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Started on	Monday, 7 March 2022, 3:07 PM
State	Finished
Completed on	Monday, 7 March 2022, 3:27 PM
Time taken	20 mins
Marks	14.00/25.00
Grade	56.00 out of 100.00

### Question 1

Correct

Mark 1.00 out of 1.00

Which one is NOT a characteristic of client-server architecture?

Select one:

- ☐ a. The server(s) is always ON
- ☒ b. Every end system can act both as client and server ✓
- ☐ c. Every client can only communicate with a dedicated server
- ☐ d. The server has permanent IP address

The correct answer is: Every end system can act both as client and server

**Question 2**

Correct

Mark 1.00 out of 1.00

Which one is NOT a characteristic of peer-to-peer (P2P) architecture?

Select one:

- ☐ a. Every peer or end system can act both as client and server
- ☐ b. Every peer that joins the network can communicate with each other
- ☐ c. The server(s) in P2P network is not always ON
- ☒ d. The server in P2P network has permanent IP address ✓

The correct answer is: The server in P2P network has permanent IP address

**Question 3**

Correct

Mark 1.00 out of 1.00

The transport layer protocol used by DNS:

Select one:

- ☐ a. SCP
- ☐ b. RTP
- ☐ c. TCP
- ☒ d. UDP ✓

The correct answer is: UDP

**Question 4**

Correct

Mark 1.00 out of 1.00

This thing happens only in HTTP non-persistent connection:

Select one:

- ☐ a. Several objects can be sent in a single TCP connection
- ☐ b. Multiple TCP connections are not required to download several objects
- ☐ c. TCP connection is closed after all objects referred in the base html have been sent
- ☒ d. Only one object can be sent in a single TCP connection ✓

The correct answer is: Only one object can be sent in a single TCP connection

**Question 5**

Partially correct

Mark 4.00 out of 8.00

A client accesses a website which landed in an index.html page. It turns out that the index.html page contains references to 1 css file, 1 javascript file, and 10 jpeg images. How many RTTs are required by the client to load the whole page by using the following HTTP method:

**NOTE:**

- Just write the total RTTs in number.
- Assume 2-way handshake for TCP connection establishment, and ignore file transmission time and TCP closing)

a. Non-persistent with non-parallel: 26 ✓ RTT

b. Non-persistent with 4 parallel connections: 14 ✗ RTT

c. Persistent with non-pipeline: 14 ✓ RTT

d. Persistent with pipeline 4 requests (assume requests and response can be pipelined at the same time): 52 ✗ RTT

**Question 6**

Correct

Mark 1.00 out of 1.00

A HTTP Request contains \*If-modified-since: <date>\* field, and it turns out that the cache-copy in the browser is out-of-date (e.g. there is change after the \*<date>\* of cache-copy). What response is sent by the server then?

Select one:

- ☐ a. HTTP 200 OK (no Data)
- ☐ b. HTTP 304 Not Modified + Data
- ☒ c. HTTP 200 OK + Data ✓
- ☐ d. HTTP 304 Not Modified (no Data)

The correct answer is: HTTP 200 OK + Data

**Question 7**

Correct

Mark 1.00 out of 1.00

Which is NOT the advantages of web caching using proxy server?

Select one:

- ☒ a. Easier to monitor the traffic in the organization ✓
- ☐ b. Improve effectiveness of content delivery for poor content provider
- ☐ c. Reduce latency of client's request to the remote server
- ☐ d. Reduce outbound traffic in the organization's access link

The correct answer is: Easier to monitor the traffic in the organization

**Question 8**

Incorrect

Mark 0.00 out of 1.00

Which one is NOT the advantages of HTTP/2 over HTTP/1.1?

Select one:

- ☐ a. Packet loss recovery does not stall all object transmission
- ☒ b. The object is divided into frames and performs interleaving frame transmission to mitigate HoL blocking ✗
- ☐ c. Backward compatibility with HTTP/1.1, i.e. methods, status codes and most headers are unchanged
- ☐ d. Transmission order of requested objects based on client-specified object priority

Your answer is incorrect.

The correct answer is: Packet loss recovery does not stall all object transmission

**Question 9**

Incorrect

Mark 0.00 out of 1.00

The first DNS server that is contacted by a client that wants to access a website:

Select one:

- ☒ a. Root DNS server ❌
- ☐ b. Authoritative DNS server
- ☐ c. Local DNS server
- ☐ d. TLD DNS server

The correct answer is: Local DNS server

**Question 10**

Correct

Mark 1.00 out of 1.00

When a local DNS doesn't have any cache or record of the requested domain name, the follow up message will be sent out to:

Select one:

- ☒ a. Root DNS server ✔️
- ☐ b. client
- ☐ c. Authoritative DNS server
- ☐ d. TLD DNS server

The correct answer is: Root DNS server

**Question 11**

Incorrect

Mark 0.00 out of 1.00

DNS record type that is used to translate a host name into its authoritative DNS server:

Select one:

- ☐ a. MX
- ☒ b. A ✖
- ☐ c. CNAME
- ☐ d. NS

The correct answer is: NS

**Question 12**

Correct

Mark 1.00 out of 1.00

When an Authoritative DNS server receives a query by using *iterative* method, say for a domain name *abc.org*, the response section contains this information:

Select one:

- ☐ a. .org's authoritative name server's IP address
- ☒ b. abc.org's IP address ✔
- ☐ c. abc.org's authoritative name server and its IP address
- ☐ d. .org's TLD server domain name and its IP address

The correct answer is: abc.org's IP address

**Question 13**

Incorrect

Mark 0.00 out of 1.00

When a TLD DNS server receives a query by using \*recursive\* method, say for a domain name \*abc.org\*, the response section contains this information:

Select one:

- ☒ a. .org's TLD server domain name and its IP address ❌
- ☐ b. abc.org's IP address
- ☐ c. .org's authoritative name server's IP address
- ☐ d. abc.org's authoritative name server and its IP address

The correct answer is: abc.org's IP address

**Question 14**

Correct

Mark 1.00 out of 1.00

The protocol used to send emails between mail servers:

Select one:

- ☐ a. SNMP
- ☐ b. POP3
- ☐ c. IMAP
- ☒ d. SMTP ✔️

The correct answer is: SMTP

**Question 15**

Incorrect

Mark 0.00 out of 1.00

What SMTP \*MAIL FROM\* command does?

Select one:

- ☐ a. defines the sender's email address to the email server
- ☐ b. writes the \*From:\* field within the email header lines
- ☒ c. let the email recipient knows who the sender is ✖
- ☐ d. tells the origins of the email server

The correct answer is: defines the sender's email address to the email server

**Question 16**

Correct

Mark 1.00 out of 1.00

One of the differences between HTTP and SMTP:

Select one:

- ☐ a. HTTP uses command-response interaction while SMTP uses query-response interaction
- ☐ b. SMTP pulls the message from the server while HTTP push the message to the server
- ☒ c. HTTP encapsulates each object in its own response message while SMTP sends multiple objects in multipart message ✔
- ☐ d. HTTP only uses non-persistent while SMTP only uses persistent connections

The correct answer is: HTTP encapsulates each object in its own response message while SMTP sends multiple objects in multipart message



**Question 17**

Incorrect

Mark 0.00 out of 1.00

One of the tit-for-tat principle in BitTorrent:

Select one:

- ☐ a. a node do not send chunks to the other peers beside the top four and the randomly selected peer
- ☐ b. every 30 secs, a node chocked the current top four peers and unchocked other four peers randomly
- ☐ c. a node sends chunks also to the other peers beside the top four and the randomly selected peer
- ☒ d. a node re-evaluate the top four peers every 30 secs ❌

The correct answer is: a node do not send chunks to the other peers beside the top four and the randomly selected peer

**Question 18**

Incorrect

Mark 0.00 out of 1.00

One of the similarities between socket programming by using UDP and TCP transport service:

Select one:

- ☐ a. When a client is connected, a new socket is created by a server to communicate with that particular client
- ☐ b. The server waits for connection establishment request from client
- ☐ c. Both server and client create a socket to send and receive packet
- ☒ d. Sender has to explicitly attach destination IP address and port number in the packet ❌

The correct answer is: Both server and client create a socket to send and receive packet