This is an open-book, open-notes exam.

All answers should be written in your exam booklet(s). Start with the questions that you know how to do, and try not to spend too long on any one question. Partial credit will be granted where appropriate if you show your work. You will have two hours and twenty minutes. Good luck!

1. Cascading Style Sheets (18 points)

Consider the following fragment of HTML:

```
<body>
<h1 id="resolutions">Resolutions</h1>
<ol>
<li class="first">Always do good.</li>
<li class="second">Never do evil.</li>
</ol>
<div id="listTwo">
<h1 id="goals">Goals</h1>
<ol>
<li class="first">Learn one new thing every day.</li>
<li class="second">Make a new friend.</li>
<li class="third">Eat some chocolate.
<ol>
<li>It's good for the soul.</li>
<li>It tastes delicious.</li>
</ol></li>
</ol></div>
</body>
```

a). Write a single CSS rule that would make all the text use a sans-serif font (for example, Arial or Helvetica) on any computer.
   body { font-family: Arial, Helvetica, Sans-Serif; }

b.) Write a single CSS rule that would make the sublist use lowercase letters for its labels.
   ol ol { list-style-type: lower-alpha; }

c.) Write a single CSS rule that would make the first item in each section bold.
   .first { font-weight: bold; }

d.) Write a single CSS rule that would underline the word **Goals**.
   #goals { text-decoration: underline; }

e.) Rewrite the line containing the word **chocolate** so that the word appears in brown.
   Eat some chocolate.

f.) Write a single CSS rule that would make the goals list appear to the right of the resolutions list, instead of below it.

#listTwo { position: absolute; left: 50%; top: 0px; }

2. Document Object Model (15 points)

Consider the following fragment of HTML. For each question, you should give an expression that represents the desired value within the document object model.

```
<body id="body">
<img id="logo" src="logo.png" height="100" width="400" />
<h1 id="welcome" style="font-variant: small-caps">Welcome</h1>
<p id="para1">We're glad you're here.</p>
</body>
```

Example: The width of the logo image.
document.getElementById("logo").width

a.) The URL or name of the file where the image logo is stored.
document.getElementById("logo").width

b.) The font-variant of the heading.
document.getElementById("welcome").style.fontVariant

c.) The background color of the page.
document.getElementById("body").backgroundColor

d.) The width of the border around the logo image.
document.getElementById("logo").style.borderWidth

e.) The text within the paragraph tag.
document.getElementById("para1").innerHTML

3. Dynamic HTML (15 points)

Consider the following fragment of HTML. For each question, you should identify the event trigger (or triggers) that would be used to achieve the desired effect, and which tag they should be put in. *You do not need to write any scripts; only identify the event trigger and tag.*

```
<body>
<h1 id="order">Order Form</h1>
<form id="form" method="post" action="process.php">
<label for="item">Please enter your item number here:</label>
<input id="item" type="text" value="Stock no." /><br />
<p id="message">No item currently selected.</p>
```

```
<button id="stock" type="button">Check availability</button>
<button id="ready" type="submit">Ready to order!</button>
</form>
</body>
```

a.) Whenever the mouse is over the submit button, the text on the button should appear bold.
   onMouseOver & onMouseOut applied to second button tag

b.) When the user tries to submit the form, the page should check to see that a valid part number has been entered, and prevent submission if necessary.
   onSubmit applied to form tag

c.) When the user enters anything in the text box, the page should check whether it represents a valid part number and change the message text accordingly.
   onChange applied to input tag

d.) Once the page has loaded, it should immediately check to see whether there are any saved part numbers stored in cookies, and change the current part number entry if so.
   onLoad applied to body tag

e.) Pressing the **Check availability** button should cause an alert box to pop up showing the number of parts of the specified type currently in stock.
   onClick applied to first button tag

4. Functions (16 points)

Consider the following scripts:

```
function makeLeftImageWide() {
   document.getElementById("left").width = 200;
}
function makeLeftImageNarrow() {
   document.getElementById("left").width = 50;
}
function makeRightImageWide() {
   document.getElementById("right").width = 200;
}
function makeRightImageNarrow() {
   document.getElementById("right").width = 50;
}
```

a.) Rewrite these as two functions called makeImageWide and makeImageNarrow that can be applied to any image. (Hint: your new functions will take one argument each.)
```
function makeImageWide(img) {
   document.getElementById(img).width = 200;
}
function makeImageNarrow(img) {
   document.getElementById(img).width = 50;
```

```
    }
```

b.) Rewrite the original four as two functions called `changeLeftWidth` and `changeRightWidth` that can change their respective images to any size desired.

```
    function changeLeftWidth (w) {
        document.getElementById("left").width = w;
    }
    function changeRightWidth (w) {
        document.getElementById("right").width = w;
    }
```

c.) Rewrite the original four as a single function called `changeImageWidth` that can be applied to any image and change it to any desired size.
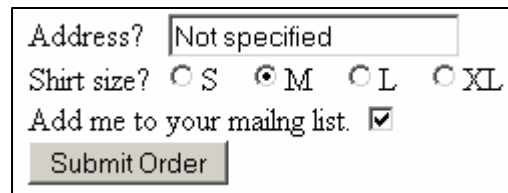
```
    function changeImageWidth (img,w) {
        document.getElementById(img).width = w;
    }
```

5. Forms (18 points)

Suppose that the form shown below generates the following url string when submitted using the default values (as shown in the diagram):

http://www.tshirts.biz/orders?address=Not+specified&size=M&mail=yes&submit=submit&transaction=377-6748-Q

Can you recreate the full HTML for the form, including appropriate `<label>` tags?


```
    <form action="http://www.tshirts.biz/orders" method="get">
    <label for="address">Address?   </label>
    <input type="text" name="address" id="address" value="Not specified" />
    <br />
    <label for="size">Shirt size?  </label>
    <input type="radio" name="size" id="S" value="S" /><label for="S">S</label>  
    <input type="radio" name="size" id="M" value="M" checked="checked" /><label
for="M">M</label>  
    <input type="radio" name="size" id="L" value="L" /><label for="L">L</label>  
    <input type="radio" name="size" id="XL" value="XL" /><label for="XL">XL</label>  
    <br />
    <label for="mail">Add me to your mailng list.</label>
    <input type="checkbox" name="mail" id="mail" value="yes" checked="checked" />
    <br />
    <button type="submit" name="submit" id="submit" value="submit">Submit Order</button>
    <input type="hidden" name="transaction" id="transaction" value="377-6748-Q" />
    </form>
```

6. Multimedia (18 points)

Sometimes, a browser will not display a movie or play a sound that is embedded in a page, even though the embedding is properly done and the HTML is correct. (For example, it may instead display a puzzle piece or a broken link icon.) Other times, the same media clip can appear different on two different computers even using the same browser. Explain why this can occur, and what (if anything) the web designer can do to prevent it.

Browsers depend on plugins to display multimedia content. If the browser does not have information on the proper plugin to play a particular media type, then it cannot play it even if the media clip is properly embedded in the page. On some browsers (such as Netscape) scripts can check the list of available plugins and take alternate action if the proper one is not available. This does not work on all browsers, particularly Internet Explorer. Some more advanced scripts use alternative methods to detect whether a particular plugin is installed, usually via a small test movie. The differences in appearance can stem from the use of different plugins on the two machines.