UNIVERSITY OF MAURITIUS

Faculty of Engineering

SECOND SEMESTER EXAMINATIONS

MAY 2016

PROGRAMME	**BSc (Hons) Applied Computing** **BSc (Hons) Applied Computing – (MIXED-MODE)**		
MODULE NAME	**Web Design and Development**		
DATE	**Tuesday** **17 May 2016**	**MODULE CODE**	**CSE 1032Y(1)**
TIME	**13:30 – 16:30 hrs**	**DURATION**	**3 Hours**
NO. OF QUESTIONS SET	**6**	**NO. OF QUESTIONS TO BE ATTEMPTED**	**5**

INSTRUCTIONS TO CANDIDATES

This paper consists of 6 questions. Answer 5 questions.

All questions carry equal marks.

WEB DESIGN – CSE 1032Y(1)

Question 1

Refer to the page, **template.html**, shown in Figure 1.

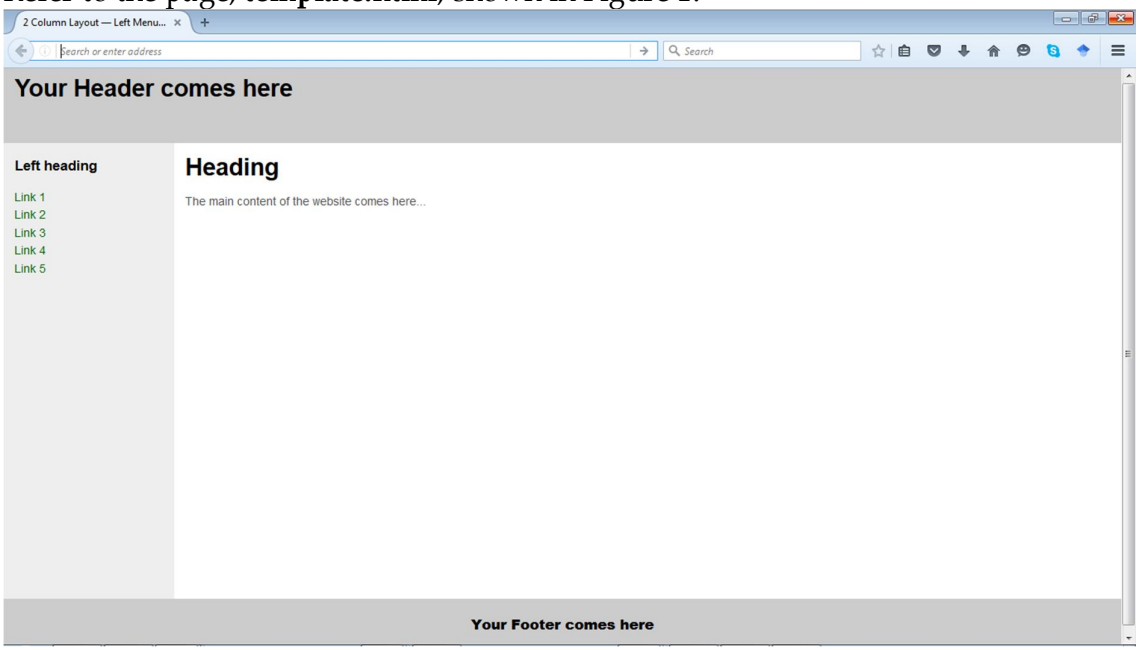

Figure 1 - template.html

a) Write the HTML5 code for the page **template.html** given that the tags <nav>, , <article>, <header> and <footer> have been used for the design of the page. The links are actually an unordered list and are dummy links pointing to the **template.html** page itself. You do not need to implement any formatting yet.

[10 marks]

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

[2 marks]

c) Write the code for the page **styles.css** given that **template.html** is formatted as follows:

- The background color of the header and footer is #ccc, of the left section is #eee and of the right section is white.
- The menu on the left is an unordered list with the bullets not showing
- The links are not underlined and are darkgreen in color (link color)

[8 marks]

Questions 2 and 3 refer to Figure 2, **alumniRegistration.html**, where former university students can register as alumni. When the button **Register** is clicked, all information is sent to the **saveAlumni.php** where they are saved in the table **alumni** in the **uni** database.

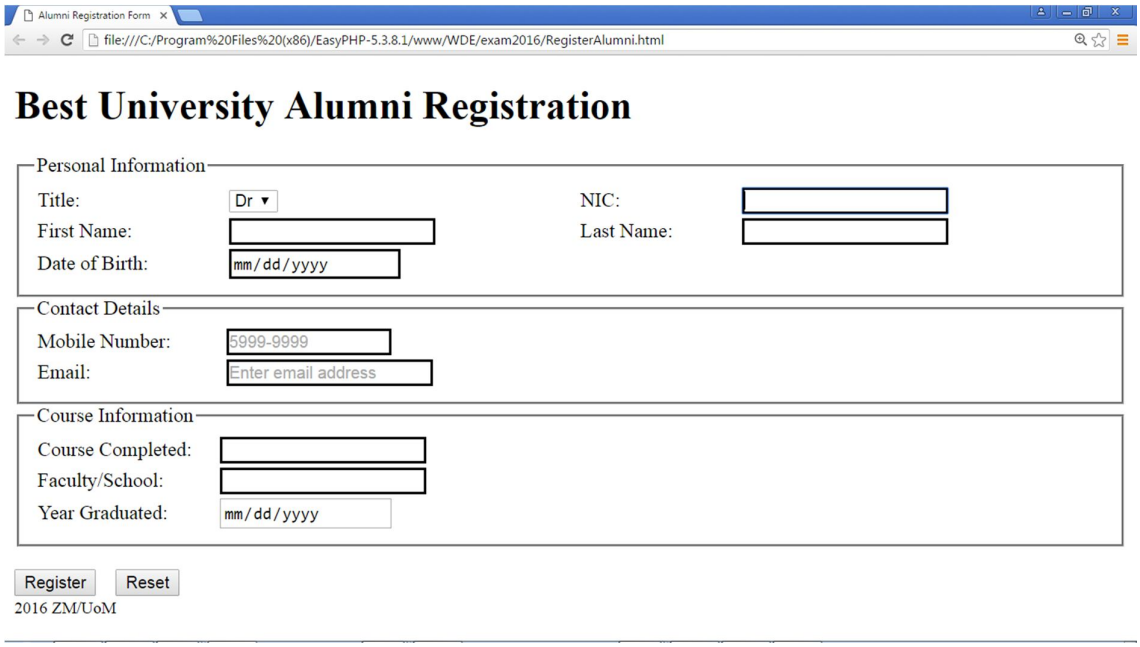

Figure 2 - alumniRegistration.html

Question 2

a) Write the HTML code for the page **alumniRegistration.html** given that:

- The names of the fields are as follows: cmbTitle, txtNIC, txtFName, txtLName, dteDOB, telMPhone, emlEmail, txtCourse, txtFaculty and dteYear. You should choose the most appropriate type for each field.
- dteDOB, telMPhone, emlEmail and dteYear are **not** of type text.
- The options in the combobox, cmbTitle, are Dr, Mr, Mrs and Miss.
- All the fields are compulsory and hence cannot be left blank – validated using HTML5.
- The form is submitted to **saveAlumni.php** by method **POST**.
- All formatting has been done using CSS/CSS3. There is no need to implement any formatting and JavaScript yet. **[14 marks]**

b) In the above form, all elements having name starting with the letters '*txt*' should display text in *bold* and in *blue*. Use **CSS 3** to implement this style. **[3 marks]**

c) Briefly explain three main kinds of style available.

[3 marks]

Question 3

a) When the user clicks on the **Register** button on the **alumniRegistration.html** page, before the information is sent to **saveAlumni.php**, a JavaScript function, checkNIC() is called. The function checks if

- the length of the NIC is 14
- starts with an alphabet,
- followed by 12 numbers
- and ends with either an alphabet or a number.

You may find the following existing JavaScript functions isNanN(), charAt() and indexOf() useful here.

[8 marks]

b) Write the code for the file **dbconnect.php** which contains all code needed to connect to the mysql **uni** database given the following details:

- Server name: localhost
- Username: root
- Password: alumni

[2 marks]

c) Write the code for the page **saveAlumni.php** given that:

- All the fields on the **alumniRegistration.html** are captured
- An existing file **dbconnect.php** can be used to connect to the **uni** database.
- The schema of the table **alumni** is as follows: id(varchar(15), PK) title(varchar(10)), firstName(varchar(25)), lastName(varchar(25)), DOB(varchar(25), mobile(int), email(varchar(50)), course(varchar(50)), faculty (varchar(25)) and year (varchar(20))).
- Before saving a check is performed on the NIC.
    - If the NIC (which maps on the field **id** in the table) already exists, the user is redirected to the page **alumniRegistration.html**.
    - If the id does not exist, then all data previously captured are inserted in the table **alumni** and the message 'You have successfully registered as Alumni' is displayed on the page.

[10 marks]

Question 4

The page **searchRecipe.php** is shown in Figure 3 and Figure 4. The combobox, **cmbRecipe**, has been populated from the list of recipes found in the table **recipes** in the database **CookBook**. When the user clicks on the **View Recipe** button, the details of the selected recipe are displayed in a div, **div_recipe**, using AJAX.

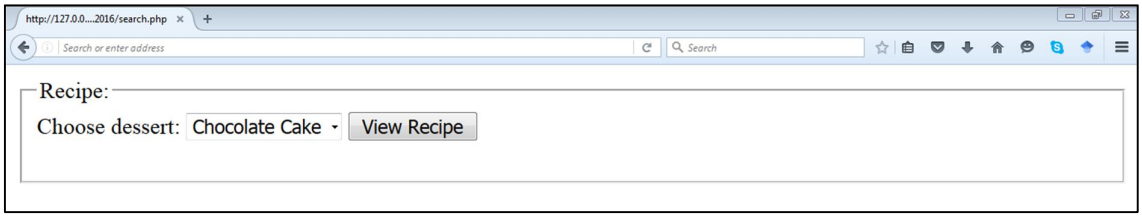

Figure 3 - searchRecipe.php with no data entered.

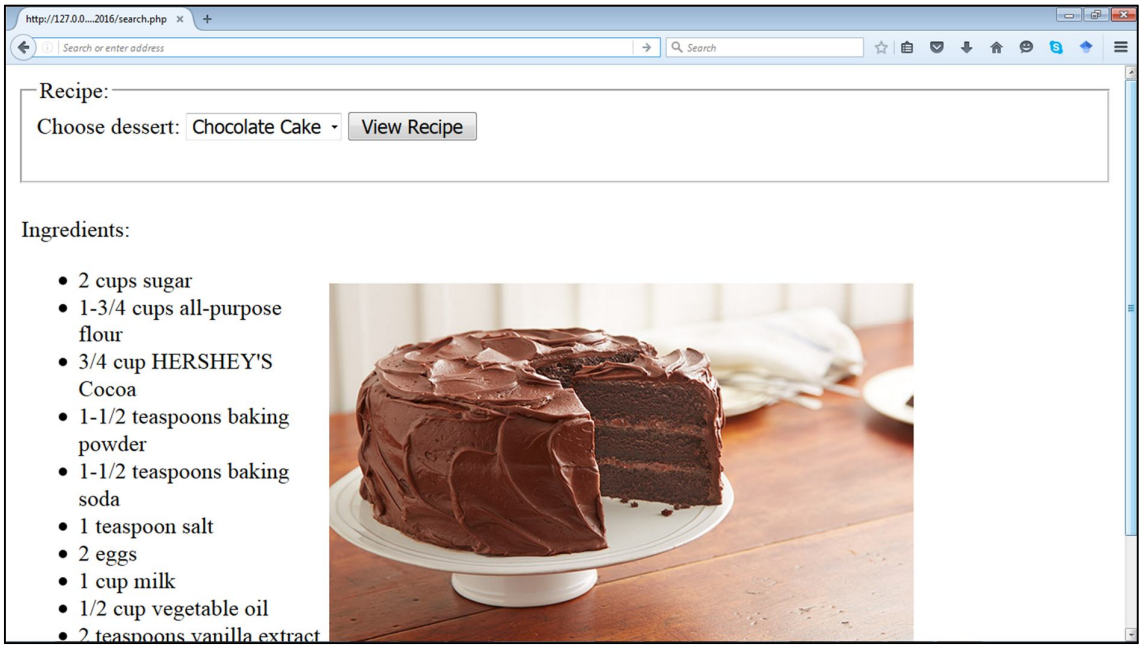

Figure 4 - searchRecipe.php after clicking on 'View Recipe' button.

a) Write the php code for the page **searchRecipe.php**. If there are no recipes available, the message 'No recipes available for the time being' should be displayed instead of the combobox and button. You need not write the AJAX Code yet but only code for the interface shown in Figure 3.

The credentials to access the **CookBook** mysql database are as follows:

- Server name: localhost
- Username: root
- Password: cook

Only column **RecipeName** is displayed from table **Recipes**.

[12 marks]

Question 4 *(Continued)*

b) Write the AJAX code to display the recipe details in the div, **div_recipe** given the incomplete code shown in Code Listing 1.

[7 marks]

```
function viewRecipe(){
envelop=new XMLHttpRequest();
//missing code to open a connection to getRecipe.php, to send data captured on form
// by method GET and capture result in an anonymous callback function
}
function displayResult(){
//missing code - results are displayed in the div, div_recipe
//assuming that the data received is already formatted
}
}
```

Code Listing 1

c) Write the code that needs to be added to part a) to call the function **viewRecipe()**.

[1 mark]

Question 5

a) The questions that follow refer to **register.html** shown in Figure 5.

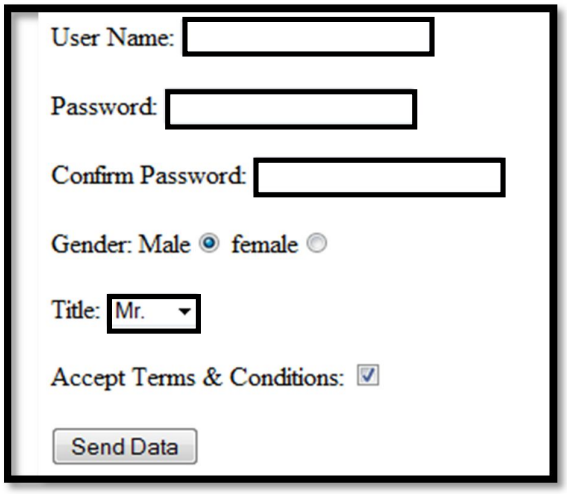

Figure 5 – register.html

Question 5 *(Continued)*

(i) Write the JavaScript code for the function **checkPassword(pwd, cpwd)** that checks if the password and confirm password are same. In case they are NOT the same a popup message should appear informing the user of it.

[4 marks]

(ii) Write the code to call the function **checkPwd()** on submitting the form.

[2 marks]

b) The page **calculator.html** is given in Figure 6.

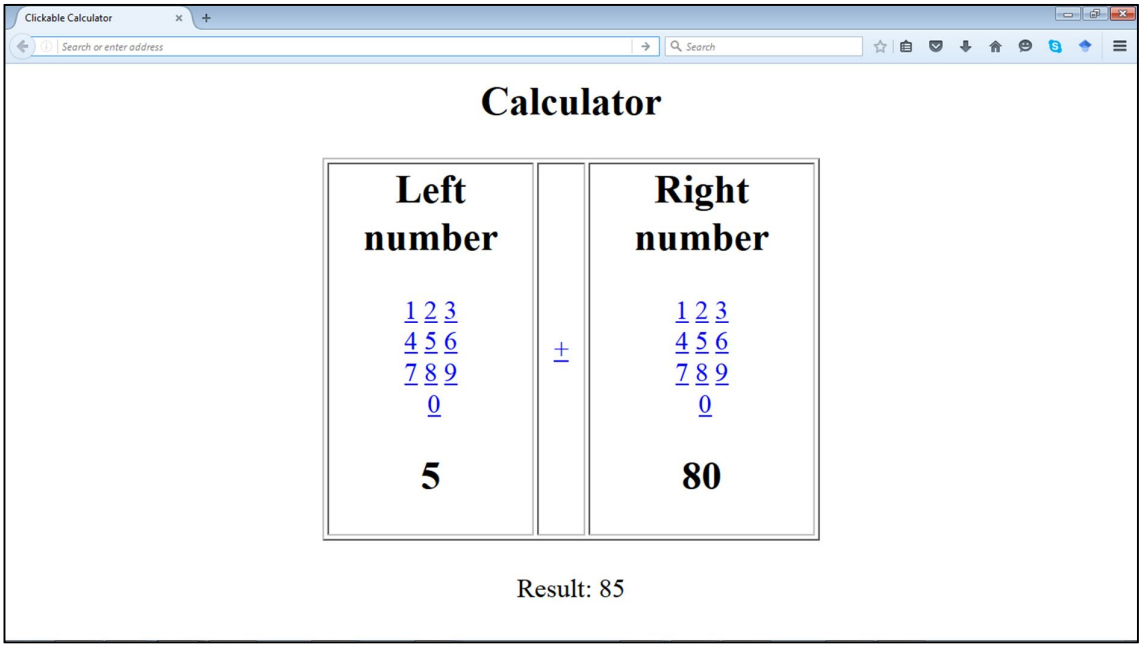

Figure 6 - calculator.html

To use the calculator, the user has to click on the digits on the left and right to select the numbers that are to be added and then click on the operator in the middle and the result show in a span called **result**. All the numbers on the left and on the right and the plus sign are links.

When the user clicks on the numbers on the left, the function **addLeft()** is called and the corresponding number is passed as argument. That number is then displayed in the span, **Left**.

When the user clicks on the numbers on the right, the function **addRight()** is called and the corresponding number is passed as argument. That number is then displayed in the span, **Right**.

Question 5 *(Continued)*

If a user clicks on 8 on the left panel, 8 is displayed in the span, **Left**. If the user now clicks on 0 on the left panel itself, the 8 in the span becomes 80. The calculator values are reset by refreshing the page. The same applied to the right panel.

Write code for the following ONLY

i) The JavaScript function **addLeft(number)** which accepts a number and displays that number in the span called **Left**.

ii) The JavaScript function **addRight(number)** which accepts a number and displays that number in the span called **Right**.

iii) The JavaScript function **sum()** which calculates the sum of the numbers displayed in the span, **Left,** and on the right in the span, **Right,** and displays the results in the span, **Results**.

iv) The code to call the function **addLeft(number)** when clicking on number 1 on the left panel.

v) The code to call the function **addRight(number)** when clicking on number 1 on the right panel.

vi) The code to call the function **sum()** when clicking on **+.**

[2 + 2 + 5 + 2 + 2 + 1 marks]

Question 6

a) Pages which need to be accessible to authenticated users only make use of sessions. After the user and password have been checked against values already saved, the session for the user is created.

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

(ii) Write the php code that needs to be added to pages which are only accessible to authenticated users. The code should check for valid session and in case of errors should redirect the user to the **login.php** page.

(iii) Write the php code to destroy that session.

[2 + 4 + 1 marks]

(b) The page **ajax.html,** displayed in Figure 7 and in Figure 8, shows a simple interface with a button 'Read Sequence File'. When the user clicks on the button, a text file, sequence.fasta is read and the content is displayed on the page itself in a div, **div_all**. **[8 marks]**

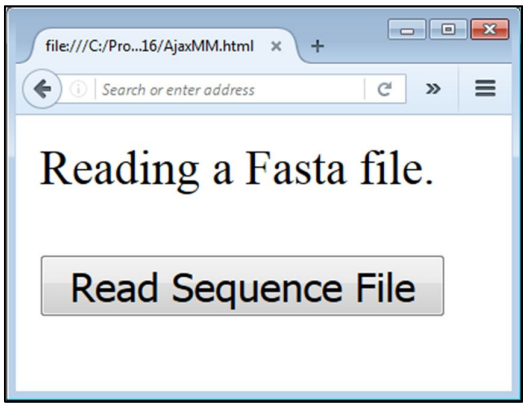

Figure 7 - ajax.html

Figure 8 – ajax.html with results

```
<html>
<script>
function ajax(){
  var ajaxRequest;
  try {
                ajaxRequest=new XMLHttpRequest();
        } catch (e) {
                alert("Your browser does not support AJAX!");
        }
        //Missing Code to be completed – method GET should be used
```

```
}
</script>
<body>
<div>Reading a text file.</div>
<div id='ajaxDiv'></div>
<button type="button" onclick="ajax()">Read File</button>
</body>
</html>
```

Code Listing 2

b) Write the jQuery code to make an image appear using a fade-in effect. The image, **flower.jpg**, is found in a div, **div_image**, and the image should appear on clicking a button.

[5 marks]

END OF QUESTION PAPER