The Open University of Sri Lanka

Faculty of Engineering Technology

Department of Electrical & Computer Engineering

Study Programme	: Bachelor of Software Engineering Honours
Name of the Examination	: Final Examination
Course Code and Title	**: EEI3346 Web Application Development**
Academic Year	: 2023/2024
Date	:13th August 2024
Time	: 0930-1230 hrs
Duration	: **3 hours**

General Instructions

1. This question paper contains **Four (04)** compulsory questions, Answer all questions.

2. Answers should be in clear handwriting.

Question 01 (Marks 25)

1. Explain the significance of responsive web design and how HTML contributes to it.

    [4 Marks]

2. How does an HTTP response differ from an HTTP request, and what components does it typically include?

    [5 Marks]

3. Write a JavaScript function that checks if a number is positive, negative, or zero.

    [10Marks]

4. Convert the following data to JSON snippets.

    [6 Marks]

```
<library>
  <book>
    <category>fiction</category>
    <title>1984</title>
    <author>George Orwell</author>
    <price>9.99</price>
  </book>
  <book>
    <category>science fiction</category>
    <title>Dune</title>
    <author>Frank Herbert</author>
    <price>15.99</price>
  </book>
  <magazine>
    <title>National Geographic</title>
    <issue>2023-07</issue>
    <price>5.99</price>
  </magazine>
</library>
```

Question 02 (Marks 25)

1. How does the use of external style sheets and scripts affect the structure and performance of an HTML document?

[6 Marks]

2. What is website caching, and how does it improve performance?

[6 Marks]

3. How does cloud computing transform traditional IT infrastructure and resource management?

[6 Marks]

4. Explain the significance of the OSI model in computer networking.

[7 Marks]

Question 03 (Marks 25)

1. Write an HTML snippet to create the given form with the information shown below. Apply the following designs.

Submit button – apply Green color, Reset button – apply red color

Student Registration Form

Name:

Description:

Gender:

○ Male   ○ Female   ○ Other

Country:

United States   ⌄

Skills

Skill	Level	
HTML	Beginner	⌄
CSS	Beginner	⌄
JavaScript	Beginner	⌄

Submit   Reset

[13 Marks]

2. Write a short note for the following

[12 Marks]

    a. What is the z-index property in CSS and how is it used?
    b. XML schema
    c. What are the data types supported by JSON? Provide examples for each type.
    d. Explain the role of DNS (Domain Name System) in web hosting.

Question 04 (Marks 25)

1. Briefly explain the importance of regular software updates for web security.

[5 Marks]

2. Consider an eCommerce website where users can browse products, add them to a shopping cart, and make purchases. Identify and discuss at least three potential pain

points (challenges) that users might encounter during this process. Propose innovative solutions or features that could be implemented to address each of these pain points and enhance the overall user experience.

[10 Marks]

3. You are developing a simple task management application using Vue.js. The application should allow users to add tasks to a list and mark tasks as completed. You need to create a basic Vue component to handle this functionality.

[10 Marks]

Task: Create a new Vue instance to manage the task list.
   a. **Bind the input field** to a data property so that users can type in a new task.
   b. **Use a method** to add the new task to the list when the user clicks the "Add Task" button.
   c. **Display the list of tasks** dynamically, allowing users to mark tasks as completed by clicking on them.
   d. **Use conditional rendering** to strike through completed tasks.

-------------END OF THE PAPER-------------