**1)** Circle the correct answer for each multiple-choice question below.  There are 10 multiple-choice questions and each is worth one mark.  This question is scored out of 10.

The Internet is a global network that:
(a) uses the Transmission Control Protocol/Internet Protocol
(b) has both wired and wireless components
(c) uses hardware including switches and routers
(d) all of the above

The World Wide Web:
(a) was created by Tim Berners-Lee and Stephen Hawking
(b) was inspired by a trip to an insectarium
(c) often uses the HyperText Transfer Protocol
(d) none of the above

IP addresses are of the form A.B.C.D where:
(a) A is typically a regional designation
(b) D represents an Internet Service Provider
(c) B and C are countries and cities
(d) A, B, C & D are all random numbers

Which of the following is not true about DNS and IP addresses?
(a) a DNS server translates domain names into IP addresses
(b) there are 13 root DNS servers worldwide
(c) IP addresses are assigned to machines
(d) each domain name has one IP address and vice-versa

Which of the following is not true about HTML?
(a) Semantic HTML recommends separating HTML, CSS and JavaScript
(b) The acronym stands for HyperText Modelling Lexicon
(c) Metadata defines properties such as the author
(d) There are currently two competing HTML5 recommendations/standards

Cascading Style Sheets define style and appearance using:

(a) functions with parameters and return values

(b) rules with selectors, properties and their values

(c) techniques with block and inline elements

(d) heuristics with rules and maps

Responsive design:

(a) adapts a website to the width of the browser or device

(b) requires CSS3 @media queries

(c) is a replacement for browser sniffing

(d) all of the above

JavaScript is a programming language that:

(a) is not strict about variable type and declaration

(b) is a web-specific version of Java

(c) only supports user-generated event handling (*e.g.*, clicking)

(d) is executed on the server

Best practices for JavaScript include:

(a) embedding JavaScript implicitly rather than explicitly

(b) registering event handlers outside of HTML tags

(c) declaring all variables

(d) all of the above

JavaScript's features and/or quirks include:

(a) types for both single Characters and Strings

(b) a single Number type representing both integers and decimals

(c) no `for` loops, only `while` loops

(d) accessing elements via Document Organization Management

**2)** Examine the HTML source shown below.

```
<!DOCTYPE html5>
<html>

<head>
    <titles>Vitamin BBC</titles>
    <titles>The best of British television</titles>
    <link rel="stylesheet" href="./css/VitaminBBC.css"/>
    <script href="./js/VitaminBBC.js"></script>
</head>

<body>
    <header>
        <img src=".\VitaminBBC.png" id="siteLogo"></img>
    </header>

    <nav> <ul>
        <li><a href="./costumedramas.html">Costume Dramas</a>
            <ul><li><a href="./austen.html">Jane Austen</a></li>
            <li><a href="./brontes.html">The Brontes</a></ul></li>
        <li><a href="./mysteries.html">Mysteries</a></li>
    </ol> </nav>

    <article>
        <p class="disclaimer'>DISCLAIMER: These shows may contain mature
subject matter - viewer discretion is advised.</p>
        <p id="welcome">Welcome! British television is amazing.</p>
    </article>

    <aside>
        <h1>About</h1>
            <p id="welcome">Vitamin BBC is the antidote to mundane
television.  <a link="http://www.bbc.co.uk">Click here to visit the
BBC's website</p>, which has complete show listings.</p>
    </aside>

    <foot>
        &copy; 2014 (CISC 282)
    </foot>
</body>

</html>
```

This source is riddled with errors.  Circle all of the errors you can find.  You can also add a few words to describe an error, but that is not necessary.  There are 12 errors and each errors is worth one mark.  This question is scored out of 10; a maximum of 12 will be awarded.

**3)** Examine the CSS rules and and HTML source shown below.

| CSS | HTML |
|---|---|
| ```css
body {
    color: white;
    background-color: blue;
}
.important {
    color: yellow;
    font-style: italic;
}
.highlight {
    color: gray;
}
#vital {
    color: yellow;
    font-weight: bold;
}
ul li, ol li {
    color: white;
    background-color: red;
}
body ol > li {
    background-color: purple;
}
``` | ```html
<body>
    <p>Paragraph 1</p>

    <ul>
        <li class="important"
            id="vital">Item 1</li>
        <li>Item 2</li>
    </ul>

    <p class="important highlight">
        Paragraph 2
    </p>

    <ol>
        <li class="highlight">
            Item 3</li>
    </ol>
</body>
``` |

Check the entries for the values that are applied to the given pieces of text in the table below.  Leave blank entries for values that are not applied.  This question is scored out of 13.

| | color | | | background-color | | | font-style | font-weight |
|---|---|---|---|---|---|---|---|---|
| | white | yellow | gray | blue | red | purple | italic | bold |
| Paragraph 1 | X | | | X | | | | |
| Paragraph 2 | | | X | X | | | X | |
| Item 1 | | X | | | X | | X | X |
| Item 2 | X | | | | X | | | |
| Item 3 | | | X | | | X | | |

**4)** Examine the following small JavaScript programs.  Determine the values of all the variables at the end of each script's execution.  Use quotation marks around values to denote Strings.  There are 11 variables and each variable is worth one mark.  This question is scored out of 10; a maximum of 11 will be awarded.

```javascript
var x = 1;
var y = 0;
var z = "";

if (x) {
    x = "Truthy";
}

if (y) {
    y = "Also truthy";
}
else if (! z) {
    z = "Falsey";
}
```

x: _____"Truthy"_____

y: _____0_____

z: _____"Falsey"_____

```javascript
var a = 82;
var b = "82";
var c;
var d;

if (a == b) {
    c = (a === b);
}

b = a + 2 + b;
a = 5 + (5 * 4)
```

a: _____25_____

b: _____"8482"_____

c: _____false_____

d: _____undefined_____

```
var anArray = new Array("Hi");
anArray[2] = 5;

function doSomething()
{
    anArray[0] = "Hello";
    m = anArray[2];
}
doSomething();
m /= 2;
```

anArray[0]: _____"Hello"_____

anArray[1]: _____undefined_____

anArray[2]: _____5_____

m: _____2.5_____

**4)** The following is a series of requirements for a single web page:
- paragraphs:
  - must have a light grey background
  - must have 10px of padding on all sides
  - must clear each other (*i.e.*, must not wrap around each other's floating elements)
- the first paragraph:
  - must have an id of "introduction"
  - must be given a darker grey background if the mouse moves over it
- images inside paragraphs:
  - must have one of two possible classes: `wrapLeft` (which floats an image left) and `wrapRight` (which floats an image right)
  - must have a maximum width of 50% of the containing paragraph

Fill in the blanks for the HTML source, as well as write the CSS rules and JavaScript event handlers that meet these requirements, as well as the following:
- Your CSS rules must use the box model for layout, not tables or any other approach
- You may not use `:hover` for the mouse-over functionality; you must use JavaScript instead
- You can not attach JavaScript event handlers in the HTML

If you require more space than is provided, feel free to write on the back of the last page. This question is scored out of 12.

**HTML (2)**

```
!DOCTYPE html>
<html>

<head>
    <title>Midterm Question #5</title>
    <link rel="stylesheet" href="./css/midterm.css"/>
    <script src="./js/midterm.js"></script>
</head>

<body>
    <p id="introduction"><img src="./images/midterm1.png"

class="wrapLeft"> This is sample text in the first paragraph.</p>

    <p><img src="./images/midterm1.png" class="wrapRight"/> This is

sample text in the second paragraph.</p>

</body>

</html>
```

**CSS (4)**

```css
p {
    background-color: #ddd;
    padding: 10px;
    clear: both; OR overflow: hidden;
}

p img {
    max-width: 50%;
}

p img.wrapLeft {
    float: left;
}

p img.wrapRight {
    float: right;
}
```

**JavaScript (6)**

```javascript
function highlightIntroduction() {
    var introductionElement = document.getElementById("introduction");
    introductionElement.style.backgroundColor = "#999";
}

function attachHandlers() {
    var introductionElement = document.getElementById("introduction");
    introductionElement.onmouseover = highlightIntroduction;
}

window.onload = attachHandlers;
```