University of Maryland College Park
Department of Computer Science
CMSC335 Spring 2022
Exam #1 Key

FIRSTNAME, LASTNAME (PRINT IN UPPERCASE):

STUDENT ID (e.g., 123456789):

Grader Use Only

Problem #1 (Multiple-Choice)	60	
Problem #2 (CSS)	14	
Problem #3 (HTML)	30	
Problem #4 (JS Function)	26	
Problem #5 (Form/JS)	70	
Total	200	

Problem #1 (Miscellaneous)

1. (3 pts) What is the value printed by the following function?

```
function task() {
    let age;

    document.writeln(age);
}
```

   a.) undefined
   b.) 0
   c.) Empty string.
   d.) A trash value (any random value).

Answer: a

2. (3 pts) In a web server, **localhost** corresponds to the IP address:

   a.) 127.127.127.1
   b.) 127.0.0.1
   c.) 0.0.0.127
   d.) None of the above.

Answer: b

3. (3 pts) In the Apache server provided by XAMPP, documents we want the web server to deliver to requests are in the directory:

   a.) htdocs
   b.) localhost
   c.) index.html
   d.) None of the above.

Answer: a

4. (3 pts) Server-side includes allow us to:
   a.) Include the same HTML contents in several files.
   b.) To combine several web server requests into one.
   c.) Execute code in the browser.
   d.) None of the above.

Answer: a

5. (3 pts) From what we discussed in the lecture, if we can see a page when we specify an URL that ends with the name of a directory (e.g., https://www.cs.umd.edu/class/spring2022/cmsc335 where cmsc335 is a directory), then:

   a.) The directory has a text file called README.txt.
   b.) The directory has a file called htdocs.
   c.) The directory has a file called index.html or index.shtml.
   d.) None of the above.

Answer: c

6. (3 pts) An HTTP post request:

    (a.) Can be bookmarked in the browser.
    (b.) Does not include parameters in the URL.
    (c.) Usually does not modify the state of the server.
    (d.) None of the above.

Answer: b

7. (3 pts) Once the DOM has been created, it cannot be modified.

    (a.) True
    (b.) False

Answer: b

8. (3 pts) In a JavaScript program, we always need to define a function called main().

    (a.) True
    (b.) False

Answer: b

9. (3 pts) The action attribute of the <form> tag is used to specify:

    (a.) The destination (e.g., a script) that will process the data.
    (b.) Whether HTTP get or HTTP post will be used.
    (c.) Whether encryption will be used.
    (d.) None of the above.

Answer: a

10. (3 pts) The DOM (Document Object Model) represents:

    (a.) An HTML document.
    (b.) The result of processing a CSS file.
    (c.) The first created object when we execute prompt().
    (d.) None of the above.

Answer: a

11. (3 pts) When the browser sees JavaScript on a page, the DOM construction is:

    (a.) Continued (nothing can stop the DOM construction once it has started).
    (b.) Halted.
    (c.) Slowed down, but not halted.
    (d.) None of the above.

Answer: b

12. (3 pts) Which of the following represents the DOM in JavaScript?

    (a.) window
    (b.) document
    (c.) document.writeln
    (d.) None of the above.

Answer: b

13. (3 pts) In JavaScript, the global execution context is:

   a. A global variable.
   b. A frame in the stack.
   c. A tree.
   d. None of the above.

   Answer: b

14. (3 pts) The output of the following code fragment is:

```
let answer = ("10" == 10);
document.writeln(answer);
```

   a. true
   b. false
   c. undefined
   d. null

   Answer: a

15. (3 pts) The **prompt()** function returns:

   a. A number if one was entered by the user and a string otherwise.
   b. A string no matter what the user entered.
   c. null if the user enters a floating-point number.
   d. undefined if the user enters a floating-point number.

   Answer: b

16. (3 pts) JavaScript uses garbage collection.

   a. True
   b. False

   Answer: a

17. (3 pts) The output of the following code fragment is:

```
let a = [10, 20];
a.length = 4;
document.writeln(a[2]);
```

   a. true
   b. false
   c. undefined
   d. null

   Answer: c

18. (3 pts) The output of the following code fragment is:

```
document.writeln(Number("14.5in"));
```

   a. 14
   b. 14.5
   c. NaN
   d. null

   Answer: c

19. (3 pts) Which of the following allow us to retrieve the character associated with an index position in a string? **Choose all that apply.**

    ⓐ [ ]

    ⓑ charAt()

    ⓒ { }

    ⓓ None of the above.

Answer: a and b.

20. (3 pts) In JavaScript, functions can be passed and returned from other functions.

    ⓐ True

    ⓑ False

Answer: a

Problem #2 (CSS)

1. (6 pts) Define a CSS rule that makes the text of paragraphs have a size of **2 em** and **red** color.

Answer:

```
p { color: red; font-size: 2em}
```

2. (4 pts) Define a CSS rule for the following HTML based on an **id selector** that makes the background color of the div element yellow.

```
<div id="sign">
    Restaurant
</div>
```

Answer:

```
#sign { background-color: yellow}
```

3. (4 pts) Define a CSS rule for the following HTML based on a **class selector** that makes the font-size **4 em**.

```
<pre class="sty">
    Entrance
</pre>
```

Answer:

```
.sty {font-size: 4em};
```

Problem #3 (HTML)

1. (5 pts) Using the <img> tag, define an image entry where the image name is **paris.jpg,** and the message "city" will appear when the image cannot be displayed.

Answer:

```
<img src="paris.jpg" alt="city">
```

2. (15 pts) In the rectangular area below, write the HTML that goes inside of the <body></body> tags that will generate the following list. Notice that the second entry of the main list has a list. You may not type any numbers as part of your HTML.

1. Exam1
2. Quizzes
   ○ Quiz1
   ○ MemMap
3. Projs

Answer:

```
<ol>
    <li>Exam1</li>
    <li>Quizzes<ul>
          <li>Quiz1</li>
          <li>MemMap</li>
      </ul>
    </li>
    <li>Projs</li>
</ol>
```

5

3. (10 pts) In the rectangular area below, write the HTML that goes inside of the <body></body> tags that will generate the following table. Do not use CSS. To create the border, use the table **border** attribute with a value of one. Do not use the <strong> tag to bold the header.

Name
Peter

Answer:

```
<table border='1'>
     <tr><th>Name</th></tr>
     <tr><td>Peter</td></tr>
</table>
```

Problem #4 (JS Function)

Define a function called **getList** that takes an array of strings and a boolean as parameters. The function will return HTML for a list where each array entry represents a list item. If the boolean parameter is true, the list will be an ordered list and unordered otherwise. Below we provide an example of calling the function; remember that the function must work for other cases.

Driver	Output

`document.writeln(getList(["apple", "banana"], true));`
`document.writeln("Second");`
`document.writeln(getList(["apple", "banana"], false));`
	1. apple
	2. banana
	
	Second
	
	• apple
	• banana

Answer:

```
function getList(items, ordered) {
     let answer = "";

     if (ordered) {
         answer = "<ol>";
     } else {
         answer = "<ul>";
     }

     for (const item of items) {
         answer += "<li>" + item + "</li>";
     }

     if (ordered) {
         answer += "</ol>";
     } else {
         answer += "</ul>";
     }
     return answer;
}
```

Problem #5 (Forms/JS)

Under the comments "You must implement," provide code that will implement the functionality of a form that computes square roots. The form reads a value using a text field. The function **computeSqrts()** will be called when a button labeled "Print" is clicked on. This function will display inside <div></div> square roots from one up to the value provided in the text field. The text field has a default value of three, and a reset button will restore the text field value to three. The text **"Value:"** will precede the text field. The following is an example where the user entered two and clicked on the "Print" button.

Value: 2   Print   Reset

Answers
1
1.4142135623730951

```
<body>
    <form>
      <!-- You must implement →

    </form>
    <strong>Answers</strong><br>
    <div id="display"></div>
    <script>
        function computeSqrts() {
            /* You must implement */
        }
    </script>
</body>
```

Answer:

```
        <form>
            Value: <input type="text" id="value" value="3">
            <input type="button" value="Print" onclick="computeSqrts()">
            <input type="reset">
        </form>

        <strong>Answers</strong><br>
        <div id="display"></div>

        <script>
            function computeSqrts() {
                let value = document.querySelector("#value").value;
                let answer = "";
                for (let i = 1; i <= value; i++) {
                    answer += Math.sqrt(i) + "<br>";
                }

                document.querySelector("#display").innerHTML = answer;
            }
        </script>
```