

CSI 3540 – Web Structures, Techniques and Standards

2020 Midterm Review

80 minutes; No help allowed

Student Name & Number: _____

QUESTION I: HTML5 [40 points]

Consider the following HTML.

```
<!DOCTYPE html>

<!-- Site registration form. -->
<html>
  <head>
    <meta charset="utf-8">
    <title>Site Registration Form</title>
  </head>

  <body>
    <h1>Site Registration Form</h1>
    <p>Please complete the following form to register for our site</p>

    <form method = "post">
      <p><label>First Name:
        <input type="text" id="firstName"
          placeholder = "First name"> (First name)
        </label></p>
      <p><label>Last Name:
        <input type="text" id="lastName"
          placeholder = "Last name"> (Last name)
        </label></p>
      <p><label>Email:
        <input type="email" id="email"
          placeholder = "name@domain.com"> (name@domain.com)
        </label></p>
      <details>
        <summary>Please fill out our optional survey:</summary>
        <p>What year are you in college?</p>
        <label><input name = "collegyear" type = "radio"
          value = "precollege"> Not yet in college</label>
        <label><input name = "collegyear" type = "radio"
          value = "freshman"> Freshman</label>
        <label><input name = "collegyear" type = "radio"
          value = "sophomore"> Sophomore</label>
        <label><input name = "collegyear" type = "radio"
```

```

        value = "junior"> Junior</label>
<label><input name = "collegeyear" type = "radio"
        value = "senior"> Senior</label>
<label><input name = "collegeyear" type = "radio"
        value = "graduate"> Graduate</label>
</details>
<p><input type = "submit" value = "Submit">
    <input type = "reset" value = "Clear"></p>
</form>
</body>
</html>

```

1. [10 points] Say in a few sentences what this code does (Keep it brief).

Write an HTML5 element (or elements) to accomplish the following tasks, and specify where these elements should be inserted:

2. [10 points] Customers rate the quality of the site on a scale of 1 to 10 (10 will be displayed by default).

```

<input type="range" min="1" max="10" placeholder="10" step="1">

```

3. [20 points] Create a **text input** element for a title to choose from the following list: Professor, Doctoral Student, Master's Student, and Bachelor's Student (Use the appropriate HTML element for this choice). The element should automatically receive attention (focus) when the form is displayed.

```

<label> Choose which degree:
<input type="text" list="degrees" autofocus>
</label>
<datalist id="degrees">
<option value="Prof"> Professor</option>
<option value="Prof"> Professor</option>
<option value="Prof"> Professor</option>
<option value="Prof"> Professor</option>
</datalist>

```

QUESTION II: CSS [30 points]

A. [15 points] Explain lines 2 through 8 of the CSS code below.

```
1 <style type="text/css">
2 body { font-family: arial, helvetica, sans-serif; }    if one font is not available it chooses the next
3 a.nodect { text-decoration: none; }    class nodect when using <a> link tag will have no underline or text-decoration
4 a:hover { text-decoration: underline; }    when links are hovered (all links on page with <a> tag, they get and underline
5 li em { font-weight: bold; }    when you have a list element with em --> italics, it will be bolded
6 h1, em { text-decoration: underline; }    unordered lists will have a margin of 20px
7 ul { margin-left: 20px; }
8 UL UL { font-size: .8em; }    when you have an unordered list embedded within an unordered list it will have a
9 </style>    font size of 8em (compared to page's text)
```

C. [15 points] Create a style sheet containing a style rule for the **div** element with a width and height of 200px, padding and margin of 8px, and a solid double border of 6px. The background *of* this *div* must contain a diagonal linear gradient using the following colors: red, orange, green (Ignore seller prefixes). Put this style sheet in a small html document whose *body element* contains the phrase "Here's my beautiful gradient!" underlined in bold.

```
<!DOCTYPE html>
<head>
<meta charset="utf-8">
<title>Title</title>
</head>
<body>
<style>
div {
width: 200px;
height: 200px;
padding: 8px;
margin: 8px;
border-style: double;
border-width: 6px;
background: linear-gradient(to bottom right, red, orange, green);
}
</style>
<div><p>Here is my beautiful gradient</p></div>
</body>
</html>
```





QUESTION III: JavaScript [30 points]

A. [15 points] This question consists of 3 sub-questions, each of which is a multiple-choice question. Check the correct answer.

1. Which of the following JavaScript statements is correct?

- a) `If (studentGrade >= 60)`
 `document.writeln("Passed");`
- b) `if (studentGrade >= 60);`
 `document.writeln("Passed");`
- c) `if (studentGrade >= 60)`
 `document.write("Passed");`
- d) `If (studentGrade >= 60);`
 `document.write("Passed");`

2. Which of the following statements is made correctly and will not result in an error, assuming that $x = 2$ and $y = 30$?

- a) `for (var j = 10; j <= 80; j--)` — 
- b) `for (var j = x, j <= y, j += 6)` 
- c) `for (var j = x; j <= 80 * y; j += 6 / x)` ✓ 
- d) `for (var j = x; j <= 80 * y; j -= 6)` 

4. What does the following instruction do?

`Math.floor(Math.random() * 12);`

- a) It creates a random number between 0 and 12, including 12.
- b) It creates a random number between 0 and 12, but does not include 12.
- c) It creates a random number between 1 and 12, including 12.
- d) It creates a random number between 1 and 12, but does not include 12.

`Math.floor(Math.random() * 13);`



B. [5 points] Write a **recursive** function in JavaScript named `power (base, exponent)` that, when called, calculates and returns `baseexponent`. Assume that `exponent` is an integer greater than or equal to zero (0) and that the basis is not zero (0). Your recursive function must be self-contained, that is, it must not use any global variables or externally declared functions. What is the result of the following code?

```
function power(base, exponent) {  
  if (exponent == 0) {  
    return 1;  
  } else {  
    return base * power(base, exponent-1);  
  }  
}
```

C. [10 points] Give a JavaScript code that creates a **three-dimensional array** in which row 0 has 5 columns, row 1 has 6 columns, and row 2 has 4 columns. Use the new method .

```
Array arr = new Array();  
arr.push(new Array());  
arr.push(new Array());  
arr.push(new Array());  
arr[0][0].push(new Array(5));  
arr[0][1].push(new Array(6));  
arr[0][2].push(new Array(2));
```