



Open University *of* Mauritius

BSc (HONS) COMPUTER SCIENCE [OUbs033]

EXAMINATION FOR: November - December 2022

MODULE : Server Side Web Technologies [OUbs033211]

DATE : Tuesday 22 November 2022

DURATION : 2 Hours

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of **FOUR (4) QUESTIONS**.
2. Answer **ALL Questions**.
3. Always start a new question on a fresh page.
4. Total marks: **100**

This question paper contains 4 questions and 7 pages.

ANSWER ALL QUESTIONS

QUESTION 1 [25 MARKS]

a) Jehaan chooses to set a biometric password for her mobile device, instead of a personal identification number (PIN).

i. State what is meant by a biometric password.

(3 marks)

ii. Give **three (3)** reasons why a biometric password is more secure than a PIN.

(3 marks)

b) An example of a Uniform Resource Locator (URL) is:



Identify the **three (3)** parts that make up this URL

(3 marks)

c) Devices connected to the Internet have IP (Internet Protocol) addresses. Three IPv4 addresses are given.

Indicate whether each address is valid or invalid. Justify your answer.

i. Address 1: 3A.21.2H.1

ii. Address 2: 299.53.2.2

iii. Address 3: 192.2.1.0

(6 marks)

d) The **jQuery** syntax is used for selecting HTML elements and performing some action on the element(s). Briefly explain the function of the following **jQuery** syntax:

- (i) `$("p").hide()`
- (ii) `$("p").remove()`
- (iii) `$(".date").hide()`
- (iv) `$("#date").remove()`
- (v) `$(this).hide()`

(5 marks)

e) Common Gateway Interface (CGI) is a standard way for web servers to interface with executable programs installed on a server that generate web pages dynamically.

Elaborate on some uses of Common Gateway Interface (CGI).

(5 marks)

QUESTION 2 [25 MARKS]

a) In a Perl script, anything appearing after a '#' on a line is a comment.

Explain the need for comment in writing Perl script and outline what need to be commented for every script a developer creates.

(5 marks)

b) A teacher is writing examination papers on a laptop computer. The computer is connected to the internet. The teacher is concerned about the security and privacy of the papers.

i. State the difference between the security of data and the privacy of data.

(5 marks)

ii. Identify **and** describe **two (2)** threats to the data. Identify **one (1)** security measure to protect against each threat. Each security measure must be different.

(5 marks)

c) The ABSA online portal has the following display when opting for Account Activity for a particular customer. It uses methods of ordered and unordered list.

☒ Transaction Days
☐ Current Period
☐ For Date Ranging From

Write HTML codes to display the above unordered list items and rewrite the HTML codes to make it an ordered list.

(5 marks)

d) Using examples where appropriate, elaborate on how AJAX works when requesting and responding to an event.

(5 marks)

QUESTION 3 [25 MARKS]

a) A web page includes HTML and JavaScript code

```
01 <html>
02 <body>
03
04 Calculate area of a triangle:
05 <form name = "Triangle">
06 <p>Base <input type = "number" name = "B" value = ""></p>
07 <p>Height <input type = "number" name = "H" value = ""></p>
08 <button onclick = "area()">Calculate</button>
09 MISSING CODES
10
11 <script>
12 function area() {
13 var base = document.forms["Triangle"]["B"].value;
14 var height = document.forms["Triangle"]["H"].value;
15 if (base == "" || height == "") {
16 alert("Both values must be entered");
17 MISSING CODES
18 }
19 else {
```

```
20 area = 0.5 * height * base;
21 alert("The area is: " + area);
22 }
23 }
24 MISSING CODES
25 </body>
26 </html>
```

i. Give the **three (3)** identifiers used in the JavaScript code.

(3 marks)

ii. State the purpose of the code on line 08.

(2 marks)

iii. The page is loaded and the values 2 and 8 are entered. State the output when the calculate button is clicked.

(2 marks)

iv. State the meaning of the || operator in line 15 of the code.

(2 marks)

v. Data validation has been used in line 15 of the JavaScript code. Identify the type of data validation used in line 15.

(2 marks)

Write the MISSING CODES at line 9, 17 & 24

(5 marks)

b) jQuery selectors select elements to add behaviour to those elements.

Comment on the above statement.

(3 marks)

c) A teacher uses a relational database, **RESULTS**, to store data about her students and their test Results.

The **RESULTS** database has the following structure:

STUDENT (StudentID, FirstName, LastName, Class, TargetGrade)

TEST (TestID, Topic, MaxMarks)

STUDENT_TEST (StudentID, TestID, Mark)

i. A student with ID JM0701 has obtained a mark of 92 for a Computer Science test paper with ID CS2021.

Write an SQL script to add this data to the database.

(2 marks)

ii. Write SQL script to display the Student ID, mark and maximum marks for all tests with the topic of 'Programming'.

(4 marks)

QUESTION 4 [25 MARKS]


a) Websites can be created using HTML structure and presentation.

State what is meant by HTML structure and presentation. Give an example of each in your answer.

(5 marks)

b) The form below represents a web page which allows the user to record visitor's details of queries issued by administrators. On submission of the form, the data is further processed by the script *sniffing.php*.

(20 marks)

SNIFFING CABLE
Visitors contact List July 2022
Contact Date : 
Visitor Id :
First Name :
Last Name :
Gender : Male ☒ Female ☐
Issues: Other Particulars:

Technical Officer : ☐ Above Visitor's info is correct

Figure 1:

query.html

- **Additional Information**

1. Set id and name of Contact Date textbox to *dtecontact*,
2. Set id and name of Visitor Id textbox to *txtCID*,
3. Set id and name of First Name textbox to *txtFname*,
4. Set id and name of Last Name Textbox to *txtLname*,
5. Set name of Gender radio button to *rdoGender* and values 'M' for Male and 'F' for Female,
6. Drop down (name & id of Issues set to *sltissues*) containing the following: *First Row (value=Accounts)*, *Second Row (value=Site)* and *Third Row (value=others)*,
7. Set id and name of other particulars textbox to *txtother*,
8. Set id and name of visitor officer checkbox to *chkofficer*,
9. Button *Submit Form* submits data to the *sniffing.php* via the *POST* method.

Write the HTML5 codes for *query.html* (as shown in Figure 1) taking into consideration the above information. *You may assume that NO table tag has been used in this form.*