UNIVERSITY OF MAURITIUS

FACULTY OF ENGINEERING

SECOND SEMESTER EXAMINATIONS

MAY 2014

PROGRAMME	BSc (Hons) Applied Computing (Full-Time)		
MODULE NAME	Web Design and Development		
DATE	Friday 16 May 2014	MODULE CODE	CSE 1032Y(1)
TIME	09:30 – 12:30 Hrs	DURATION	3 hours
NO. OF QUESTIONS SET	4	NO. OF QUESTIONS TO BE ATTEMPTED	4

INSTRUCTIONS TO CANDIDATES

Answer **ALL** questions.

All questions carry equal marks.

Question 1

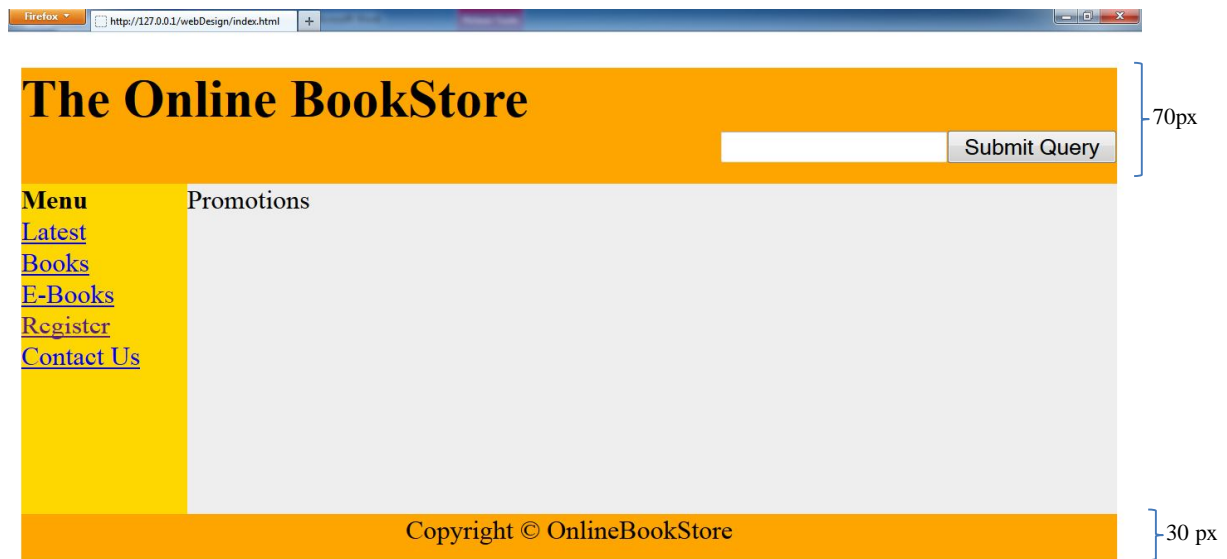Consider page, **index.html**, displayed in Figure 1 below.

Figure 1: index.html

a. Write the HTML code for the page **index.html** given that tables have NOT been used for the design of the page. You do not need to implement any formatting yet. Note the following: The links Latest, Books, E-Books and Register open the pages **latest.php**, **books.php**, **ebooks.php** and **register.html** respectively. The link Contact Us launches the default email client with a mail addressed to 'contact@onlinebookstore.com'.

[10 marks]

b. The page **index.html** is linked to an external css file, **styles.css**. Write the line of code to link the external stylesheet to **index.html**. Indicate where in your code this line is placed. **[2 marks]**

c. Write the code for the page **styles.css** given that **index.html** is formatted as follows:
   - The 4 sections of the page are named **fix_header**, **menu**, **content** and **fix_footer**.
   - The different sections are divided into 70px, 200 px and 30 px vertically and the topmost section **fix_header**, which contains the text 'The Online BookStore', has a width of 660px while the **menu** section has a width of 100 px.
   - The background color of the **topmost** section is #FFA500, the background color of the **menu** section is #FFD700, the background color of the **content** section is #EEEEEE and the background color of the **footer** section is #FFA500.
   - The different sections and text/elements are aligned as per the Figure 1.

[8 marks]

…/Cont'd next page

Question 1 [Cont'd]

d. In the above case, all elements having id starting with the letters 'fix_' are to have the same background color, #FFA500. Use CSS 3 to implement this style.

[2 marks]

e. All websites contain images. However when these images are viewed using devices of different resolutions, they sometimes do not look as expected. Various techniques exist for foreground image sizing and one such technique is variable cropping of foreground images. Explain how this technique is used when an image is used as a foreground image and provide the code for implementing same.

[3 marks]

Question 2

When the user clicks on the link Register on the page **index.html** shown in Figure 1, the page **register.html** is opened. The page **register.html** is displayed in Figure 2.

a. Write the HTML/HTML 5 code for the page **register.html** given that:

*   the names of the fields are as follows: **txtFName**, **txtLName**, **txtDOB**, **txtUName**, **btnCheckUName**, **status**, **txtPwd**, **txtCPwd**, **txtHPhone**, **txtMPhone**, **txtEmail**, **txtBAddress**, **txtBCountry**, **txtSAddress**, and **txtSCountry**. You should choose the most appropriate type for each field.
*   The options in the 2 comboboxes are Mauritius and Rodrigues.
*   The fields marked with a star, *, are compulsory and hence cannot be left blank.
*   The form is submitted to **processRegister.php** by method POST.
*   The button besides **txtUName** (Username) is NOT a submit button.
*   There is an empty div, **status**, besides the button 'Check Username'
*   There is no need to implement any formatting and javascript yet.

Question 2 [Cont'd]

Figure 2: register.html

[15 marks]

b. Write the code for **processRegister.php** given that:

- the file **dbconnect.php** can be used to connect to the bookstore database.
- it checks whether the username is already saved in the table login (username(varchar(25)), password(varchar(10))), if the username does not exist, the username and password are saved in the table login else the user is redirected to the page **error.php**.

Note that all the fields are also saved into the table members but you are not required to write the code for this part.

[10 marks]

Question 3

a. The link 'books' on page **index.html**, shown in Figure 1, opens the page **books.php**. **books.php** displays all the books from the table books(bookId (varchar(14)), bookTitle (varchar(150)), bookDescription (varchar(300)), bookPrice (float), bookType(varchar(25)) and bookImage (varchar(50)). All the details are displayed in a table as shown in Figure 3. Write the php code for the page **books.php** given that the file **dbconnect.php** can be used to connect to the bookstore database.

	Book Title	Book Description	Book Type	Book Price	Image
1481138502	HTML5 for Masterminds	HTML5 for Masterminds leads the reader step by step to gain essential knowledge and to master complex subjects included in HTML5.	Computing	Rs 650	
1118016181	HTML5 Digital Classroom	HTML5 Digital Classroom provides step-by-step instruction to help you gain the essential HTML5 knowledge you need to master the latest HTML5.	Computing	Rs 600	
…	…	…	…	…	…

Figure 3 – books.php

[15 marks]

b. When the user clicks on <u>any</u> of the links shown in Figure 4 below he is redirected to a page **booksbyCategory.php** which displays only books of that type in the same format as **books.php**.

- Write the HTML code for the links below stating any assumptions made. **Note:** There is no php in this part.
- Indicate how the code for the page **booksbyCategory.php <u>is different from books.php</u>**, clearly stating assumptions, if any. You are not required to write the complete code here.

…/Cont'd next page

Question 3 *[Cont'd]*

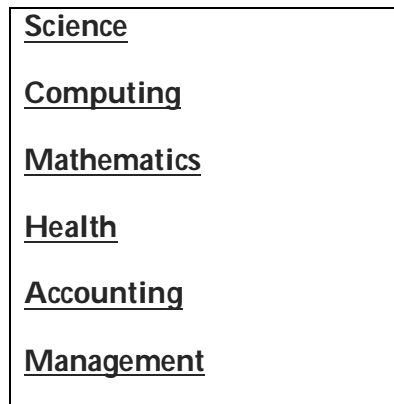| |
|---|
| <u>Science</u>

<u>Computing</u>

<u>Mathematics</u>

<u>Health</u>

<u>Accounting</u>

<u>Management</u> |

Figure 4 - links

[3 + 2 marks]

c. Often pages which need to be accessible to authenticated users only make use of sessions.

- Explain the term session and provide an example of when it is used.

    [2 marks]

- Write the php code to create a session called username containing the value $_POST['username'].

    [2 marks]

- Write the php code to destroy the session called username.

    [1 mark]

Question 4

a. This question refers to the page **register.html** shown in Figure 2 above. When the user clicks on the button 'Check Username', an AJAX function **checkusername()** is called. The function **checkusername()** opens a connection to **checkusername.php** and sends the username, as entered by the user, to **checkusername.php** using method GET. The method **displayresult()** captures a string from the server and displays same in a div. Write the missing code in the partial code provided in Code Listing 1.

Credentials

Username:* test   [Check Username]   username is valid-
not registered yet!

Password:* [   ]   Confirm
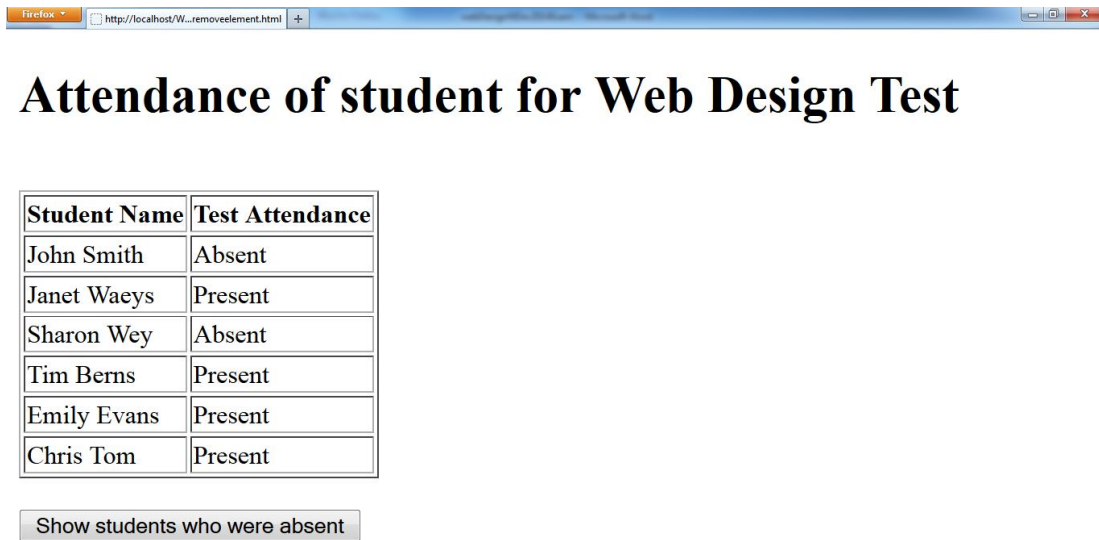Password:* [   ]

Figure 5 – part of register.html

```
function checkusername(usernamevalue){
//code to capture username from the form.
envelop=new XMLHttpRequest();
//code to open a connection to checkusername.php, to send data
// by method GET and capture result in function displayresult().
}
function displayresult(){
//missing code - results are displayed in the div status }
}
```

Code Listing 1

[6 marks]

b. Consider the page **Studentlist.php** (Figure 6) which displays the attendance of students for the Web Design test and the corresponding code in Code Listing 2. When the user clicks on the button **'Show students who were absent'**, all students who were absent for the test are displayed in red. Write the jQuery code for this.

…/Cont'd next page

Question 4 [Cont'd]

Attendance of student for Web Design Test

Student Name	Test Attendance
John Smith	Absent
Janet Waeys	Present
Sharon Wey	Absent
Tim Berns	Present
Emily Evans	Present
Chris Tom	Present

Show students who were absent

Fig
ure 6 - studentlist.php

```
<!DOCTYPE html>
<html>
<head>
<!—missing code ->
  <style>
    .selected { color:red; }
  </style>
</head>
<body><h1>Attendance of student for Web Design Test</h1><br/>
<table border =1>
    <tr><th>Student Name</th><th>Test Attendance</th></tr>
    <tr class="absent"><td>John Smith</td><td>Absent</td></tr>
    <tr class="present"><td>Janet Waeys</td><td>Present</td></tr>
    <tr class="absent"><td>Sharon Wey</td><td>Absent</td></tr>
    <tr class="present"><td>Tim Berns</td><td>Present</td></tr>
    <tr class="present"><td>Emily Evans</td><td>Present</td></tr>
    <tr class="present"><td>Chris Tom</td><td>Present</td></tr>
</table><br/><button>Show students who were absent</button>
</body>
</html>
```

Code Listing 2

[4 marks]

…/Cont'd next page

Question 4 *[Cont'd]*

c. Predict the output produced by the code in Code Listing 3 below, clearly explaining your answer.

```
<html>
<HEAD>
<SCRIPT>
function popupWin() {
text =  "<html>\n<head>\n<title>Pop Window</title>\n<body>\n";
text += "<center>\n<br>";
text += "<a href='http://www.uom.ac.mu' target='_blank'><h2>UoM </h2></a>";
text += "</center>\n</body>\n</html>\n";
setTimeout('windowProp(text)', 3000);
}
function windowProp(text) {
newWindow = window.open('','newWin','width=300,height=100');
newWindow.document.write(text);
setTimeout('closeWin(newWindow)', 5000);
}
function closeWin(newWindow) {
newWindow.close();
}
</script> </HEAD>
<BODY onLoad="popupWin()">
<center>
Javascript demo for Applied Computing exam.
</center>
</body>
</html>
```

Code Listing 3

[3 marks]

<u>**Question 4**</u> *[Cont'd]*

d. This question refers to the page **register.html** shown in Figure 2 above. When the user clicks on the submit button, before the page is submitted the function **validateAll()** is called. In case invalid data has been input in the fields, an alert is displayed and the page is NOT submitted. The function **validateAll()** calls the functions **validatePassword(pwd, cpwd)** and **validateTel(hphone, mphone)** respectively.

- Write the javascript code for the function **validatePassword** that accepts the values of the fields **txtPwd** and **txtCPwd** and checks whether they are same. In case they are not same, an appropriate message is displayed in a popup and function returns false.

[3 marks]

- Write the javascript code for the function **validateTel** that accepts the values of the fields **txtHPhone** and **txtMPhone**, checks whether they contain only digits and are of the correct length and are NOT equal. The length of the home phone number is 7 and that of the mobile number is 8. The home phone number and mobile phone number should NOT be the same. In case of any problem, the appropriate message is displayed in a popup and function returns false. You should use the function **isNaN()** here. The **isNaN()** function determines whether a value is an illegal number (Not-a-Number). This function returns true if the value is NaN, and false if not.

[6 marks]

- Write the javascript code for the function **validateAll()** that calls the above 2 functions by passing the required parameters.

[3 marks]

END OF QUESTION PAPER

/ph