Sample Multiple Choice Questions

Which word refers to the methods and properties of a class that allows other codes to communicate with an object of the class?

A. component
B. constructor
C. encapsulation
D. interface

Which of the following strings match `/^[A-Z][a-z]*[\?!]+$/` ?

A. Hello
B. hello!
C. Mmmmm!!!!
D. ASCII?!

_____ is **not** the function of DOM (Document Object Model).

A. Dynamic display and interaction
B. Processing of HTML documents
C. Processing of XML documents
D. Asynchronous data retrieval

Which of the following is **not** true for XML?

A. The semantics of XML tags are pre-defined by system.
B. XML allows you to define your own tags.
C. XML is a meta-language for describing markup language.
D. XML is designed to describe and structure data exchanged on the internet.

Which of the following is **not** true for XSLT?

A. XSLT is based on XPath.
B. XSLT allows you to specify the structure of an XML document.
C. XSLT allows you to transform one XML document into another.
D. XSLT allows you to transform an XML document into an HTML document.

Which of the following statements is **not** true for a well-formed XML document?

A. All tags must be properly nested.
B. There must be a single root tag.
C. Case is not significant in tag names.
D. All attribute values must be quoted.

_____ is **not** a well-formed element?

A. <foo />
B. <formula>a+b<c</formula>
C. <foo bar='root'/>
D. <system_user first_name="John" last_name="Smith" />

Web services
A. communicate using programming language-neutral Web protocols
B. provide tight coupling between legacy systems
C. are a fully mature technology widely accepted in industry
D. are primarily designed to display Web pages

Sample Short Answer, Code Reading and Code Writing Questions

Is HTTP GET request subject to caching? If so, list two solutions for preventing caching when making an Ajax request?

In Ajax, give an argument against sending data between the client and server using JSON.

For many HTTP requests, GET and POST both work well. Describe two circumstances in which POST would be preferred over GET without taking speed or efficiency into account.

What is the final value of $flag?

```
$count = 10;
if (($count > 5) && ($count < 10)) {
  $flag = 10;
} else {
  $flag = 20;
}
```

Answer: _____

What will be displayed?

```
$str = “gmail.com”;
$dot = strpos($str, ".");
echo substr($str, $dot+1);
```

Answer: _____

The files on the following pages will be used to answer Questions B1 to B4 in this Section. The left hand column includes marks (A-O), each pointing to a particular line of the code file or data file. Assume there are no errors in the execution of the code.

sectionB.html

```
<html>
<head>
   <title>Section B</title>
   <script type="text/javascript" src="sectionB.js"></script>
</head>
<body>
<form>
A  <input type="button" value="button1" onclick="func1()" /><br />
B  <input type = "button" id="butt2" value = "button2" /><br />
</form>
<script type="text/javascript">
var b = document.getElementById('butt2');
b.onclick = func2;
</script>
C  <span id="b1" /></span>
   **********************************<br />
D  <span id="b2" /></span>
</body>
</html>
```

sectionB.xml

```
E  <?xml version="1.0" ?>
<books>
        <book>
                <author>Agnew</author>
                <author>Kellerman</author>
                <author>Meyer</author>
                <title>Multimedia in the Classroom </title>
                <price>60</price>
                <publisher>Allyn and Bacon</publisher>
                <year>1996</year>
        </book>
        <book>
                <author>Dwyer</author>
                <title>Programming games with C++</title>
                <price>70</price>
                <publisher>Course Technology </publisher>
                <year>2001</year>
        </book>
        <book>
                <author>Agnew</author>
                <author>Kellerman</author>
                <title>Distributed Multimedia</title>
                <price>50</price>
                <publisher>Atomic Dog</publisher>
                <year>2003</year>
        </book>
</books>
```

sectionB.js

```
var xHRObject = false;
if (window.XMLHttpRequest)
{
   xHRObject = new XMLHttpRequest();
}
else if (window.ActiveXObject)
{
   xHRObject = new ActiveXObject("Microsoft.XMLHTTP");
}
```

```
function func1(){
F    xHRObject.open("GET", "sectionB.xml?id=" + Number(new Date), true);
    xHRObject.onreadystatechange = getData1;
    xHRObject.send(null);
}

function func2(){
G    xHRObject.open("GET", "sectionB.php?id=" + Number(new Date), true);
    xHRObject.onreadystatechange = getData2;
    xHRObject.send(null);
}

function getData1() {
    if ((xHRObject.readyState == 4) &&(xHRObject.status == 200))
    {
H       var serverResponse = xHRObject.responseXML;
       var header = serverResponse.getElementsByTagName("title");
       var spantag = document.getElementById("b1");
       spantag.innerHTML = "";
I      for (i=0; i<header.length; i++)
       {
         if (window.ActiveXObject)
         {
            spantag.innerHTML += " " +header[i].firstChild.text;
            spantag.innerHTML += " <br />";
         }
         else
         {
            spantag.innerHTML += " " +header[i].firstChild.textContent;
            spantag.innerHTML += " <br />";
         }
       }
J   }
}

function getData2()
{
    if ((xHRObject.readyState == 4) &&(xHRObject.status == 200))
    {
       var spantag = document.getElementById("b2");
K      spantag.innerHTML = xHRObject.responseText;
    }
}
```

sectionB.xsl

```
L   <?xml version="1.0"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform" version="1.0">
   <xsl:output method="html"/>
   <xsl:template match="/">
      <HTML>
         <HEAD>
            <TITLE>Section B</TITLE>
         </HEAD>
         <BODY>
            <xsl:for-each select="books/book[price &lt;= 60]">
               <xsl:value-of select="./title"/>
               ---&gt;
                <xsl:value-of select="count(author)"/>
               <BR/>
            </xsl:for-each>
            ------------------------------------------------
            <BR/>
            <xsl:value-of select=" count(//author) div count(//book)"/>
            <BR/>
            <xsl:value-of select="sum(//price) div count(//book)"/>
            <BR/>
```

```
            <xsl:value-of select="count(//book[year &lt; 2000])"/>
            <BR/>
          </BODY>
        </HTML>
    </xsl:template>
</xsl:stylesheet>
```

sectionB.php

```
<?php
    $xmlDoc = new DomDocument;
    $xmlDoc->load("sectionB.xml");
    $xslDoc = new DomDocument;
    $xslDoc->load("sectionB.xsl");
    $proc = new XSLTProcessor;
    $proc->importStyleSheet($xslDoc);
    echo $proc->transformToXML($xmlDoc);
?>
```

M **N** **O**

B1. When a user clicks "**button1**" on the HTML page, which parts of the code or data will be executed or visited? You are only required to give the sequence of lines that will be executed or visited using the corresponding marks (from A to O). The order must be specified, e.g., "… Y, Z, X, …" means Z after Y, and X after Z.

B2. In getData1( ), after **Line H** is executed, what will be in the object *serverResponse*? After **Line J** is executed (or after the loop indicating by **Line I** finished), what will be in *spantag.innerHTML*?

B3. If we apply the extensible style sheet **sectionB.xsl** to transform the XML document **sectionB.xml**, what output will be generated?

B4. Write XSLT code to select and include the title, the price and the number of authors for each book that has a price higher than $50.