



The Open University of Sri Lanka
 Faculty of Engineering Technology
 Department of Electrical and Computer Engineering

Study Programme	: Bachelor of Software Engineering Honours
Name of the Examination	: Final Examination
Course Code and Title	: EEI4346 – Web Technology
Academic Year	: 2022/2023
Date	: 24 th October 2023
Time	: 0930-1230hrs
Duration	: 3 hours

General Instructions

1. Read all instructions carefully before answering the questions.
2. This question paper consists of **Four (4)** questions on **Four (4)** pages.
3. Answer all **Four (4)** questions. All questions carry equal marks.
4. Answers for each question should commence from a new page.
5. This is a Closed Book Test (**CBT**).
6. Answers should be in clear handwriting.
7. Do not use **red** color pen.

Question 01 (25 Marks)

Assume that you have been asked to develop a simple library management system. You have decided to develop the wireframe illustrated in Figure 01 as one of your User Interfaces.

Library Management System

Issue ID	<input style="width: 60%;" type="text"/>
Student ID	<input style="width: 60%;" type="text"/>
Book ID	<input style="width: 60%;" type="text"/>
Date Issued	<input style="width: 60%;" type="text" value="mm/dd/yyyy"/> <input type="checkbox"/>
Date Due	<input style="width: 60%;" type="text" value="mm/dd/yyyy"/> <input type="checkbox"/>
Date Return	<input style="width: 60%;" type="text" value="mm/dd/yyyy"/> <input type="checkbox"/>
Fine	<input style="width: 60%;" type="text"/>

Figure 01: Wireframe of GUI in returning books

- 00532
- A. Write an HTML/CSS snippet to create a **form**, as shown in **Figure 01**. (10 marks)
- B. When you enter the “**Date Due**” and “**Date Return**”, the system needs to calculate and display the fine automatically. Write a **JavaScript code** to calculate and display the fine at the “**Fine**” text field. The fine per day is Rs.10.00. (Mention all your assumptions clearly) (05 marks)
- C. Assume that you have created the database and table according to **Table 01**. Write a PHP code to create the database connection. (03 marks)
- D. Write an insert query to insert details into the table “**tbl_borrow**”. (04 marks)
- E. Write an update query to update the details according to the “**issue_id**”. (Mention all your assumptions clearly) (03 marks)

Table 01: Metadata of Library Management System

Database name	db_LMS		
Table name	tbl_borrow		
Field name	Field type	size	key
issue_id	INT	5	pk
student_id	INT	5	
book_id	INT	5	
issued_date	DATE		
due_date	DATE		
return_date	DATE		
fine	INT	10	

Question 02 (25 Marks)

- A. Define the term *web services*. List down three (3) examples of web services. (06 marks)
- B. List down four (04) integration styles. (04 marks)
- C. Which enterprise integration pattern describes how multiple receivers will receive a specific message? Describe the pattern using an appropriate diagram. (07 marks)
- D. Briefly describe the differences between SOAP and RESTful web services. (08 marks)

Question 03 (25 Marks)

- A. List down three (3) principles of the REST API. Briefly explain one of them. (06 marks)
- B. List down five (5) various types of HTTP requests supported in Postman API. Briefly explain the purposes of two (2) of them. (09 marks)
- C. Write the Postman Scripts to show the following. (10 marks)
- i. Check that the response time is greater than 400. If this is satisfying, display "Response time is greater than 400ms."
 - ii. To get a variable "course_code".
 - iii. To get a global variable "url".
 - iv. To clear an environment variable "env_true".

Question 04 (25 Marks)

- A. What are the layers in the Onion Architecture? Briefly describe them. (05 marks)
- B. List down four (3) login controls in ASP.NET. Briefly describe one (1) of them with a suitable example. (05 marks)
- C. You are requested to fill in the following blanks with appropriate ASP.NET components to get the **Design View** as shown in Figure 02. Write down answers in the given answer book in the correct order [(i) to (xv)]. (15 marks)

Registration number	<input type="text"/>	<i>Registration Number is required</i>
OUSL Center	<div style="border: 1px solid black; padding: 2px;"> CRC ▲ KRC BRC MRC ARC ▼ </div>	<i>Center is required</i>

Figure 02: Design View

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<form id="form1" runat="server">
  <table class="auto-style1">
    <tr>
      <td class="auto-style2">
        <asp:____(i)_____ ID="Label1" runat="server" CssClass="auto-style4"
          Text="Registration number"></asp: ____ (ii)_____ >
        </td>
      <td class="auto-style3">
        <asp: ____ (iii)_____ ID="txt_regNo" runat="server" Width="211px">
          </asp: ____ (iv)_____ >
        </td>
      <td><em>
        <asp: ____ (v)_____ ID="RFV1" runat="server"
          ____ (vi)_____ ="txt_regNo" CssClass="auto-style5"
          ErrorMessage="Registration Number is required">
          </asp: ____ (vii)_____ >
        </em></td>
    </tr>
    <tr>
      <td class="auto-style2">
        <asp: ____ (viii)_____ ID="Label2" runat="server" CssClass="auto-style4"
          Text="OUSL Center"></asp: ____ (ix)_____ >
        </td>
      <td class="auto-style3">
        <asp: ____ (x)_____ ID="lb_cent" runat="server" Height="107px"
          OnSelectedIndexChanged="ListBox1_SelectedIndexChanged" Width="93px">
          <asp:ListItem>CRC</asp:ListItem>
          <asp:ListItem>KRC</asp:ListItem>
          <asp:ListItem>BRC</asp:ListItem>
          <asp:ListItem>MRC</asp:ListItem>
          <asp:ListItem>ARC</asp:ListItem>
        </asp: ____ (xi)_____ >
        </td>
      <td><em>
        <asp: ____ (xii)_____ ID="RFV2" runat="server"
          ____ (xiii)_____ ="lb_cent" CssClass="auto-style5"
          ErrorMessage="Center is required">
          </asp: ____ (xiv)_____ >
        </em></td>
    </tr>
  </ ____ (xv)_____ >
</form>

```