UNIVERSITI TUNKU ABDUL RAHMAN

ACADEMIC YEAR 2017/2018

APRIL EXAMINATION

UECS2094/UECS2194 WEB APPLICATION DEVELOPMENT

FRIDAY, 4 MAY 2018 TIME : 2.30 PM – 4.30 PM (2 HOURS)

BACHELOR OF SCIENCE (HONS) APPLIED MATHEMATICS WITH COMPUTING
BACHELOR OF SCIENCE (HONS) SOFTWARE ENGINEERING

Instructions to Candidates :

This question paper consists of THREE (3) questions in Section A and TWO (2) questions in Section B.

Section A: Answer ALL questions.

Section B: Answer ONE (1) question only.

Each question carries 25 marks.

Note: Should a candidate answer more than ONE (1) question in Section B, marks will only be awarded for the FIRST question in Section B in the order the candidate submits the answer.

Answer the questions in the answer booklet provided.

An appendix containing selected HTML DOM and **XMLHttpRequest** properties and methods is provided.

Section A: Answer ALL questions.

Q1. Write HTML scripts for the following problem statements:

(a) Define and give examples of the HTML code for THREE (3) purposes of links. (6 marks)

(b) Move the text of "Good Luck" across the screen from left to right. (2 marks)

(c) Embed an image named image.jpg into HTML document. (2 marks)

(d) Write the code by using HTML form as shown in Figure 1.1. Declare the required CSS styles as an embedded style sheet in your code. (15 marks)

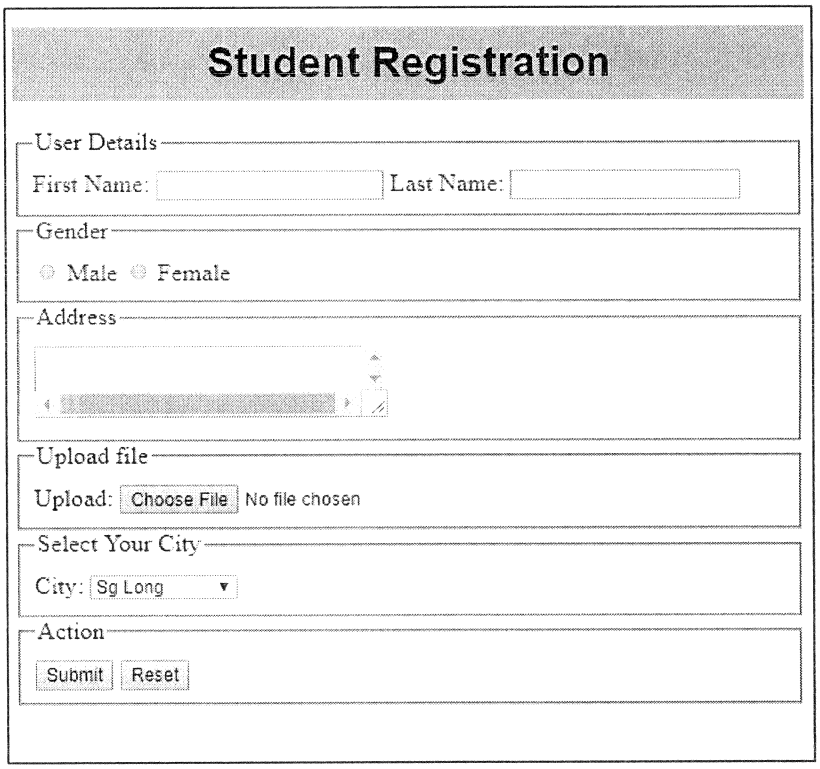

Figure 1.1

The following criteria for the form must be fulfilled:

- Use a fieldset to manage the display of the form elements.
- Fieldset padding is 10px.
- Texts are center for the wording **Student Registration**.
- Font family is **Arial** with a size of 30px for the wording **Student Registration**.
- Font family is **Times** with a size of 18px for all form labels.
- Option values of **Select Your City** in the drop-down list are ***Sg.Long***, ***Putrajaya*** and ***Kuala Lumpur***.

[Total : 25 marks]

Q2. (a) Write the complete MySQL statement for each the following statements. All the statements are related to each other.

(i) Create a new database named phonedb. (2 marks)

(ii) Create a new table named phonebook as the following example in Table 2.1. (5 marks)

Email	Name	Phone No	Sex	DateOfBirth
allia@utar1.edu.my	Allia Swan	0127894235	Female	1988-11-05

Table 2.1.

(iii) Insert the following data for Adam Smith into phonebook table in Table 2.1 : (3 marks)

Email: adam@utar1.edu.my
Name: Adam Smith
Phone No: 0136846789
Sex : Male
DateOfBirth: 1990-05-23

(iv) Update the inserted record for Adam Smith by changing its current phone no. to 0192364585. (3 marks)

(v) Assuming there are 10 records in the table. Display name and phone no. for each record where the sex is male. (3 marks)

(vi) Delete all the records in the table. (2 marks)

(b) Write PHP scripts for the following statements:

(i) Display a triangular diagram as shown below based on its height. For instance the height is 4: (5 marks)

```
*
**
***
****
```

(ii) Calculate the sum of 20 and 45. (2 marks)

[Total : 25 marks]

Q3. (a) Answer the following questions based on the given form in Figure 3.1.

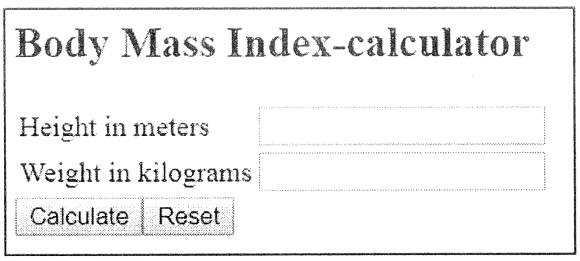

Figure 3.1

(i) Write a simple calculator utility-program, which can be used to calculate a person's Body Mass Index (BMI). Implement simple HTML-form (bmi.html) where user can input weight (in kilograms) and height (in meters, floating point is punctuation mark). (7 marks)

(ii) Write a PHP-file (bmi.php) called from form's action-method that will execute the calculation and print out the result. The formula for calculating BMI is weight / (height * height). (10 marks)

(b) Does the following code as depicted in Figure 3.2 contain error? If yes, explain the error; otherwise state the output in the following code. (4 marks)

```
<html>
<body>

<?php
$cars = array("Volvo", "BMW", "Toyota");
echo "I like " . $cars[0] . ", " . $cars[1] . " and " . $cars[2] . ".";
?>

</body>
</html>
```

Figure 3.2

Q3. (Continued)

(c) Swap the if..else statement in the following code as depicted in Figure 3.3 into **switch statement.** (4 marks)

```
if($average >70)
{
  $grade = 'A';
}
else if($average >=60 && $average <=69)
{
  $grade = 'B';
}
 else if($average >=50 && $average <=59)
{
  $grade = 'C';
}
```

Figure 3.3

[Total : 25 marks]

Section B: Answer ONE (1) question only.

Q4. Figure 4.1 shows the information about the sales of books by area of a MPP company.

id	bookname	area
ISS1563	HTML AND CS3	Kuala Lumpur
ABC6592	JAVASCRIPT	Skudai
CFV2234	HTML 5	Seremban
GHT3638	C# Programming	Melaka
KVD9852	PHP for the Web	Alor Setar

Figure 4.1

(a) Using only a *single* JavaScript statement, write code to declare an array named **salesBooks** that contains five objects containing the properties and values as shown in Figure 4.1. (6 marks)

(b) Using appropriate loops, write JavaScript code to access the entire **salesBooks** array and print all properties of all objects in the browser console. (3 marks)

(c) Write a HTML table containing the above data in Figure 4.1 with appropriate caption and headings using the *HTML DOM Table* object. (11 marks)

(d) Write JavaScript to dynamically change the style of the table headings elements so that the text is displayed in *white* while the background is displayed in *blue*. (5 marks)

[Total : 25 marks]

Q5. (a) AJAX is not a programming language. AJAX allows web pages to be updated asynchronously by exchanging data with a web server behind the scenes. By using a diagram, explain how AJAX works. (7 marks)

(b) Write a code to implement GET request using AJAX. (2 marks)

(c) When to use Ajax? Give two examples and explain. (6 marks)

(d) Alex Bookstore is a famous bookstore in Malacca. Alex Bookstore intends to sell the book via online. For this purpose, a software development project is launched to develop an e-commerce system for selling the books. The e-commerce system uses a relational database named **bookstore**. As a result, the user starts typing an alphabet in the given input field, a request goes to the PHP file via Ajax, a query is made to the MySQL table, it returns results and then the results are fetched by Ajax and displayed.

Following is the structure of the MySQL table as depicted in Figure 5.1:

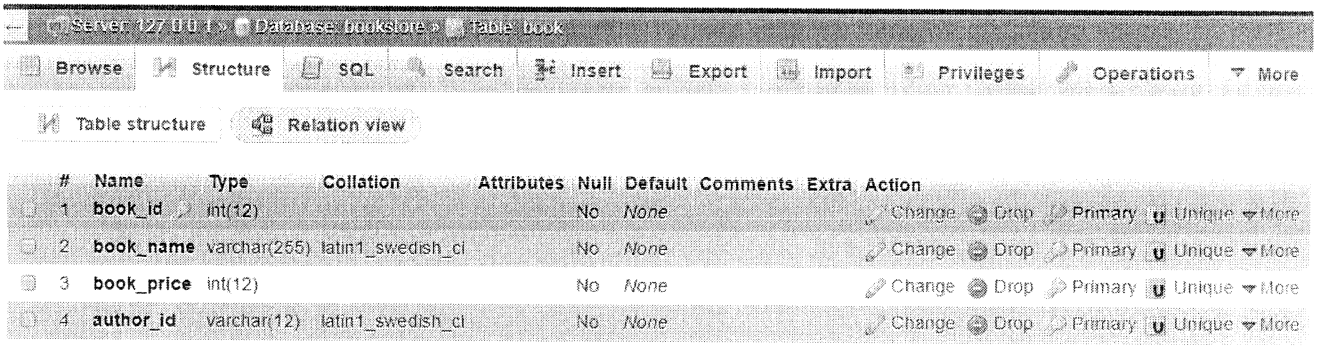

Figure 5.1

Following is the screenshot the output result as depicted in Figure 5.2:

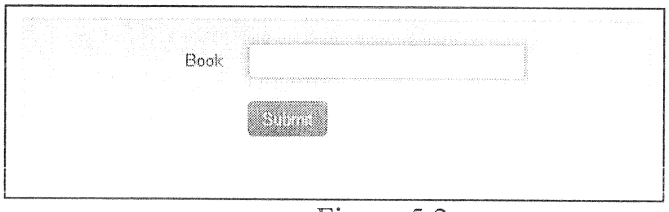

Figure 5.2

Q5. (d)(Continued)

As depicted in Figure 5.3 is the basic HTML form:

```
<form class="ajaxForm" name="ajax " id="ajax ">
        <div class="control-group">
         <label class="control-label" for="book">Book</label>
         <div class="controls">
        <input type="text" id="book">
        </div>
         </div>
         <div class="control-group">
         <div class="controls">
         <button type="submit" class="btnsuccess">Submit</button>
         </div>
        </div>
</form>
```

Figure 5.3

(i) Write JavaScript code to send data to the server by using code ***onkeyup*** event of the input field given. (5 marks)

(ii) Write Javascript code to be added into the HTML file to retrieve the data returned by MySQL and display the data using Ajax. (5 marks)

[Total: 25 marks]

Appendix

Partial List of HTML DOM Methods

```
document.createElement(nodename)
document.createTextNode(text)
document.getElementById(elementID)
document.getElementsByName(name)
document.getElementsByTagName(tagname)
```

Partial List of HTML DOM Element Methods

```
node.appendChild(node)
node.removeChild(node)
node.replaceChild(newnode,oldnode)
element.setAttribute(attributename,attributevalue)
```

Partial List of HTML DOM Table Methods

```
tableObject.createCaption()
tableObject.createTHead()
tableObject.createTFoot()
tableObject.createTBody()
tableObject.insertRow(index)
theadObject.insertRow(index)
tfootObject.insertRow(index)
tbodyObject.insertRow(index)
trObject.insertCell(index)
```

Partial List of XMLHttpRequest Properties and Methods

```
object.open(method, url, [async], [user], [password])
object.send();
object.send(data);
object.onreadystatechange
object.readyState
object.responseText
```