

1) Which of the following statements about the HTTP protocol is FALSE?

- A) HTTP can transport content other than HTML.
- B) Both HTTP GET and POST can transport user data.
- C) HTTP must be used on port 80.
- D) HTTP is stateless (has no notion of previous messages).
- E) HTTP POST will not be cached by the browser.

2) Which of the following statements about URLs is FALSE?

- A) The address `http://localhost:2406/` points to the same location as `http://127.0.0.1:2406/`.
- B) A single IP address can serve more than one port number at a time.
- C) A query string attaches optional information to an URL.
- D) The protocol of an URL specifies information about the location of the server.
- E) All of the above are true.

3) Which ONE of the following is TRUE about the structure of HTTP messages?

- A) HTTP request and response messages contain the same information.
- B) HTTP response messages contain information about the HTTP method used. X
- C) HTTP request messages may include a message body.
- D) Query parameters are part of the message header section of HTTP messages.
- E) All of the above are false.

4) Which ONE of the following is FALSE about JSON encoding?

- A) JSON string property names must use double quotes. ✓
- B) `JSON.parse()` is used by the sender of a javascript object.
- C) JSON can describe data but not javascript functions. ✓
- D) JSON support is built-in in the browser and node. ✓
- E) JSON can be transported with a MIME type 'text/plain'. ✓

5) Which of the following is NOT a standard HTTP method?

- A) GET ✓
- B) POST ✓
- C) PUT ✓
- D) END
- E) HEAD ✓

⇒ similar to get

6) Which of the following statements is FALSE of npm:

- A) npm is a command executed in the node REPL
- B) npm installs new modules to the `node_modules` folder ✓
- C) The syntax for installing new modules is: `npm install <modulename>` ✓
- D) npm stands for Node Package Manager. ✓
- E) npm is not needed for built-in and self-written modules. ✓

Consider the following HTML code for your answers to questions 7 through 11:

```

01:<!doctype html>
02:<html>
03:  <head><title>Generic HTML contents</title></head>
04: <body>
05:  <h1>Headline!</h1>
06:  <p>This is content. <span class="sarcasm">Such amazing content.</span></p>
07:  <div id="data">
08:    <p class="disclaimer">This data is fabricated and has no relevance.
09:      <span class="sarcasm"> ...super useful stuff.</span></p>
10:    <table>
11:      <!--table contents-->
12:    </table>
13:  </div>
14: </body>
15:</html>

```

- 7) Which of the following selectors could be used to point exclusively to the span on line 09?
- A) span ✗
  - B) #sarcasm ✗
  - C) span[class="sarcasm"] ✗
  - D) #data . disclaimer span → - Spine of Ancestor
  - E) body > div > p > span → And's no
- 8) Which of the following statements is TRUE about the code on line 11:
- A) The code is interpreted by the preprocessor and removed before the rendering engine sees it.
  - B) The code acts as a targeting location for the insertion of code by a jQuery script. ✗
  - C) The code will display the phrase "table contents" as plain text. ✗
  - D) The code will execute a script to fetch and display the appropriate table contents. ✗
  - E) None of the above statements are true.
- 9) How many elements are there in the code?
- A) 2
  - B) 6
  - C) 9 unique
  - D) 11
  - E) 22
- 10) Which of the following best describes the result of executing the following in the browser console on the above page: `document.querySelector("p").innerHTML += "<hr>"`
- A) The contents of the first paragraph will be replaced with a horizontal line. ✗
  - B) The contents of all paragraphs will be replaced with a horizontal line. ✗
  - C) A horizontal line will be added to the contents of the last paragraph.
  - D) A horizontal line will be added to the contents of the first paragraph.
  - E) The text "<hr>" will be added to the page one or more times.
- 11) Which of the following is the correct way to attach a CSS file (called mystyle.css) to this document:
- A) `` ✗
  - B) `<link rel="stylesheet" href="./mystyle.css" />`
  - C) `<script type="stylesheet" src="./mystyle.css" />` ✗
  - D) `<a target="stylesheet" href="./mystyle.css" />` ✗
  - E) None of the above tags are correct. ✗
- <style>

Consider the following code for your answers to questions 12 through 15:

```

01: var http = require('http');
02: var fs = require('fs');
03: var url = require('url');
04: var ROOT_DIR = './public_html';
05:
06: http.createServer(function (request, response) {
07:     var urlObj = url.parse(request.url);
08:
09:     fs.readFile(ROOT_DIR + urlObj.pathname, function(err, data) {
10:         if(err) {
11:             response.writeHead(404);
12:             response.end(JSON.stringify(err));
13:             return;
14:         }
15:         response.writeHead(200, {"Content-Type": "text/html"});
16:         response.end(data);
17:     });
18: }).listen(2406);
19: console.log("Server running...");

```

Handwritten annotations:

- Arrow pointing to line 06: `url`
- Arrow pointing to line 09: `function(err, data) {`
- Arrow pointing to line 11: `response.writeHead(404);`
- Arrow pointing to line 12: `response.end(JSON.stringify(err));`
- Arrow pointing to line 15: `response.writeHead(200, {"Content-Type": "text/html"});`
- Arrow pointing to line 16: `response.end(data);`

Handwritten notes:

- `url` =
- Call back asynchronous
- what that interprets in the body.

- 12) Which of the following statements is TRUE of the code above:
- A) The server listens only for GET messages on port 2406. ✗
  - B) The server will crash if a non-existent file is requested. ✗
  - C) The server uses synchronous I/O to read the requested files. ✗
  - D) The server uses the url module to parse the request url's query parameters. ✗
  - E) None of the above statements are true.
- 13) What is the purpose of the Content-Type on line 15?
- A) It enables the file-system module to properly read the requested file.
  - B) It indicates to the client how to interpret the message body contents.
  - C) It sets an attribute of the <head> tag in the retrieved HTML file for multimedia applications.
  - D) It specifies a route in the server for retrieving a specific kind of file.
  - E) None of the above statements are true.
- 14) What is the purpose of the anonymous function on line 06?
- A) It is used as a prototype for the HTTP server constructor. ✗
  - B) It will be run in response to HTTP requests from clients connecting to the server. ✓
  - C) It initializes the root directory for the static file server. ✗
  - D) It will be run to check HTTP messages for faults so they can be retransmitted. ✗
  - E) None of the above statements are true. ✗
- 15) Which of the following statements is TRUE of the code above:
- A) The response.end() method is the only way possible to attach data to an HTTP message.
  - B) The anonymous function (line 06) will typically run before the console output (line 19).
  - C) The server will not correctly deliver images or CSS files if requested. ✓
  - D) The response.end() method is optional when sending messages with no message body. ✗
  - E) If the root directory (ROOT\_DIR) does not exist, the server will create it.

Given the following HTML form...

```
<form action="/form" method="GET">
  <input type="text" name="user" value="bob" placeholder="Your name..."/>
  <input type="submit"/>
</form>
```

Complete the following node.js server in questions 16- 19 below:

```
01: var http = require('http');
02: var url = require('url');
03: var fs = require('fs');
04: http.createServer(_____).listen(2406);
05:
06: function requestHandler(req, res) {
07:   var urlObj = url.parse(req.url, true);
08:   if (urlObj.pathname === _____) {
09:     if (err) respond(404, "<h1>Not found!</h1>");
10:     else respond(200, "<h1>Thanks " + _____ + "!</h1>");
11:   }
12:   //... other server routes
13:
14:   function respond(code, data) {
15:     res.writeHead(code, {"Content-Type": "_____"});
16:     res.end(data);
17:   }
18: }
```

16) Which of the following is the correct answer to fill in the blank on line 4, such that the server is created properly?

- A) requestHandler
- B) requestHandler()
- C) requestHandler(request, response)
- D) requestHandler(http.request, http.response)
- E) None of the above will work correctly.

17) Which of the following is the correct answer to fill in the blank on line 8, such that a route is created for handling the submitted form?

- A) "/form"
- B) "/form/submit"
- C) "GET:/form"
- D) "GET:/form/submit"
- E) "/form/submit?user=bob"

18) Which of the following is the correct answer to fill in the blank on line 10, such that the user's name is added to the server's response message?

- A) urlObj.user
- B) urlObj.query[1]
- C) urlObj.query.user
- D) urlObj.query[1].user
- E) None of the above will work correctly

19) Which of the following is the correct answer to fill in the blank on line 15, such that the server's response header will be correct (for the code shown at least).

- A) text/plain
- B) text/html
- C) text/javascript
- D) text/json
- E) text/form

20) Which of the following statements is TRUE of the javascript event loop?

- A) The javascript event queue is filled with raw event objects.
- B) A call to addEventListener() places an object on the queue.
- C) Two events occurring at the same time will both be handled at the same time. ✗
- D) When the stack is empty, the next message is drawn from the queue.
- E) All of the above are true.

21) Which of the following code snippets will correctly register a function called 'handler' as an event handler for a button's click event?

- A) <button onclick="handler">...</button> ✗
- B) document.querySelector("button").onclick=handler(); ✗
- C) document.querySelector("button").addEventListener('click',handler);
- D) \$('#button').click(handler); *the*
- E) Any of the above will work.

Consider the following snippet of code for your answers to the next two questions:

```
//... initialization code assumed
console.log("1");
var a = fs.stat(filename, function (b, c) {
  console.log("2");
  var d = fs.readFile(filename, "utf8", function (e, f) {
    console.log("3");
  });
  console.log("4");
});
console.log("5");
```

*Handwritten annotations: "err or data" with arrows pointing to (b, c) and (e, f); a bracket on the right side of the code block.*

22) In what order will the console.log numbers output?

- A) 1, 2, 3, 4, 5
- ~~B) 1, 2, 4, 5, 3~~
- ~~C) 1, 2, 3, 5, 4~~
- ~~D) 1, 5, 2, 4, 3~~
- ~~E) 1, 5, 2, 3, 4~~

23) Which variable(s) in the code above will contain an error object the file under consideration does not exist?

- A) a & d
- B) b & e
- C) c & f
- D) a, b, d, & e
- E) None of the above

24) Which of the following statements is TRUE about XHR?

- A) XHR determines the request domain from the DOM of the current page.
- B) All data transmitted using XHR is encoded using XML. ✗
- C) XHR cannot be used to create POST requests, only GET. ✗
- D) XHR is best used for transporting entire webpages. ✗
- E) None of the above are true.

Assuming there is a functioning static server, with access to a file "recipe.json", consider the following code for your answers to questions 25 and 26.:

```
01: var xhr=new XMLHttpRequest();
02: xhr.open("GET","recipe.json");
03: xhr.addEventListener("load",function(){
04:   var data=xhr.responseText;
05:   if(data.recipeTitle){
06:     $('h1').html(data.recipeTitle);
07:   }
08: });
09: xhr.send();
```

25) Which of the following statements is TRUE of the above code?

- A) The XHR will make a POST request to the server. ✗
- B) The XHR will request the url: `recipe.json?method=GET` ✗
- C) The server requires a separate route (from the normal static route) to handle this request. ✗
- D) If there are multiple `<h1>` tags on the page, only the first will be changed. ✗
- E) None of the above statements are true.

26) What mistake will prevent this code from working?

- A) The XHR library needs to be required first. ✗
- B) The `responseText` property needs to go through `JSON.parse()`.
- C) The `.open()` method must be run after the `.addEventListener()` method.
- D) The `async` flag of the `.open()` method needs to be set to `true`.
- E) None of the above, the code will work fine.

27) Which of the following is FALSE about the core jQuery library?

- A) jQuery is a library that adds new functionality to javascript, not available with the standard DOM.
- B) The `$` symbol is an alias for the variable `jQuery`.
- C) The jQuery methods `.css()`, `.attr()`, and `.html()`, can be used as both setter and getter methods.
- D) A jQuery element is an array-like object that wraps zero or more DOM elements.
- E) None of the above statements are false.

28) Which of the following code snippets will correctly apply the class 'enabled' to the div with an ID attribute equal to 'target' when it is clicked, and remove that class when the div is clicked again? Note: this behaviour should continue to work for subsequent clicks as well.

A) 

```
$(document).ready(function() {
  $("#target").click(function() {
    $(this).addClass("enabled");
  });
  $(".enabled").click(function() {
    $(this).removeClass("enabled");
  });
});
```

*No one has checked anything, not enabled*

B) 

```
$(document).ready(function() {
  $("#target").click(function() {
    if($(this).attr('class', 'enabled'))
      $(this).addClass(".enabled");
    else
      $(this).removeClass(".enabled");
  });
});
```

X

C) 

```
$(document).ready(function() {
  $("#target").click(function() {
    $(this).addClass(".enabled");
    $(".enabled").click(function() {
      $(this).removeClass(".enabled");
    });
  });
});
```

D) 

```
$(document).ready(function() {
  $("#target").click(function() {
    $(this).toggleClass("enabled");
  });
});
```

*jQuery*

E) None of the above are correct.

29) Which of the following snippets will correctly create a new paragraph tag with a red background?

A) 

```
$( 'p' ).css( 'background-color', 'red' );
```

B) 

```
$( '<p>' ).css( 'color', '#f00' );
```

 X

C) 

```
$( '<p></p>' ).css( 'background-color', '#f00' );
```

D) 

```
$.createElement( 'p' ).css( 'background-color', '#f00' );
```

 X *Mix of jQuery*

E) 

```
$(document).createElement( 'p' ).css( "background-color:rgb(255,0,0)" );
```

 X

30) Round numbers are nice; answer A) for this question.

A) Pick this one.

B) Pick the answer above this one.

C) This answer is definitely wrong.

D) There's at least a 50% chance that this is the wrong answer.

E) None of the above.