

Name: _____ ID: _____

CSI 3140 – WWW Structures, Techniques and Standards

Midterm examination

Length of Examination: 75 minutes

February 23, 2010

Professor: Guy-Vincent Jourdan

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Family Name: _____

Other Names: _____

Student Number: _____

Signature _____

Closed book. Answer **ALL** questions.

No calculators or other electronic devices are allowed.

At the end of the exam, when time is up:

- Stop working and turn your exam upside down.
- Remain silent.
- Do not move or speak until all exams have been picked up and the professor gives the go-ahead to leave.

Marks

Question 1	/ 10 Marks
Question 2	/ 10 Marks
Question 3	/ 10 Marks
Question 4	/ 10 Marks
Question 5	/ 10 Marks
TOTAL	/ 50

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4. What will be rendered in a browser when reading the following html page:

```
<!DOCTYPE html
  PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>
      test table
    </title>
  </head>
  <body>
    <table border="1">
      <caption>
        Be aware!
      </caption>
      <tr>
        <td>Type</td><td>&nbsp;</td><th colspan="2">Values</th>
      </tr>
      <tr>
        <th rowspan="2">Normal</th><td>A</td><td>B</td><td>C</td>
      </tr>
      <tr>
        <td>A</td><td>B</td><td>C</td>
      </tr>
      <tr>
        <th>Others</th><td>A</td><td>&nbsp;</td><td>B</td>
      </tr>
    </table>
  </body>
</html>
```

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Question 2 [10 Marks]: DTD

1. Consider the following XML DTD grammar (partial):

```
<!ENTITY % lists "ul | ol | dl">
<!ENTITY % block
    "p | div | %lists; | fieldset | table">

<!ELEMENT map ((%block; | form)+ | area+)>
<!ATTLIST map
    id          ID          #REQUIRED
    class       CDATA       #IMPLIED
    name        NMTOKEN     #IMPLIED
>
```

Give a factual description of what it tells you about the **map** element (just a few sentences)

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2. Consider the following XML DTD grammar (partial):

```
<!ELEMENT myarray (caption?, (line+), proper?)>
<!ELEMENT caption (#PCDATA)>
<!ELEMENT line (#PCDATA)>
<!ELEMENT proper EMPTY>
<!ATTLIST proper
  num ID #REQUIRED>
```

Are the following documents correct? If not, identify and correct the error(s):

<pre><myarray> <line>Some text</line> <line>Some more text</line> <line>And some more</line> </myarray></pre>	<pre><myarray> <line>Some text</line> <line>Some more text</line> <caption>those were two great lines</caption> </myarray></pre>
<pre><myarray> <caption>I am just a caption </caption> </myarray></pre>	<pre><myarray> <caption>The caption</caption> <line>Some text</line> <line>Some more text</line> <proper id="1" /> </myarray></pre>

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Question 3 [10 Marks]: CSS

Consider the following HTML document:

```
<!DOCTYPE html
  PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>
      My Page
    </title>
    <link rel="stylesheet" type="text/css" href="style1.css"
          title="Style 1" />
    <link rel="alternate stylesheet" type="text/css" href="style2.css"
          title="Style 2" />
    <link rel="alternate stylesheet" type="text/css" href="style3.css"
          title="Style 3" />
    <link rel="alternate stylesheet" type="text/css" href="style4.css"
          title="Style 4" />
  </head>
  <body>
    <p id="first">
      This is the first paragraph.
    </p>
    <p class="first">
      This is the second paragraph.
    </p>
  </body>
</html>
```

The file **style1.css** reads as follows:

```
#first      {display:none}
```

The file **style2.css** reads as follows:

```
#first      {visibility:hidden}
```

The file **style3.css** reads as follows:

```
.first      {position:absolute;
             top:0.5em}
```

The file **style4.css** reads as follows:

```
p           {display:inline}
```

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1. What will be displayed in the browser when *Style 1* is selected?

2. What will be displayed in the browser when *Style 2* is selected?

3. What will be displayed in the browser when *Style 3* is selected?

4. What will be displayed in the browser when *Style 4* is selected?

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5. Give a brief outline of the “cascade” of rules that are applied to decide which CSS rules to apply to an element

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Question 4 [10 Marks]: JavaScript

1. What will be written in the *alert* window by the following JavaScript code?

```
var o;  
o = new Data( "alpha" );  
  
function Data( value ) {  
    this.data = value;  
}  
  
function getConstant() {  
    return this.constant;  
}  
  
function makeData( value ) {  
    o = new Object();  
    o.constant = "bravo";  
    o.data = getConstant;  
    return o;  
}  
  
function test( param1, param2, param3 ) {  
    param1 = makeData( "charlie" );  
    param2.data = "delta";  
    param3.data = "echo";  
    param2 = param3;  
    return param1;  
}  
  
var o1;  
o1 = new Data( "foxtrot" );  
  
var o2 = o1;  
o2.data += "golf";  
  
var o3;  
o3 = new Data( "hotel" );  
  
var o4;  
o4 = makeData( "indiana" );  
  
var o5;  
o5 = test( o2, o3, o4 );  
  
window.alert( "o.data = " + o.data() +  
    "\n o1.data = " + o1.data +  
    "\n o2.data = " + o2.data +  
    "\n o3.data = " + o3.data +  
    "\n o4.data = " + o4.data +  
    "\n o5.data = " + o5.data() );
```

ANSWER

```
o.data =  
o1.data =  
o2.data =  
o3.data =  
o4.data =  
o5.data =
```


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Question 5 [10 Marks]: Servlet

Give a brief explanation of the mechanism of URL rewriting implemented in Java Servlets with the **encodeURL** method of the **HttpServletResponse** class.

Specifically, consider the following code snippet:

```
url = "GetCount";  
url = response.encodeURL( url );
```

1. After execution, what will be the format of the String `url`?

2. What is the goal of this mechanism?

3. When should it be used?

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4. What are the difficulties associated with its usage?

5. Give an alternative to this mechanism. Briefly explain how this alternative works