UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2023/2024

COURSE NAME	:	WEB DEVELOPMENT
COURSE CODE	:	BIT 21503
PROGRAMME CODE	:	BIT
EXAMINATION DATE	:	JULY 2024
DURATION	:	3 HOURS
INSTRUCTIONS	:	1. ANSWER ALL QUESTIONS
		2. THIS FINAL EXAMINATION IS CONDUCTED VIA
		☐ Open book
		☒ Closed book
		3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK

THIS QUESTION PAPER CONSISTS OF **FIVE (5)** PAGES

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Q1   Answer **Q1(a)** to **Q1(e)** based on the JSON code shown in **Figure Q1.1**.

```
let music = {
  "musicCollection": [
    {
      "albumTitle": "Master of Puppets",
      "artist": "Metallica",
      "yearReleased": 1986,
      "tracks": ["Battery", "Master of Puppets"]
    },
    {
      "albumTitle": "1989",
      "artist": "Taylor Swift",
      "yearReleased": 2014,
      "tracks": ["Welcome to New York", "Blank Space", "Style"]
    },
    {
      "albumTitle": "Up All Night",
      "artist": "One Direction",
      "yearReleased": 2011,
      "tracks": ["What Makes You Beautiful", "Gotta Be You", "One Thing"]
    }
  ]
}
```

Figure Q1.1

(a)   Write the JavaScript code to print the `yearReleased` of the album `1989`.

(4 marks)

(b)   Write the JavaScript code to print the first track of the album `Master of Puppets`.

(5 marks)

(c)   Write the JavaScript code to add a new track titled `Night Changes` to the `Up All Night` album.

(5 marks)

(d)   Write the JavaScript code to directly update the `yearReleased` of the `1989` album to `2015`.

(4 marks)

(e)   Write the JavaScript code to loop through the `musicCollection` array and print out each album's title and the number of tracks it contains.

(10 marks)

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Q2   Answer **Q2(a)** to **Q2(e)** based on the HTML code shown in **Figure Q2.1**.

```
<!DOCTYPE html>
<html>
    <head>
        <title>jQuery Question</title>
    </head>
    <body>
        <div id="content">
            <h1>Welcome to My Web Page</h1>
            <p class="introduction">This is an introduction to my web
page.</p>
            <ul id="main-list">
                <li class="item">Item 1</li>
                <li class="item">Item 2</li>
                <li class="item">Item 3</li>
            </ul>
            <button id="add-item">Add Item</button>
            <button id="change-colour">Change Colour</button>
        </div>
        <footer>
            <p>Contact us at <a
href="mailto:info@example.com">info@example.com</a>.</p>
        </footer>
    </body>
</html>
```

Figure Q2.1

(a)   Write the jQuery code to change the `h1` text to `Welcome to My jQuery Page`.

(4 marks)

(b)   Write the jQuery code to add a new class, namely `highlight`, to the `<p>` element with the class `introduction`.

(4 marks)

(c)   Write the jQuery code to set the font size of the text within the `<footer>` to 18px.

(4 marks)

(d)   Write the jQuery code to append a new list item `<li class="item">Item 4</li>` to the unordered list `#main-list` when the button with the id `#add-item` is clicked.

(9 marks)

(e)   Write the jQuery code to change the background colour of all `li` of class `item` to `lightgray` when the `#change-colour` button is clicked.

(10 marks)

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Q3   Answer **Q3(a)** to **Q3(f)** based on the PHP code shown in **Figure Q3.1**.

```php
<?php
$servername = "localhost";
$username = "user_admin";
$password = "securepassword123";
$dbname = "UserDB";

$conn = new mysqli($servername, $username, $password, $dbname);

if ($conn->connect_error) {
    die("Connection failed: ' . $conn->connect_error);
}

if ($_SERVER["REQUEST_METHOD"] == "POST") {

    $stmt = $conn->prepare("INSERT INTO registered_users (username,
email, password) VALUES (?, ?, ?)");
    $stmt->bind_param("sss", $formUsername, $formEmail, $hashedPassword);

    $formUsername = $_POST['username'];
    $formEmail = $_POST['email'];
    $hashedPassword = password_hash($_POST['password'],PASSWORD_DEFAULT);
    $stmt->execute();

    echo "New record created successfully";

    $stmt->close();
}

$conn->close();
?>
```

Figure Q3.1

(a)   What is the name of the database used for storing user registration data?

(1 mark)

(b)   Identify the fields in the table where user registration data from the form is stored.

(3 marks)

(c)   What is the purpose of checking `$_SERVER["REQUEST_METHOD"] == "POST"`?

(3 marks)

(d)   Describe the purpose of the `$stmt->bind_param("sss", $username, $email, $hashedPassword);` line.

(2 marks)

(e)   Why are the types of all parameters specified as `"sss"`?

(2 marks)

(f)   What is the name of the PHP function to hash user passwords? Discuss **TWO (2)** reasons why it is important to hash passwords.

(5 marks)

Q4   Answer the following questions.

(a)   Define WebAssembly.

(2 marks)

(b)   Explain how WebAssembly contributes to the performance of web applications such as online gaming.

(3 marks)

(c)   Describe how machine learning contributes to content personalization on the web.

(4 marks)

(d)   Describe **THREE (3)** common security threats faced by websites today.

(6 marks)

(e)   Discuss **THREE (3)** differences between Progressive Web Apps (PWAs) and Accelerated Mobile Pages (AMPs).

(6 marks)

(f)   What is a web development framework? List **THREE (3)** web development frameworks currently available in the market.

(4 marks)

- END OF QUESTIONS -

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