

OKOLEJ UNIVERSITI TUNKU ABDUL RAHMAN
FACULTY OF COMPUTING AND INFORMATION TECHNOLOGY
ACADEMIC YEAR 2020/2021

SEPTEMBER/OCTOBER EXAMINATION

AMIT2043 WEB SYSTEMS AND TECHNOLOGIES

SATURDAY, 26 SEPTEMBER 2020 TIME: 2:00 PM – 5:00 PM (3 HOURS)

DIPLOMA IN SCIENCE (INFORMATION SYSTEMS ENGINEERING)
DIPLOMA IN SCIENCE (INTERNET TECHNOLOGY)

Instructions to Candidates:

Answer **ALL** questions in the requested format or template provided.

- This is an open book final online assessment. You **MUST** answer the assessment questions on your own without any assistance from other persons.
 - You must submit your answers within the following time frame allowed for this online assessment:
 - The deadline for the submission of your answers is **half an hour** from the end time of this online assessment.
 - Penalty as below **WILL BE IMPOSED** on students who submit their answers late as follows:
 - The final marks of this online assessment will be reduced by 10 marks for answer scripts that are submitted within 30 minutes after the deadline for the submission of answers for this online assessment.
 - The final marks of this online assessment will be downgraded to zero (0) mark for any answer scripts that are submitted after one hour from the end time of this online assessment. ●
- Extenuation Mitigating Circumstance (EMC) encountered, if any, must be submitted to the Faculty/Branch/Center within 48 hours after the date of this online assessment. All EMC applications must be supported with valid reasons and evidence. The UC EMC Guidelines apply.

FOCS Additional Instructions to Candidates:

- Include your **FULL NAME**, **STUDENT ID** and **PROGRAMME OF STUDY** in your submission of answer.
- Read all the questions carefully and understand what you are being asked to answer. • Marks are awarded for your own (original) analysis. Therefore, use the time and information to build well-constructed answers.

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Question 1

a) Differentiate between Web Sites and Web Applications. (12 marks)

Consist primarily of static web pages	Consist primarily of dynamic web pages
Involve no or little programming	Involve intensive programming
Mainly for information displaying purpose with limited functionalities	With advanced functionalities that helps users to complete certain tasks
Examples: <ul style="list-style-type: none">- Online newspapers- Online articles	Examples: <ul style="list-style-type: none">- TARUC's e-learning portal- Web-based office suite (Google Docs)- Web-based email (Gmail)

b) Construct the PHP code to store the list in Table 1-1 below into an associative array and display them sorted in descending order as shown in Figure 1-1. You are required to use a foreach loop to iterate through the array and display “Main Campus” for Kuala Lumpur and “Branch Campus” for the rest of the states. (16 marks)

State Abbreviation	State Name
JH	Johor
KL	Kuala Lumpur
PH	Pahang
PN	Penang
PR	Perak
SB	Sabah

Table 1-1: List of States

- Sabah (SB), Branch Campus
- Perak (PR), Branch Campus
- Penang (PN), Branch Campus
- Pahang (PH), Branch Campus
- Kuala Lumpur (KL), Main Campus
- Johor (JH), Branch Campus

Figure 1-1: Expected Output

```

<?php
$state = [
    "JH" => "Johor",
    "KL" => "Kuala Lumpur",
    "PH" => "Pahang",
    "PN" => "Penang",
    "PR" => "Perak",
    "SB" => "Sabah",
];

echo "<ui>";
foreach ($state as $key => $value) {
    if ($key == "KL") {
        $campus = "Main Campus";
    } else {
        $campus = "Branch Campus";
    }
    echo "<li>".$value ."(" . $key . "),".$campus."</li>";
}
echo "</ui>";
?>

```

c) A sticky form is useful when a user is required to resubmit a form after filling it incorrectly. Modify the html form code in Figure 1-2 to convert it into a sticky form. (8 marks)

```

<form method="POST" action="">
    Name: <input type="text" name="name">
    <span class="error"><?php if (isset($nameError)) echo $nameError ?></span>

    Email: <input type="text" name="email">
    <span class="error"><?php if (isset($emailError)) echo $emailError
?></span> <input type="submit" name="submit">
</form>

```

Figure 1-2: HTML form

```

<?php
$name = $email = "";
if($_SERVER["REQUEST_METHOD"] == "POST") {
    $name = $_POST["name"];
    $email = $_POST["email"];
}
?>

<form method="POST" action="">

```

```

Name: <input type="text" name="name" value=<?php echo $name; ?>>
      <span class="error"><?php if (isset($nameError)) echo $nameError ?></span>
Email: <input type="text" name="email" value=<?php echo $email; ?>>
      <span class="error"><?php if (isset($emailError)) echo $emailError
?></span> <input type="submit" name="submit">
</form>

```

d) Explain the purpose of each of the following based on the code snippet shown in Figure 1-3:

```

<? php
DEFINE ('DB_USER', 'username');
DEFINE ('DB_PASSWORD', 'password');
DEFINE ('DB_HOST', 'localhost');
DEFINE ('DB_NAME', 'sitename');
// Make the connection:
$dbc = @mysqli_connect (DB_HOST, DB_USER, DB_PASSWORD, DB_NAME) OR
die ('Could not connect to MySQL: '.mysqli_connect_error() ); ?>

```

Figure 1-3: Code snippet for connecting to a MySQL server.

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Question 1 (d) Continued

(i) DB_HOST (4 marks)

(ii) DB_USER (4 marks)

(iii) DB_NAME (4 marks)

(iv) die() function (2 mark)

DB_HOST	Define the localhost
DB_USER	Define the database username
DB_NAME	Define the database name
die() function	die() will execute if mysqli_connect fails to return a valid resource link. The die() function terminates the execution of the script.

[Total: 50 marks]

Question 2

a) Identify and explain in your own words the **THREE (3)** header calls that are used when sending a file to a Web browser. (12 marks)

-Content-type tells the web browser what kind of data is to be sent. The content-type value matches the data's MIME type.

-Content-disposition tells the web browser how to treat the data. For example, attachment to download and inline to display.

-Content-length shows the amount of data to be sent.

b) A cookie is a small file that a Web server embeds on the user's computer and is used to identify that user. Construct a PHP code to create a cookie to identify a *user* with the name *Jane* that will expire after 1 day. (12 marks)

```
setcookie("user", "Jane", time() + 86400);  
1 day = 1 x 24 x 60 x 60 = 86400
```

c) JQuery is a JavaScript library that simplifies JavaScript programming.

(i) Describe the **TWO (2)** methods of embedding the jQuery library in a web page. (8 marks)

- Download the jquery file and use for local
- Directly use the https link

(ii) State and briefly explain in your own words the **THREE (3)** types of jQuery selectors. (12 marks)

1) Element Selector

- The jQuery selectors allow you to select and manipulate HTML elements(s).

2) Attribute Selector

- The [attribute] selector selects each element with the specified attribute.

3) CSS Selector

- It specifies elements in a DOM hierarchy from where jQuery starts searching for matching elements.

d) Write JavaScript code for loading an external message from *message.txt* file using the AJAX jQuery load() method. The message should be loaded when the button is clicked by the user. (6 marks)

```
<!DOCTYPE html>
<html>
  <head>
    <script src="//ajax.googleapis.com/ajax/libs/jquery/1.9.1/jquery.min.js">
    </script>
    <script>
      // Your code should be here
    </script>
  </head>
  <body>
    <div id="div1"><h2> This message will be changed by jQuery AJAX.</h2></div>
    <button>Get message</button>
  </body>
</html>
```

Figure 2-1: Code snippet

```
<!DOCTYPE html>
<html>

<head>
  <script src="//ajax.googleapis.com/ajax/libs/jquery/1.9.1/jquery.min.js">
</script>
  <script>
    $(document).ready(function() {
      $("button").click(function() {
        $("#div1").load("message.txt");
      });
    });
  </script>
</head>

<body>
  <div id="div1">
    <h2> This message will be changed by jQuery AJAX.</h2>
  </div> <button>Get message</button>
</body>

</html>
```