

ECE 413/513 – Fall 2018

Exam 1

Friday, September 21, 2018

Name: _____

No booklets, additional paper, textbooks, or other materials may be referenced during this examination with the exception of one 8.5"x11" sheet of paper (front and back). Your only other resources are a pen/pencil, eraser, and this exam.

Submit answers only in space indicated on each page.

1. Multiple Choice Questions (2 points each)

(1.1) Which is the correct way to an HTML documents character set is UTF-8?

- (a) `<html charset="UTF-8">`
- (b) `<meta>charset="UTF-8"</meta>`
- (c) `<html meta="UTF-8">`
- (d) `<meta charset="UTF-8">`
- (e) None of the above

(1.2) Which of the following is not an HTML container?

- (a) `<div>`
- (b) `<form>`
- (c) `<section>`
- (d) `<h1>`
- (e) All are HTML containers

(1.3) Which of the following will cause a link to be open in a new tab or window?

- (a) `<a href="http://www.ece.arizona.edu" window="_new">This is a link</a>`
- (b) `<a href="http://www.ece.arizona.edu" target="_new">This is a link</a>`
- (c) `<a href="http://www.ece.arizona.edu" target="_self">This is a link</a>`
- (d) `<a href="http://www.ece.arizona.edu" target = "_blank">This is a link</a>`
- (e) None of the above

(1.4) Which CSS selector selects all `<h1>` and `<h2>` elements?

- (a) `h1 h2`
- (b) `h1 + h2`
- (c) `h1, h2`
- (d) `h*`
- (e) None of the above

(1.5) Which selector rule correctly sets the text color to blue for any `<li>` tags that is a descendant of a `<form>` tag.

- (a) `li form { color: blue; }`
- (b) `li > form { text-color: blue; }`
- (c) `form.li { text-color: blue; }`
- (d) `.li { color: blue; }`
- (e) None of the above

(1.6) What is the final type and value of the variable `finalResult`?

HTML:

```
<input type="text" id="userInput" value="1.2"></input>
```

JavaScript:

```
var finalResult = document.getElementById("userInput").value;  
finalResult = 1 + finalResult;  
finalResult *= 2.0;
```

- (a) Type: Number, Value: 4.4.
- (b) Type: Number, Value: 22.4.
- (c) Type: String, Value: "4.4"
- (d) Type: None, Value: \$NaN
- (e) None of the above

(1.7) What will be output to the console by the following JavaScript code?

```
var book = {  
  title: "Hunt for Red October",  
  author: "Tom Clancy",  
  year: 1984,  
  pages: 387  
};  
  
for (var i in book) {  
  bookDetails += i + " ";  
}  
  
console.log(bookDetails);
```

- (a) title author year pages
- (b) title:"Hunt for Red October" author:"Tom Clancy" year:"1984" pages:"387"
- (c) "Hunt for Red October" "Tom Clancy" "1984" "387"
- (d) Hunt for Red October Tom Clancy 1984 387
- (e) Nothing

(1.8) Which of the following assigns numDivs with the number of <div> elements in a web page?

- (a) numDivs = document.getElementsByTagName("div").length;
- (b) numDivs = document.getElementsByTagName("div").size;
- (c) numDivs = document.getElementsByTag("div").length;
- (d) numDivs = document.getElementsByTag("div").size;
- (e) None of the above

(1.9) What is the resulting URL if a user enters 10.0 as the shipping weight, 405 as the shipping distance, and clicks submit on the following form?

```
<form action="https://shipping.io">  
  <label for="weight">Shipping Weight:</label>  
  <input type="text" name="shipWeight" id="weight">  
  <label for="distance">Shipping Distance:</label>  
  <input type="text" name="distMiles" id="distance">  
  <input type="submit">  
</form>
```

- (a) https://shipping.io/&weight=10.0?distance=405
- (b) https://shipping.io/?shipWeight=10.0&distMiles=405
- (c) https://shipping.io?weight=10.0&distance=405
- (d) https://shipping.io?shipWeight=10.0&distMiles=405
- (e) None of the above

(1.10) Which of the following strings will match the regular expression below? (*Choose all that apply.*)

```
/^\w\w*-\d\d?/
```

- (a) xy-33a
- (b) 1af-33a
- (c) .get-1
- (d) a-1
- (e) None of the above

2. Short Answer Questions (2.5 points each)

- (2.1) Create a paragraph with the following contents using an appropriate tag for the title and emphasizing the total dollar amount.

The highest grossing film in 2017 was Beauty and the Beast with \$1.26 billion.

- (2.2) Write a CSS rule that uses 10pt Arial font for all <p> elements with class Copyright.

- (2.3) Write a single JavaScript statement to not display the element with ID userInput.

- (2.4) Given the array mpgHistory, write JavaScript code that assigns avgMpg with the average value of the array elements.

```
var mpgHistory = [ 33.2, 24.5, 27.4, 19.0 ];  
var avgMpg = 0.0;
```

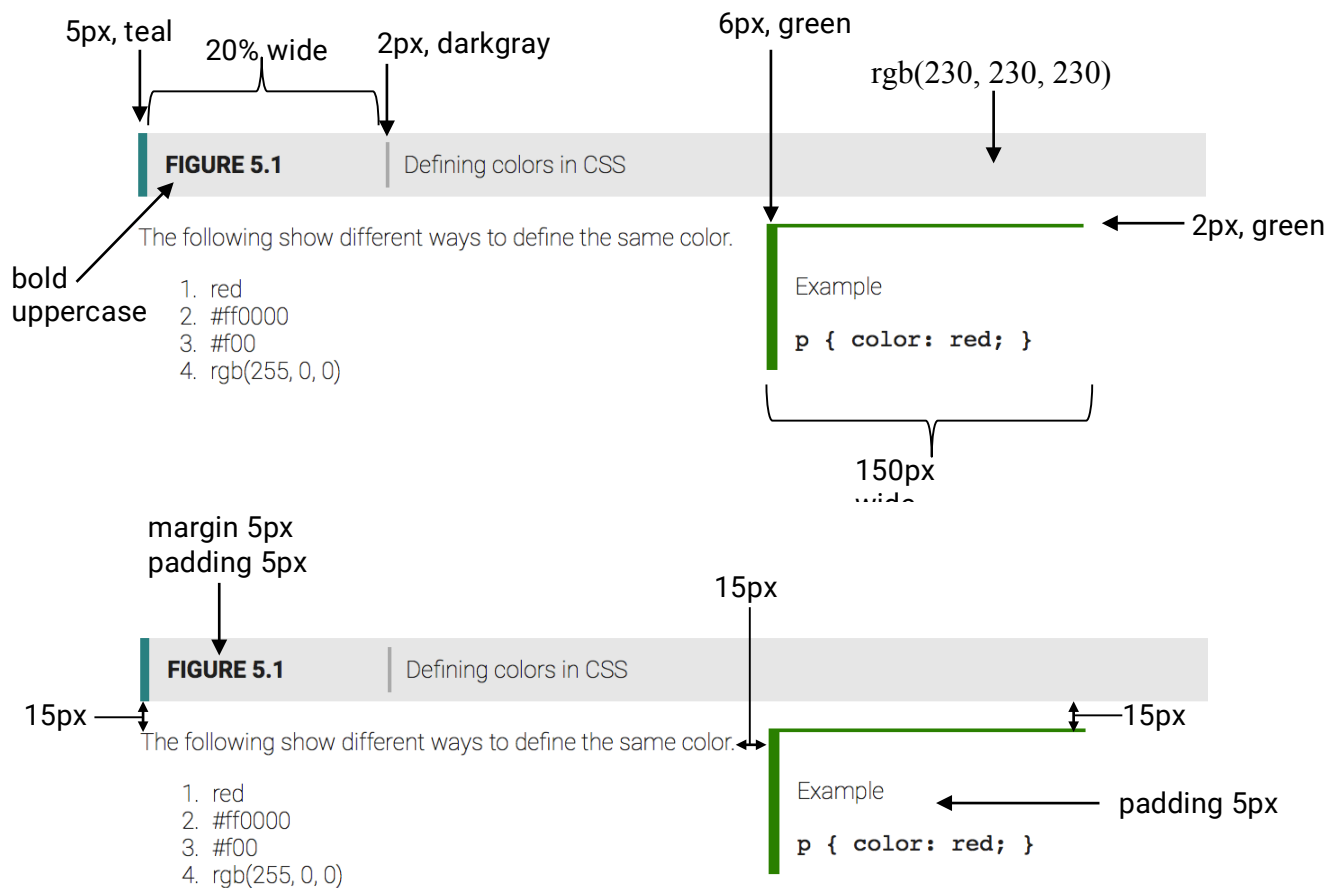
3. CSS and Box Model (10 points)

Given the HTML below, complete the CSS to match the provided wireframe, which shows the rendered web page with annotations for the required styling.

HTML:

```
<div class="Figure">
  <div class="Header">
    <div class="Label">Figure 5.1</div>
    <div class="Title">Defining colors in CSS</div>
  </div>
  <div class="Contents">
    <p>The following shows different ways to define the same color.</p>
    <ol>
      <li>red</li>
      <li>#ff0000</li>
      <li>#f00</li>
      <li>rgb(255, 0, 0)</li>
    </ol>
  </div>
  <aside>
    <p>Example</p>
    <code>p {
      color: red;
    }</code>
  </aside>
</div>
```

All fonts are Roboto, 10pt, and lighter weight by default.



CSS:

```
.Figure {
```

```
.Title {
```

```
}
```

```
}
```

```
.Contents {
```

```
.Header {
```

```
}
```

```
p {
```

```
}
```

```
.Label {
```

```
}
```

```
aside {
```

```
}
```

```
}
```

4. JavaScript updating the DOM (10 points total)

```
<div class="Calculator">
  <div>
    <label for="inputA">A</label>
    <input type="text" id="inputA" name="inputA" value="2">
    <label for="inputB">B</label>
    <input type="text" id="inputB" name="inputB" value="3">
  </div>
  <div>
    <label for="integerCalc">Integer</label>
    <input type="radio" name="calcType" value="integer" id="integerCalc" checked>
    <label for="floatCalc">Floating Point</label>
    <input type="radio" name="calcType" value="float" id="floatCalc">
  </div>
  <div id="calcOutput"></div>
</div>
```

(4.1) (4 points) Given the HTML above, write the JavaScript that on document load will register a change event listener for all `<input>` elements that calls the function `addNumbers()`.

(4.2) (6 points) Write the `addNumbers()` function to add the two user-entered values and display the result in the `calcResult`. If the “Integer” option is selected, the inputs should be parsed as integers and result should be displayed as an integer. If the “Floating point” option is selected, the inputs should be parsed as floating point numbers, and the result should be displayed as a floating point value with 4 digits to the right of the decimal point. Ex: 2.5012.