RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES

Bachelor of Science in Information Technology
Second Year - Semester I Examination – July / August 2023

ICT 2204 – WEB TECHNOLOGIES

Time: Two (02) hours

- There are **four (04)** questions in **three (03)** pages.
- Answer **ALL** questions.

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1. a) Are Web and the Internet the same? Explain. (03 marks)

    b) Provide an example of a Uniform Resource Locator (URL) and identify its different components. (04 marks)

    c) How has the evolution from Web 1.0 to Web 2.0 and Web 3.0 transformed the World Wide Web in terms of user participation? (05 marks)

    d) Compare and contrast static web pages and dynamic web pages in terms of content, speed, maintenance, and interactivity. (08 marks)

2. a) i. What are known as container tags in HTML? (03 marks)

        ii. List two examples for empty HTML tags. (02 marks)

    b) Describe the concept of "responsive design" in relation to the viewport meta tag. How can the viewport tag be utilized to create responsive webpages? (04 marks)

    d) In the context of HTML tables, explain the purpose and functionality of the **colspan** and **rowspan** attributes, with examples. (05 marks)

e) Write an HTML markup to display an image of a snow bear, named as 'snowbear01.jpg', in the web page you develop. Set the "alt" attribute of the image to "Snow Bear" for accessibility. Additionally, set the width and height of the image to 300 px and 250 px respectively. Make the image a clickable link that directs users to the URL https://www.worldwildlife.org. (Assume that the image file is located in a subfolder called 'extinct' relative to the current HTML file.)   (06 marks)

3. a) How did CSS solve the problem of formatting web pages that arose with the addition of tags like <font> and color attributes in the HTML 3.2 specification?   (03 marks)

    b) How would you include a CSS file named "style.css" in an HTML document that is located in the same folder as the html file? Provide the necessary HTML markup.   (03 marks)

    c) Describe the cascading order of CSS styles in terms of priority. Explain which type of CSS styles take precedence over others.   (04 marks)

    d) Write the necessary CSS styles for the following scenarios assuming that you are writing them in an external CSS file.

        i)   Apply a green color dotted border and set background color of all **h1** tags to #EFEFEF

        ii) Set the background color of **h2**, and **p** elements to #FCBA03

        iii) Set the background color of the element with the **ID "header"** to #F5F5F5

        iv) Apply a top margin of 20 pixels, and a background color of #FFFFCC to **all elements** with the class "highlighted".

        v)   Set the font family of all **unordered list**s to "Arial, sans-serif", and the text color **all list items** inside the list to #0066FF.   (02 x 05 = 10 marks)

4. a) What is the difference between *var* and *let* keywords in JavaScript.   (02 marks)

    b) "JavaScript arrays can contain any and all types of data at the same time". Do you agree with this statement? Justify your answer.   (04 marks)

    c) Consider the following JavaScript code:

```
console.log(square(5)); // 25

function square(n) {
  return n * n;
}
```

Explain how the code above produces the output 25 even when the function square() is called before it is defined in the code. (04 marks)

d) Iterate over the properties of this 'person' object to display them in the format,
name: John age: 30 city: New York
const person = { name: "John", age: 30, city: "New York" }; (05 marks)

e) JavaScript is often used for form input validation. Implement the validateForm() function to validate the input for the name field in below form. If the input field is empty show and alert to the user.

```
<form name="myForm" onsubmit="validateForm()">
  <label for="name">Name:</label>
  <input type="text" id="name" name="name">
  <input type="submit" value="Submit">
</form>
```
(05 marks)

5. a) What is the function used to initiate a PHP session? (02 marks)

b) Write a PHP code snippet that sets a session variable named "username" to store the logged-in user's name. (03 marks)

c) Assume that you have set a cookie named username too.
Write the PHP script to,
   i. First check if the cookie exists. If it is, then print a welcome message to the user with the username.
   ii. Else, the message "Cookie not found" should be displayed. (05 marks)

d) Assuming you have successfully established a database connection and stored it in a variable called *$dbConnection*, write and execute a SELECT query to retrieve all rows from a table named *users*. You should retrieve the *id*, *name*, and *email* columns from the table. (05 marks)

e) Assess the security implications of using the GET method in PHP forms. (05 marks)

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