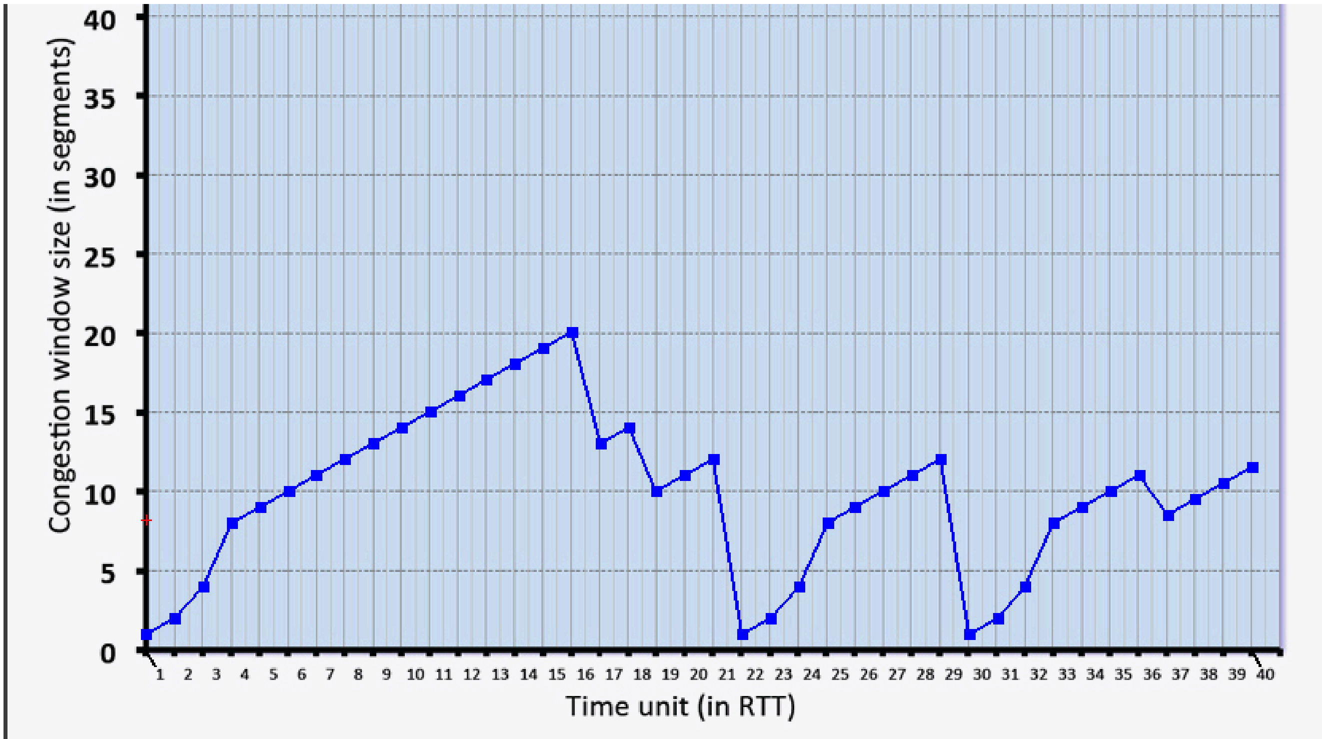
Question 7

2 / 2 pts

3.7-2a Phases of TCP congestion control (a). Consider the figure below, which plots the evolution of TCP's congestion window at the beginning of each time unit (where the unit of time is equal to the RTT); see Figure 3.53 in the text. In the abstract model for this problem, TCP sends a "flight" of packets of size `cwnd` at the beginning of each time unit. The result of sending that flight of packets is that either (i) all packets are ACKed at the end of the time unit, (ii) there is a timeout for the first packet, or (iii) there is a triple duplicate ACK for the first packet.

During which of the following intervals of time is TCP performing slow start?

[Note: you can generate/solve/practice many similar instances of this question **here (http://gaia.cs.umass.edu/kurose_ross/interactive/?q=c3q6)** .]



- [x] [1,3]
- [ ] [4,15]
- [ ] 16
- [ ] 17
- [ ] 18
- [ ] [19,20]
- [ ] 21
- [x] [22,24]

Nice! This answer is correct.

Correct answer

Question 8

2 / 2 pts

3.7-2b Phases of TCP congestion control (b). Consider again the figure above (question 3.7-2a) showing the evolution of TCP's congestion window size. In this figure, during which of the following intervals of time is TCP performing congestion avoidance?

- [ ] [1,3]
- [x] [4,15]
- [ ] 16
- [x] 17

- [ ] 18
- [x] [19,20]
- [ ] 21
- [ ] [22,24]

Nice! This answer is correct.

Correct answer

Question 9

2 / 2 pts

3.7-2c Phases of TCP congestion control (c). Consider again the figure above (question 3.7-2a) showing the evolution of TCP's congestion window size. In this figure, at the end of which units of time does TCP detect a triple-duplicate-ACK?

- [ ] [1,3]
- [ ] [4,15]
- [x] 16
- [ ] 17
- [x] 18
- [ ] [19,20]
- [ ] 21
- [ ] [22,24]

Nice! This answer is correct.

Correct answer

Question 10

2 / 2 pts

3.7-2dPhases of TCP congestion control (d). Consider again the figure above (question 3.7-2a) showing the evolution of TCP's congestion window size. In this figure, at the end of which unit(s) of time does TCP detect a loss via timeout?

- [1,3]
- [4,15]
- 16

17

18

[19,20]

21

[22,24]

Nice! This answer is correct.

Correct answer

Question 11

2 / 2 pts

4.1-2. Forwarding versus routing. Consider the travel analogy discussed in the textbook - some actions we take on a trip correspond to **forwarding** and other actions we take on a trip correspond to **routing**. Which of the following travel actions below correspond to ***forwarding***? The other travel actions that you don't select below then correspond to routing.

- [x] A car takes the 3rd exit from a roundabout.
- [ ] A car takes highway 80 between New York and Chicago, rather than highway 87 to Albany and from there take Interstate 90 to Chicago.
- [ ] A traveler decides to fly to Sydney through Singapore rather that Dubai.
- [x] A car waits at light and then turns left at the intersection.
- [x] A car stops at an intersection to “gas-up” and take a “bathroom break”
- [ ] A climber decides to take the South Col Route to the top of Mt Everest rather than the Northeast Ridge route.

Nice! This answer is correct.

Correct answer

Question 12

2 / 2 pts

4.1-5. Best effort service. Which of the following quality-of-service guarantees are part of the Internet’s best-effort service model? Check all that apply.

Guaranteed delivery from sending host to receiving host.

Guaranteed delivery time from sending host to receiving host.

In-order datagram payload delivery to the transport layer of those datagrams arriving to the receiving host.

A guaranteed minimum bandwidth is provided to a source-to-destination flow of packets

None of the other services listed here are part of the best-effort service model. Evidently, best-effort service really means no *guarantees* at all!

Nice! This answer is correct.

Correct answer

Question 13

2 / 2 pts

4.2-4. Longest prefix matching. Consider the following forwarding table below. Indicate the output to link interface to which a datagram with the destination addresses below will be forwarded under longest prefix matching. (Note: The list of addresses is ordered below. If two addresses map to the same output link interface, map the first of these two addresses to the first instance of that link interface.) [Note: You can find more examples of problems similar to this **here** (http://gaia.cs.umass.edu/kurose_ross/interactive/?q=c4q2) .]

Destination Address Range	Link interface
11001000 00010111 00010*** ********	0
11001000 00010111 00011000 ********	1
11001000 00010111 00011*** ********	2
otherwise	3

11001000 00010111 00010010 10101101

This is the first destination ad

11001000 00010111 00011000 00001101

This is the first destination ad

11001000 00010111 00011001 11001101

This is the first destination ad

10001000 11100000 00011000 00001101

This is the first destination ad

11001000 00010111 00011000 11001111

This is the second destinatior

11001000 00010111 00010001 01010101

This is the second destinatior

11001000 00010111 00011101 01101101

This is the second destinatior

Other Incorrect Match Options:

- This is the second destination address in the list that maps to output port 3.

Nice! This answer is correct.

Correct answer

Question 14

2 / 2 pts

4.3-04. What is a subnet? What is meant by an IP subnet? (Check zero, one or more of the following characteristics of an IP subnet).

- [x] A set of device interfaces that can physically reach each other without passing through an intervening router.
- [ ] A set of devices that always have a common first 16 bits in their IP address.
- [x] A set of devices that have a common set of leading high order bits in their IP address.
- [ ] A set of devices all manufactured by the same equipment maker/vendor.

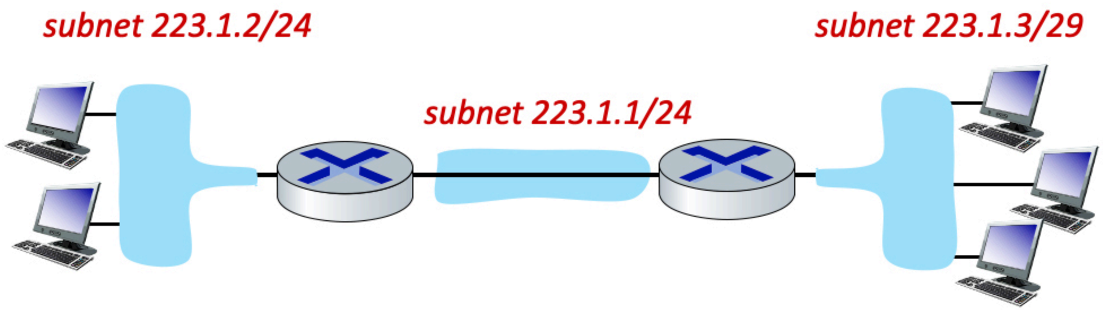
Nice! This answer is correct.

Correct answer

Question 15

2 / 2 pts

4.3-05a. Subnetting(a). Consider the three subnets in the diagram below.



What is the maximum # of interfaces in the 223.1.2/24 network?

- 256
- 128
- There's no a priori limit on the number of interfaces in this subnet.
- Two hosts, as shown in the figure.
- 2**32

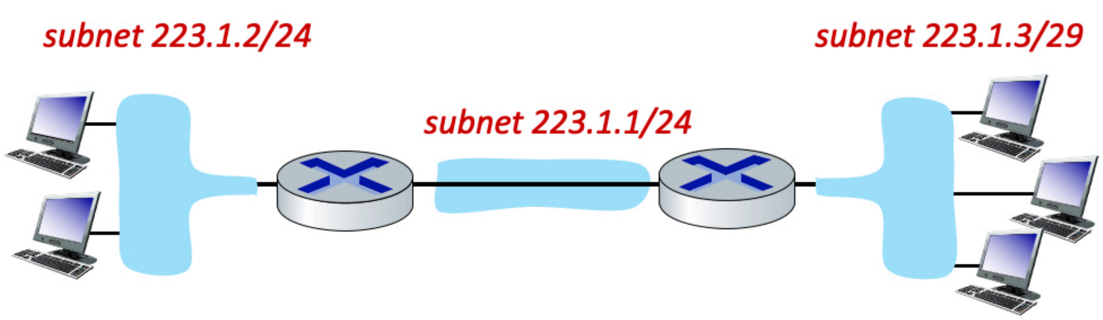
Nice! Your answer is correct.

Correct answer

Question 16

2 / 2 pts

4.3-05b. Subnetting(b). Consider the three subnets in the diagram below.



What is the maximum # of interfaces in the 223.1.3/29 network?

- 8
- 128
- There's no a priori limit on the number of interfaces in this subnet.
- Three hosts, as shown in the figure.

- [ ] 2**32

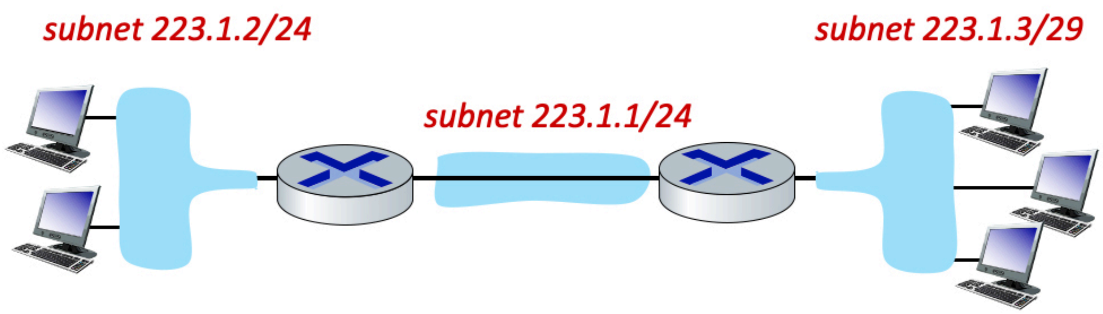
Nice! Your answer is correct.

Correct answer

Question 17

2 / 2 pts

4.3-05c. Subnetting(c). Consider the three subnets in the diagram below.



Which of the following addresses can ***not*** be used by an interface in the 223.1.3/29 network? Check all that apply.

- [ ] 223.1.3.6
- [ ] 223.1.3.2
- [x] 223.1.3.16
- [x] 223.1.2.6
- [x] 223.1.3.28

Nice! This answer is correct.

Correct answer

Question 18

2 / 2 pts

4.3-07. DHCP request message. Which of the following statements about a DHCP request message are true (check all that are true). Hint: check out Figure 4.24 in the 7th and 8th edition of our textbook.

- [ ] A DHCP request message is sent from a DHCP server to a DHCP client.
- [x] A DHCP request message is sent broadcast, using the 255.255.255.255 IP destination address.

- [ ] A DHCP request message is optional in the DHCP protocol.
- [x] A DHCP request message *may* contain the IP address that the client will use.
- [ ] The transaction ID in a DCHP request message is used to associate this message with previous messages sent by this client.
- [x] The transaction ID in a DHCP request message will be used to associate this message with future DHCP messages sent from, or to, this client.

Nice! This answer is correct.

Correct answer

Question 19

2 / 2 pts

4.3.10. Network Address Translation (NAT). Which one of the following operations is *not* performed by NAT.?

- (selected) Generating ACKs back to the TCP sender and then taking responsibility for reliably delivery the segment to its destination, possibly using a non-TCP reliable data transfer protocol.
- On an outgoing datagram, changing the transport-layer port number of the transport-layer segment inside a datagram received from the LAN side of the NAT.
- On an incoming datagram from the public Internet side of a NAT, changing the destination IP address of a datagram to a new destination IP address that is looked up in the NAT table, and (possibly after other actions), sending that IP datagram on to the LAN side of the NAT.
- On an outgoing datagram, changing the source IP address of a datagram received from the LAN side of the NAT

Nice! Your answer is correct.

Quiz Score: 36 out of 38