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**Started on** Thursday, 17 November 2022, 9:56 AM

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**State** Finished

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**Completed on** Thursday, 17 November 2022, 10:10 AM

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**Time taken** 14 mins

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**Grade** 6.00 out of 20.00 (30%)

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**Question 1**

Incorrect

Mark 0.00 out of 1.00

About the TCP and UDP packet header, the "Acknowledgement Number" field is included in  ❌ .

The correct answer is:

About the TCP and UDP packet header, the "Acknowledgement Number" field is included in [TCP Header Only].

**Question 2**

Correct

Mark 1.00 out of 1.00

Which mechanism is used to provide TCP flow control?  ✔️

The correct answer is:

Which mechanism is used to provide TCP flow control? [sliding window]

**Question 3**

Partially correct

Mark 0.50 out of 1.00

Consider assign an IPv6 address to an interface that has the MAC address value of **03-21-44-33-A5-B4** by using SLACC,

- What will be the 64-bit interface ID?

Answer:



- What will be the link-local address?

Answer:



03 => 0000 0011

Invert bit 7 ==> 0000 0001 => 01

**Question 4**

Correct

Mark 1.00 out of 1.00

Given the following sliding window:

1	2	3	4	5	6	7	8	9	10	11
---	---	---	---	---	---	---	---	---	----	----

Suppose a sender receives **ACK# = 5** and **window size = 3**

Then, the sliding window will include which bytes.

(Separate each byte by a comma without including any space, e.g., 1,2,3,4)

Answer:



The correct answer is: 5,6,7

**Question 5**

Partially correct

Mark 0.50 out of 1.00


A   stores responses to client's requests, and helps   .

The correct answer is: A [web proxy] stores responses to client's requests, and helps [reduce delivery time of a response].

**Question 6**

Incorrect

Mark 0.00 out of 1.00

In TCP connection establishment, the 3rd packet that will be sent out is the   packet.

The correct answer is:


In TCP connection establishment, the 3rd packet that will be sent out is the [ACK] packet.

**Question 7**

Partially correct

Mark 1.00 out of 2.00

Which statement(s) are true regarding the email protocol? (Your score will be partially deducted for any wrong answer.)

- ☐ a. An MTA utilizes the IMAP4 protocol.
- ☐ b. SMTP uses UDP service.
- ☐ c. IMAP4 runs on a web browser enabling users to send their emails.
- ☐ d. Examples of a user agent include Microsoft Outlook and Apple Mail.
- ☒ e. POP3 is a protocol used for retrieving emails. 

The correct answers are:

Examples of a user agent include Microsoft Outlook and Apple Mail.,

POP3 is a protocol used for retrieving emails.

**Question 8**

Incorrect

Mark 0.00 out of 1.00

Which of the following is an IPv4 private address?

- ☐ a. 10.256.7.8
- ☐ b. 8.8.8.8
- ☐ c. 172.31.44.5
- ☒ d. 101.72.52.54 ❌
- ☐ e. 1192.168.1.2

The correct answer is:

172.31.44.5

**Question 9**

Incorrect

Mark 0.00 out of 1.00

Suppose a computer sends a TCP segment with Sequence No. 99 with 1001 bytes, what will be the Acknowledgement No. returns back from its peer?

Input only a numeric.

Answer:  ❌

The correct answer is: 1100

**Question 10**

Partially correct

Mark 1.00 out of 2.00

Suppose a web page with 6 resource files.

- Server 1 contains this web page and 3 text files
- Server 2 contains 1 image file.
- The remaining files are stored separately on different servers.

How many TCP connections are required for a client to request this web page and all the resource files under persistent and non-persistent approaches?

Persistent:



Non-Persistent:



\* input only the number

**Question 11**

Incorrect

Mark 0.00 out of 3.00

Suppose in the current round  $ssthresh = 32$  and the  $cwnd = 34$ , and the sender detects a packet loss based on a timeout. If **TCP Reno** is adopted, then

- The new  $ssthresh$  is

✗ . (input the number only)

- The new  $cwnd$  is

✗ . (input the number only)

- The system enters the  mode.

**Question 12**

Incorrect

Mark 0.00 out of 1.00

The port number 22 is considered as a  ❌ .

The correct answer is:

The port number 22 is considered as a [Well-known port].

**Question 13**

Not answered

Marked out of 1.00

Change the following IPv6 notation to a 128-bit full address.

fe80::1:22:333:4444

*Hint: We must have 8 groups of hexadecimal.*

Answer:  ❌

The correct answer is: fe80:0000:0000:0000:0001:0022:0333:4444

**Question 14**

Incorrect

Mark 0.00 out of 1.00

Comparing to the IPv4 header, which field is not included in the IPv6 header?

Answer:  ❌

The correct answer is:

Comparing to the IPv4 header, which field is not included in the IPv6 header?

Answer: [Header Checksum]

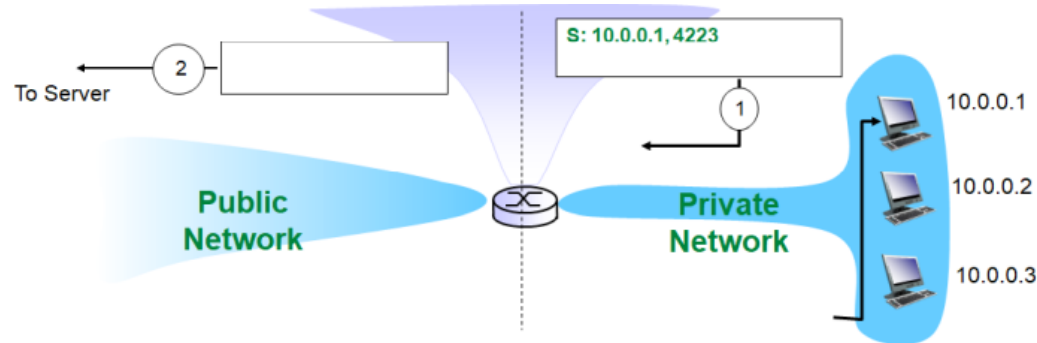
Question 15

Incorrect

Mark 0.00 out of 1.00

According to the NAT Translation table below, what would be the source IP address and source port number of Packet 2?

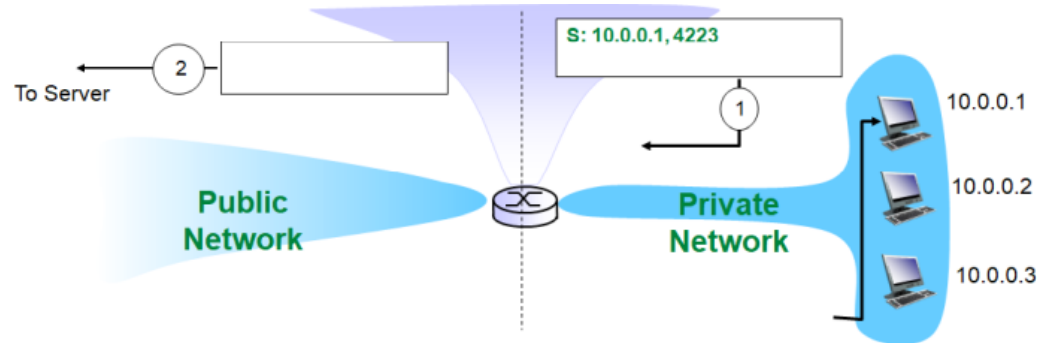
- Source IP address == 165.3.2.1 ✖
- Source Port Number == 80 ✖



Line#	Pro	Inside Global	Inside Local	Outside Local	Outside Global
1	TCP	75.4.3.1:5533	10.0.0.1:5533	165.3.2.1:80	165.3.2.1:80
2	UDP	75.4.3.1:5534	10.0.0.2:5533	202.12.8.1:22	202.12.8.1:22
3	TCP	75.4.3.1:1024	10.0.0.3:5001	74.5.8.2:80	74.5.8.2:80
4	UDP	75.4.3.1:1028	10.0.0.1:4223	8.8.8.8:53	8.8.8.8:53
5					

The correct answer is:  
According to the NAT Translation table below, what would be the source IP address and source port number of Packet 2?

- Source IP address == [74.5.3.1]
- Source Port Number == [1028]



Line#	Pro	Inside Global	Inside Local	Outside Local	Outside Global
1	TCP	75.4.3.1:5533	10.0.0.1:5533	165.3.2.1:80	165.3.2.1:80
2	UDP	75.4.3.1:5534	10.0.0.2:5533	202.12.8.1:22	202.12.8.1:22
3	TCP	75.4.3.1:1024	10.0.0.3:5001	74.5.8.2:80	74.5.8.2:80



4	UDP	75.4.3.1:1028	10.0.0.1:4223	8.8.8.8:53	8.8.8.8:53
5					

**Question 16**

Correct

Mark 1.00 out of 1.00

Select whether the below characteristics below to TCP or UDP.

- Has a sliding window  ✓
- No handshaking  ✓

The correct answer is:

Select whether the below characteristics below to TCP or UDP.

- Has a sliding window [TCP]
- No handshaking [UDP]