Week 8 Practice Questions with Solution

1] A server has a 16-core CPU, 64 GB RAM and 1 Gbps network connection. It can run a Python Flask application that can generate 500 HTML pages per second. Each page also has a 1 MB image that needs to be downloaded by the client. What will be the maximum number of requests per second that the server can handle? [NAT] Answer: 125.

Solution: 1MB image = 8Mbits, so about 125 of these per second can be sent over the network.

2] Asynchronous updates refer to: [MCQ]

1. loading part of a page in the background.
2. operating without a system clock.
3. using asynchronous circuit design for the processor in the data center.
4. having separate files for HTML, CSS and Javascript.

Answer: Option 1

Solution: Asynchronous updates refer to loading part of a page in the background.

3] DOM in the context of the web refers to: [MCQ]

1. document object model
2. document oriented meetings
3. data object mechanism
4. driver optional mode

Answer: Option 1

Solution: DOM in the context of the web refers to document object model. The rest are just random.

4] Using Javascript for updating the DOM will generally [MCQ]

1. increase load on the server.
2. increase load on the client.
3. increase load on the network.
4. decrease load on the client.

Answer: Option 2

Solution: Using Javascript for updating the DOM will generally increase load on the client. No particular reason for (c) to hold, so it is not generally true.

5] DOM updates can be used to [MSQ]

1. add text to the page.
2. remove text from the page.
3. add new entries to the database.
4. all of the above

Answer: Option 1 and 2

Solution: Changing the database will be done through some other API query which is not a DOM update.

6] Which of the following is most secure? [MCQ]

1. static HTML web page
2. PHP script on server
3. JS with native mode access
4. JS with only basic API access

Answer: Option 1

Solution: Static HTML web page is more secure.

7] Proper use of the constraint validation API can reduce the load on__. [MSQ]

1. client
2. server
3. network
4. all of the above

Answer: Option 2 and 3.

Solution: Since fewer requests will go to the server. It is not reducing client load in any way.

8] A Python flask application is given below. [MCQ]

```
from flask import Flask
app = Flask(__name__)

@app.route("/")
def hello():
    return "<P> Hello World </p>"

if __name__ == "__main__":
    app.run(debug=True)
```

Which of the following options is true?

1. It is an example of static web page being used.
2. It is an example of dynamic web page being used.
3. The browser will not render any output as a webpage.
4. None of the above

Answer: Option 2.

Solution: The flask application returns an HTML file which is generated at the runtime whenever the app is run even though there is no change in the HTML content. Hence, it is an example of dynamic web page being run.

9] Which of the following statements is/are true in context of 'DOM' updates? [MSQ]

1. Generating a page completely through DOM updates is good for the accessibility of the page.

2. Generating a page completely through DOM updates will make the page almost inaccessible.
3. HTML is generated on client side and cannot be done by browsers with limitations.
4. All of the above.

Answer: Option 2 and 3.

Solution: Web pages should not be generated completely through DOM updates as it makes the webpage completely inaccessible and the HTML is generated on client side and cannot be done by browsers with limitations.

10] Which of the following is/are true for the web browsers? [MSQ]

1. Javascript is the only language that can be made available on web browsers.
2. Web browsers usually have JS engines to run Javascript.
3. It is quite possible to build some other browser that supports languages other than Javascript.
4. None of the Above.

Answer: Option 2 and 3.

Solution: There are no such fundamental limitations that decide on Javascript being the only language that can be made available on web browsers and it is quite possible to build some other browser that supports another language. Just that this has not been done generally. Web browsers usually have JS engines to run Javascript, but the browser itself is generally not written in JS.

11] Is it impossible to run JS on a text mode browser? [MCQ]

1. Yes, because text-mode browsers do not support JS.
2. No. Even though most text-mode browsers do not support it, but there is nothing preventing a text browser from loading JS files and executing them
3. Yes, because text-mode browsers only support text files.
4. No, text-mode browsers are specifically built to run JS.

Answer: Option 2.

Solution: Most of the text-mode browsers do not support it, but there is nothing preventing a text browser from loading JS files and executing them. for example, edbrowse claims to support JavaScript.

12] Which of the following statements regarding WASM is/are true? [MSQ]

1. WASM is a compiled form of Javascript.
2. WASM is an instruction set that is supported on many browsers.
3. It is not limited to JS and can be generated from other languages also.
4. All of the above

Answer: Option 2 and 3.

Solution: WebAssembly is an open standard that specifies a portable binary-code format for executable programmes, as well as a textual assembly language and interfaces to make

interactions between these programmes and their host environment easier. WASM is not limited to JS and can be generated from other languages also.