

**UNIVERSITY OF MAURITIUS**  
**FACULTY OF ENGINEERING**

<b>PAPER NO</b>  BScCSE/05S/5  BScIS/05S/4	<b>EXAMINATION</b>  Second Semester 2005/06  BSc (Hons) Computer Science & Engineering  BSc (Hons) Information Systems  Level 2	<b>DATE</b>  Wednesday 17 May 2006
<b>SERIES</b>  May 2006	<b>PAPER</b>  Web Technologies  [CSE 2003Y (3)]	<b>TIME</b>  9:30 – 12:30 Hours

*This paper contains THREE (3) Sections.*

*Sections A and B are COMPULSORY. Section A carries 25 marks.*

*Section B carries 15 marks.*

*Section C contains FOUR (4) questions and all questions carry 20 marks.*

*Candidates are required to answer ANY THREE (3) Questions from Section C.*

**CANDIDATES ARE REQUIRED TO WRITE THE NAME OF THEIR  
TUTOR ON THE COVER OF THEIR ANSWER BOOK/S.**

## SECTION A

### Question 1 [COMPULSORY]

Multiple choice questions. Choose ONE answer only.

1. A valid xml document must
  - A. End with `</xml>`
  - B. Follow a given DTD or Schema
  - C. Be properly nested
  - D. Be written in all small letters or all in uppercase
2. The code to be added to an XML document to link it to an XSL document called **formatbook.xsl** is
  - A. `<?xml-stylesheet type="text/xsl" src="formatbook.xsl"?>`
  - B. `<?xml-transformation type="text/xsl" href="formatbook.xsl"?>`
  - C. `<?xml-stylesheet type="text/xsl" href="formatbook.xsl"?>`
  - D. `<?xml-transformation type="text/xsl" src="formatbook.xsl"?>`
3. If a user wants to submit a form and send the information using the URL to another page called **process.asp**. The code in HTML is:
  - A. `<form action= "process.asp" method= "GET">`
  - B. `<form action= "process.asp" method= "METHOD">`
  - C. `<form href= "process.asp" method= "GET">`
  - D. `<form action= "process.asp" method= "URL">`
4. Which of the following JavaScript codes opens a new window, **popup.html**, when the page **home.html** is opened?
  - A. `<Body onload= "open.new('popup.html','width=400,height=150')">`
  - B. `<Body  
onOpen="window.load('popup.html','width=400,height=150')">`
  - C. `<Body onload="window.load('popup.html','width=400,height=150')">`
  - D. `<Body  
onload="window.open('popup.html','width=400,height=150')">`
5. Which of the following servers can be used to host ASP pages?
  - A. IIS
  - B. Tomcat
  - C. Apache
  - D. IIS and Apache
6. When validating blank text boxes in a web page, what kind of script can be used?
  - A. Server-side scripting only
  - B. Client-side scripting only
  - C. Both server-side and client-side scripting
  - D. Only JavaScript

7. A file which contains pure HTML codes can be saved as
- either index.html, index.htm or index.asp
  - either index.html or index.htm only
  - either index.html, index.htm or index.xml
  - only index.asp
8. Which of the following is not a valid <img> attribute?
- width
  - hspace
  - background
  - border
9. The ASP code to connect to an Access database **books.mdb** is
- ```
Dim objConn
Set objConn = Server.CreateObject("ADODB.Connection")
objConn.Open = "Provider=Microsoft.Jet.OLEDB.4.0; Data Source = c:\datastores\books.mdb; Persist Security Info = False"
```
  - ```
Dim objConn = Server.CreateObject("ADODB.Connection")
objConn.Open = "Provider=Microsoft.Jet.OLEDB.4.0; Data Source = c:\datastores\books.mdb; Persist Security Info = False"
```
  - ```
Dim objConn
Set objConn= Server.CreateObject("ADODB.Connection")
objConn.Open = "Driver= Microsoft Access Driver (*.mdb); Data Source = c:\datastores\books.mdb; Persist Security Info = False"
```
  - ```
Dim objConn = Server.CreateObject("ADODB.Connection")
objConn.Open = "Driver= Microsoft Access Driver (*.mdb); Data Source = c:\datastores\books.mdb; Persist Security Info = False"
```
10. Which of the following tags is/are valid in an XSL document?
- <xsl:stylesheet version="1.0" xmlns:xsl="... "> only
  - <xsl:transformation version="1.0" xmlns:xsl="... "> only
  - either <xsl:transformation version="1.0" xmlns:xsl="... "> or <xsl:stylesheet version="1.0" xmlns:xsl="... ">
  - <xsl:css version="1.0" xmlns:xsl="... "> only
11. Which of the following style tags is not valid in HTML?
- <strike>
  - <b>
  - <blink>
  - <underline>

12. Which of the following codes can be used to validate a blank textbox, TxtName, in JavaScript?
- A. 

```
if request.form("TxtName") = "" then  
    response.write("Name cannot be left blank")  
end if
```
  - B. 

```
if(document.FrmDetails.TxtName.value.length == 0 )  
{  
    alert("Name cannot be left blank")  
}
```
  - C. 

```
if(TxtName.value.length == 0 )  
{  
    alert("Name cannot be left blank")  
}
```
  - D. 

```
if len(document.form1.TxtName.value)=0 then  
    msgbox "The name cannot be left blank"  
end if
```
13. Which of the following codes will ensure that the image javascript1.jpg appears only once in the background at the top right position?
- A. 

```
<body style="background-image: url(javascript1.jpg); background-  
position:top right; background-attachment:fixed; background-repeat:no-  
repeat">
```
  - B. 

```
<body style="background-image: url(javascript1.jpg); background-  
position:top right; background-attachment:fixed;">
```
  - C. 

```
<body style="background-image: href= 'javascript1.jpg'; background-  
position:top right; background-attachment:fixed; background-repeat:no-  
repeat ">
```
  - D. 

```
<body style="background-image: href= 'javascript1.jpg'; background-  
position:top right; background-attachment:fixed;">
```
14. Which of the following is the HTML code for making an email link?
- A. 

```
<a href= "mailto:xxx@yyy">Contact Me</a>
```
  - B. 

```
<a href= "xxx@yyy"> Contact Me</a>
```
  - C. 

```
<mailto>xxx@yyy</mailto>
```
  - D. 

```
<mail href= "xxx@yyy">Contact Me</mail>
```
15. Which of the following is the HTML code for making a text input field?
- A. 

```
< input type="textfield">
```
  - B. 

```
< textinput type="text">
```
  - C. 

```
< textfield >
```
  - D. 

```
< input type="text">
```

16. Inside which HTML element is JavaScript code included?
- A. <script>
  - B. <scripting>
  - C. <js >
  - D. <javascript>
17. Which of the following is the correct JavaScript to write an alert box?
- A. alertBox="Hello World"
  - B. alertBox("Hello World")
  - C. msgBox("Hello World")
  - D. alert ("Hello World")
18. Which of the following is the correct JavaScript code to write the conditional statement **if i is equal to 5**?
- A. if i =5
  - B. if i == 5 then
  - C. if (i == 5)
  - D. if i = 5 then
19. In ASP, what is the correct way to include the file "footer.inc"?
- A. <% include file="footer.inc" %>
  - B. <include file="footer.inc">
  - C. <% #include file="footer.inc" %>
  - D. <!--#include file="footer.inc"-->
20. In ASP, which of the following is a standard Global.asa event?
- A. Application\_OnStart
  - B. Session\_id
  - C. Session\_start
  - D. Global.asa does not have any standard events
21. Which of the following is **not** a correct name for an XML element?
- A. <xmlbook>
  - B. <book title>
  - C. <1BOOK>
  - D. All the 3 names are incorrect
22. In CSS, which of the following must be used to set the background colour of the heading h1 to #FF0000?
- A. all.h1 {background-color:#FF0000}
  - B. h1 {background-color:#FF0000}
  - C. h1.all {background-color:#FF0000}
  - D. h1 { bgcolor:#FF0000}
23. In CSS, which of the following must be used to change the colour of some text?
- A. color:
  - B. text-color=
  - C. fgcolor:
  - D. text-color:

24. Where in an HTML document is the correct place to refer to an external style sheet?

- A. At the top of the document
- B. At the end of the document
- C. In the <head> section
- D. As an attribute in the <body> tag

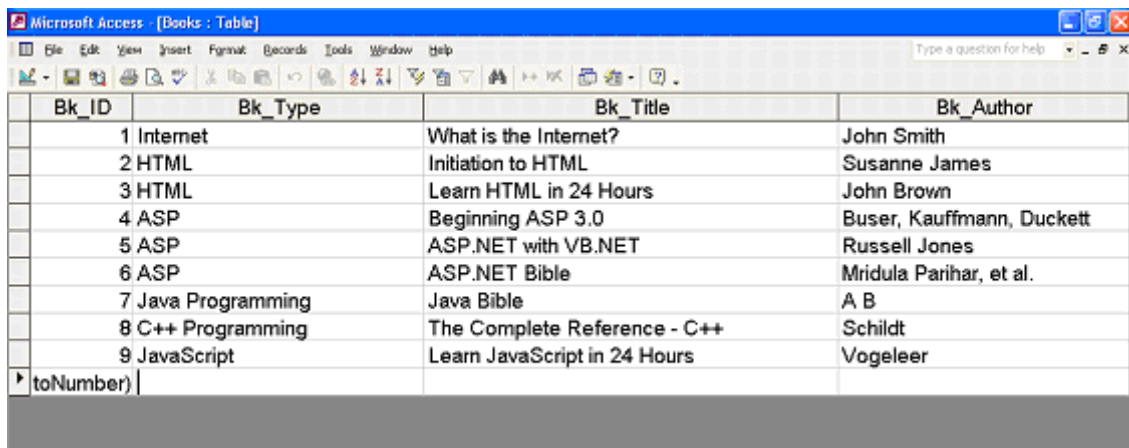
25. How is a comment added to a CSS file?

- A. // this is a comment //
- B. /\* this is a comment \*/
- C. // this is a comment
- D. 'this is a comment

## SECTION B

### Question 2 [COMPULSORY]

- (a) The page **links.asp**, shown in Figure 2, is defined as follows :
- It contains a series of links which represent different book types.
  - All the links that appear on the page are dynamic; they have been obtained from the **Bk\_Type** field of the **BookDetails** table in the **Books** database (shown in Figure 1).
  - Each of the links on the page **links.asp** points to **products.asp** with the book type as querystring.



Bk_ID	Bk_Type	Bk_Title	Bk_Author
1	Internet	What is the Internet?	John Smith
2	HTML	Initiation to HTML	Susanne James
3	HTML	Learn HTML in 24 Hours	John Brown
4	ASP	Beginning ASP 3.0	Buser, Kauffmann, Duckett
5	ASP	ASP.NET with VB.NET	Russell Jones
6	ASP	ASP.NET Bible	Mridula Parihar, et al.
7	Java Programming	Java Bible	A B
8	C++ Programming	The Complete Reference - C++	Schildt
9	JavaScript	Learn JavaScript in 24 Hours	Vogeleer

Figure 1 – BookDetails Table in Books.mdb

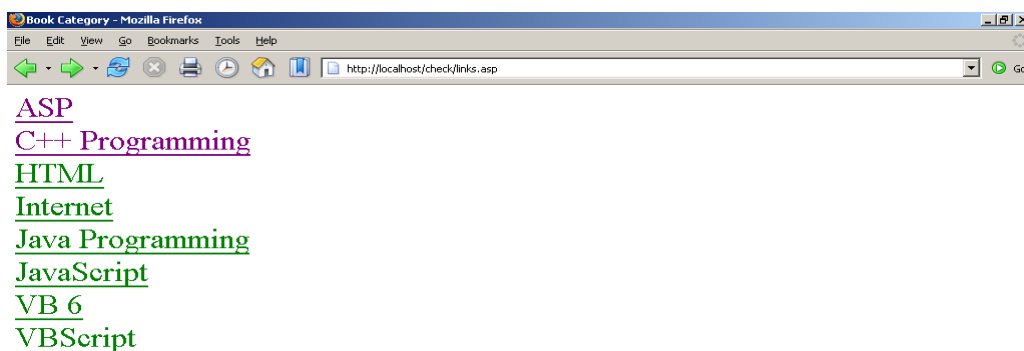


Figure 2 – links.asp

.../continued next page

**Question 2(a)** *(continued)*

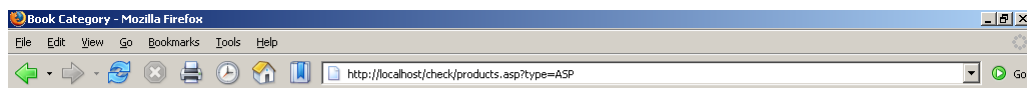
Write the codes for **links.asp** in **ASP ONLY** assuming we have an ODBC DSN called **Books** or a valid OLEDB Provider. The database '**Books.mdb**' is in the **apps** directory on the **C Drive**.

[5 marks]

(b) Write the codes for **products.asp**, shown in Figure 3, in **ASP ONLY** given that :

- **products.asp** displays the **Bk\_Title** and **Bk\_Author** of only the type of book that has been passed in the URL. For example, suppose the person has clicked on ASP on the page **links.asp** then on the page **products.asp** all ASP books are displayed as shown in Figure 3.
- If the user is trying to open the page **products.asp** by typing the URL in the address bar, he is redirected to **links.asp**.

[10 marks]



**Books currently available are:**

ASP.NET with VB.NET

by Russell Jones

ASP.NET Bible

by Mridula Parihar, et al.

Beginning ASP 3.0

by Buser, Kauffmann, Duckett

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Figure 3 – products.asp



## SECTION C

Answer ANY THREE (3) Questions from this Section

### Question 3

- (a) Consider the following xml code, **library.xml**.

```
<?xml version="1.0" encoding="iso-8859-1"?>
<library>
<book>
<title>The Da Vinci Code</title>
<Author>Dan Brown</Author>
<published firstedition="18.03.2003">28.03.2006</published>
</book>
<book>
<title>A Briefer History of Time</title>
<Author>Stephen Hawking</Author>
<published>27.09.2005</published>
</book>
<book>
<title>Foundation PHP for Dreamweaver 8</title>
<Author>David Powers</Author>
<published>19.12.2005</published>
</book>
</library>
```

Write the Schema for **library.xml** as follows :

- Write the code for the simple elements only. [4 marks]
- Write the code for all complex elements and for attributes, if any. [8 marks]
- Combine the above codes into the **library.xsd** adding any required extra lines of code. [2 marks]

**Note : There is no need to use 'ref' or 'named types'**

- (b) Consider the HTML page, **login.html**, where the user logs in to access an online family photo album. All members of the family have been provided with the same username and password to access the website.

The page consists of a form, **frmdetails**, with 2 textboxes; **txtname** and **txtpwd** for username and password respectively. When the user enters his username and password, the values entered are compared to the username and password values that are kept in the code itself.

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### Question 3 (continued)

Write the code for the function **checklogin()** in JavaScript only for checking the username and password and initiating the validation.

**Note : All validations are done at client-side itself and there is no database.**

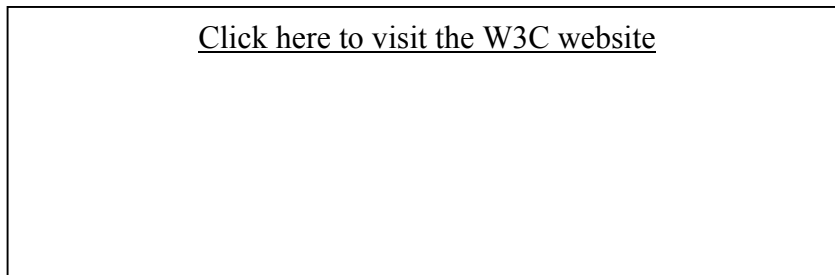
[4 marks]

There is one major disadvantage of using the above system, anyone who right-clicks on the webpage and views the code, can see the username and password. How can this problem be taken care of given that the validation will be done at client-side itself and using JavaScript?

[2 marks]

### Question 4

(a) The page **link.html** is as shown below :



The page contains a link which reads "Click here to visit the W3C website". The properties of the link are :

- it is not underlined
- normal link appears red
- visited link appears green
- active link appears blue
- the page <http://www.w3.org> opens in a new window when the link is clicked.

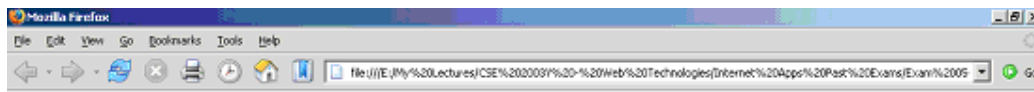
Write the HTML code for the page **link.html**. All the formatting should be done using embedded styles.

[5 marks]

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#### Question 4 (continued)

- (b) Given the XML code in Question 3 above, the style sheet, **library.xsl** is used to format the output and the following screen is obtained.



## Library

Title	Author
The Da Vinci Code	Dan Brown
A Briefer History of Time	Stephen Hawking
Foundation PHP for Dreamweaver 8	David Powers

Figure 4 – library.xml after formatting with library.xsl

- Write the codes for style **library.xsl**. [8 marks]
- Write the line of code to be included in the xml file to ensure that it is formatted as shown in Figure 4. [1 mark]

- (c) Explain the following terms :

- A blog;
- A wiki;
- Spam.

[3 x 2 marks]

#### Question 5

- (a) Explain what is meant by the following terms :

- (i) Digital Certificate;
- (ii) SSL (Secure Socket Layer);
- (iii) SET(Secure Electronic Transaction);
- (iv) Private Key Encryption;
- (v) Public Key Encryption.

[10 marks]

.../continued next page

#### Question 5 (continued)

- (b) Given the following HTML codes, draw the resulting webpage, making sure to name all elements of the page.

```
<html>
<head>
<title>Frameset</title>
</head>

<frameset rows="80,*" border="0" framespacing="0">
  <frame src="banner.html" name="topFrame" scrolling="No" >
  <frameset cols="80,*">
    <frame src="links.html" name="leftFrame" scrolling="No" >
    <frameset rows="277,*">
      <frame src="main.html" name="mainFrame" >
      <frameset cols="750,*" >
        <frame src="" name="copyright.html" name="copyFrame">
        <frame src="logo.html" name="logoFrame">
      </frameset>
    </frameset>
  </frameset>
</frameset>

<noframes>
<body>
</body>
</noframes>
</html>
```

[5 marks]

- (c) Write the HTML code for the page **main.html** shown in Figure 5 given that :

- There is the webpage "<http://www.yahoo.com>" which is embedded in the **main.html** page.
- The size of the **Yahoo!** webpage is width=800 and height=500
- There is some text at the end of the page :  
The above is the webpage "http://www.yahoo.com" which is embedded in the **main.html** page.

All the links in the embedded page work.

[5 marks]

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**Question 5 (c)** (continued)

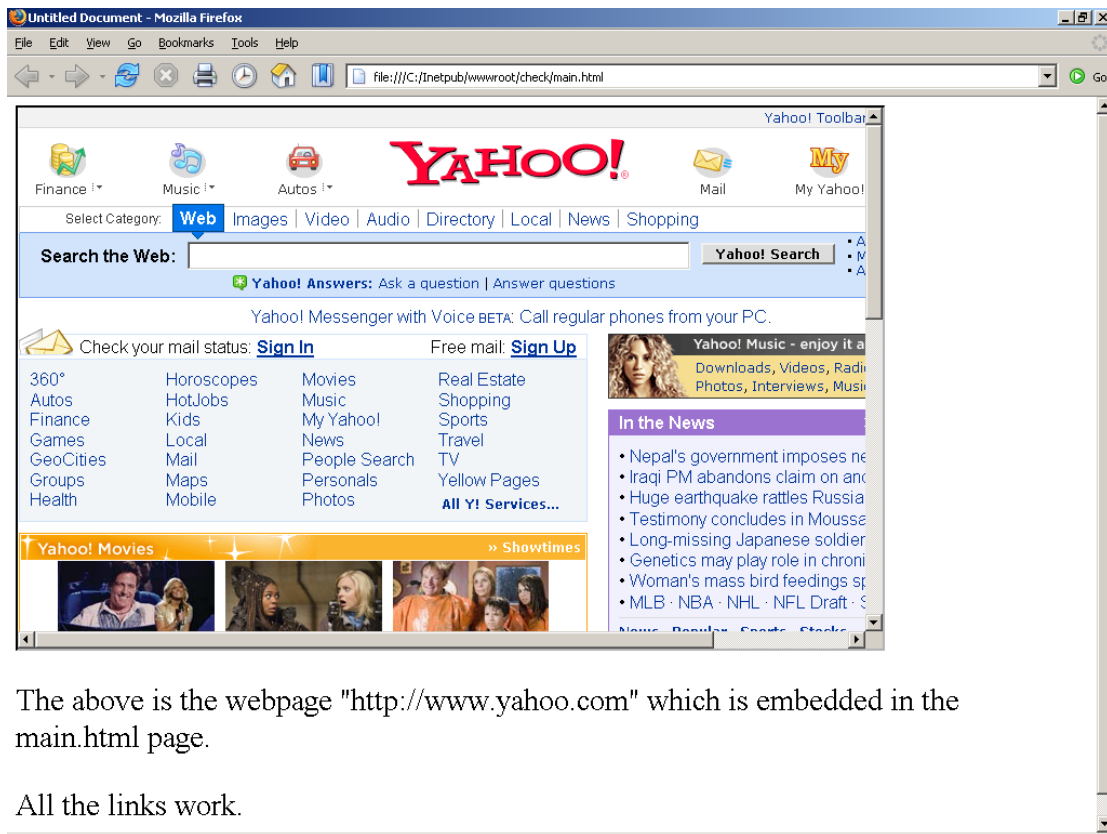


Figure 5 – main.html

## Question 6

- (a) Consider the page **trip.html** given in Figure 6 below. The combo box contains information on 3 trips with their corresponding prices :

Trip	Price/person
Tour of the Island	Rs 1000
Adventure Park	Rs 500
Ile Aux Cerfs	Rs 500

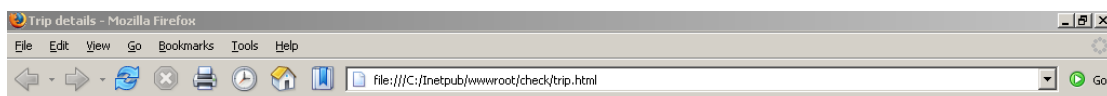
Write the HTML and JavaScript codes for the following ONLY

- The combo box **trip**.
- The function **Showprice()** which makes the price appear automatically in the Price textbox when the user selects any one of the three trips.

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## Question 6 (continued)

- (iii) The function **Calprice()** which is called when the button with label **More than 1 person** is clicked. The function **Calprice()** asks the user to enter the number of persons in a prompt. The default value in the prompt is 1. If he clicks on **Ok**, the **txtPrice** textbox is updated to show total price. If the user clicks on **Cancel**, the price of the selected trip for one person is displayed in the **txtPrice** textbox.
- (iv) How the functions **Showprice()** and **Calprice()** are called from the HTML code.
- (v) The user cannot type in the price textbox but the price values are displayed when the user makes a choice from the combo box.



Please select a trip to get price:

Trip:

Price:

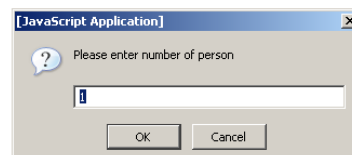


Figure 6 – trip.html

[3 + 3 + 3 + 2 + 1 marks]

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### **Question 6** (continued)

- (b) When designing the above website, cascading style sheets were used to format the page. The properties of the body of the page are as follows : the font used for all paragraphs is 'Arial' and the colour is blue.

The above can be implemented using either

- (i) Inline styles;
- (ii) Embedded styles;
- (iii) Linked styles.

Write the HTML code for implementing the above 3 methods.

**[2 + 2 + 2 marks]**

- (c) There is a possibility that multiple style rules can apply to the same element in a document. What set of rules does CSS use to resolve the conflict?

**[2 marks]**

**END OF QUESTION PAPER**

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