

**University of Ruhuna**  
**Faculty of Technology – Level 1 (Semester 1) Examination**  
**July 2017**

**Department : Information & Communication Technology**  
**Time : 2 hours**

**Subject: Web Technologies**  
**Course Unit: ICT1143**

Answer all **four (04)** questions

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1)

a)

- i) Explain the role of the client and the server , in client server architecture
- ii) Write **one** responsibility of TCP and **one** responsibility of IP protocols in packet switching network
- iii) Briefly explain the forward DNS lookup and the reverse DNS lookup

b)

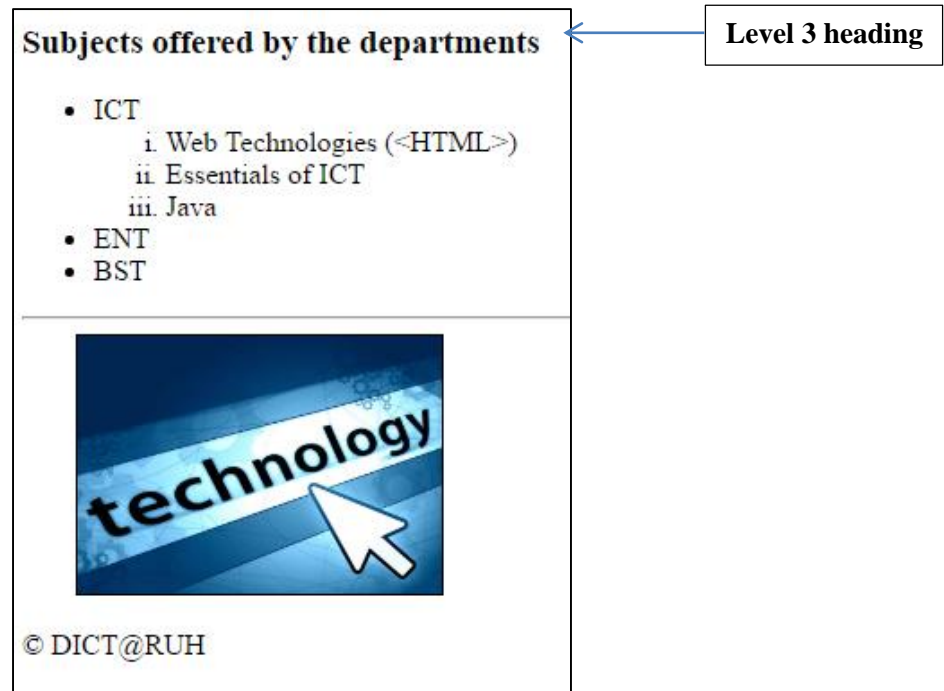
- i) Expand the following abbreviations

Ex: IP : Internet Protocol

1. URI
2. HTTPS
3. TCP

- ii) Name relevant tiers of the web based applications which follows 3-tier architecture (top tier, middle tier, bottom tier)
- iii) Middle tier associates with three logics. Name those three logic types and write the purpose of each logic separately.

c) Write a suitable html code to output the screen given in **Figure 1**



**Figure 1**

**Note:** Title of the web page – “Faculty of Technology”

2)

a) Write code lines for the followings

i) Add following key words into a web page

- html
- css
- javascript

ii) Load the “http://ruh.ac.lk” web page after 10 seconds

iii) Add an image called “logo.png” to a button

iv) Add a password field with the size of 15 and maximum length of 10 characters

b)

i) Name four css selector types?

ii) Give **two** advantages of using **external** cascading style sheets over using inline or embedded styles.

iii) Write an external style sheet to fulfill the followings

- Use **school.jpg** as the body background image (disable the vertical background image repetition)

- Level 1 headings should be aligned to center
- Background color of the paragraphs should be **yellow**

c)

- List **two** drawbacks of using GET method in HTML form processing
- List the line numbers which contain errors in the following code and rewrite the correct code line for each.

**Note:** Minus marks will be given for incorrect line numbers

Use the following format to write answers

Line No.	Correct code line

```

1 <html>
2   <body style="bgcolor:blue">
3     <h2>Welcome to my Web page!</h2>
4     Here are some samples of my HTML expertise:<BR>
5     <ul type="box"> <!-->This is an unordered list.</--!>
6       <li>Item 1</li>
7       <li>Item 2</li>
8       <li>Item 3</li>
9     </ul>
10    <ol>
11      <L1>Item 1</L1>
12      <L2>Item 2</L2>
13      <L3>Item 3</L3>
14    </ol>
15    <hr width=60%>
16    <table border="1">
17      <tr>
18        <td>Row 1, cell 1</td>
19        <td><a name="http://www.ruh.ac.lk">UOR</a></td>
20        <td>Row 1, cell 3</td>
21      </tr>
22      <tr>
23        <td>Row 2, cell 1</td>
24        <td>Row 2, cell 2</td>
25        <td>Row 2, cell 3</td>
26      </tr>
27    </table>
28    <img source="uor.jpg">
29  </body>
30 </html>

```

iii) Draw the output of the following code

```
<html>
  <body>
    <form>
      <table>
        <tr>
          <td>User Name:</td>
          <td><input type="text" name="name"></td>
        </tr>
        <tr>
          <td>Comments</td>
          <td><textarea rows="4" cols="25"></textarea></td>
        </tr>
        <tr>
          <td>Login turn</td>
          <td><input type="radio" name="login_turn">My first login<br>
            <input type="radio" name="login_turn">I have logged before<br>
          </td>
        </tr>
        <tr>
          <td>Your favourite browser</td>
          <td>
            <select name="browser">
              <option value="O">Opera</option>
              <option value="C" selected>Chrome</option>
              <option value="F">Firefox</option>
            </select>
          </td>
        </tr>
        <tr>
          <td><input type="submit" value="Login"></td>
        </tr>
      </table>
    </form>
  </body>
</html>
```

3)

a)

- i) Briefly describe what is a scripting language
- ii) Name two types of scripting languages and give one example for each type
- iii) Draw the expected output of the code given below

```
<html>
<head>
<script>
  for (i=0;i<=10;i++)
  {
    if(i==3){
      continue;
    }
    if (i==6){
      break;
    }
    document.write("Num = " + i);
    document.write("<br />");
  }
</script>
</head>
</html>
```

b)

- i) Briefly describe HTML DOM **methods** and **properties**
- ii) Write two separate javascript code segments to display the numbers from 1 to 5 on the browser
  - Using **while** loop
  - Using **do-while** loop
- iii) Write a JavaScript function called "**findZ**" to solve the equation  $z=2x+y^2$  **Note:** x and y are function parameters
- iv) Extend the code segment you wrote in question 3)b)iii) to print the answer by parsing x=2 and y=4 as arguments.

c) Write a html code to perform following functionalities

User can input values to the text box and press the button “Gender”

When clicking on the button,

- If the input is “F” or “f” it must print “Female”
- If the input is “M” or “m” it must print “Male”
- If the input is any other character then the output must be “Invalid”

Use switch-case, implement the above functionalities

**Note:**

You are given the form as shown in figure 2

Figure 2 shows a web form with the following elements:

- Title: **Insert M/F**
- Input field: A text box containing the character 'F'. A callout box points to this field with the text "Input box id: gender".
- Button: A button labeled "Gender".
- Output: The text "Female" is displayed below the input field.

Figure 2

4)

a) Select the correct answer from the following list to fill the spaces

(variable, DreamWeaver, char, &lt;, javascript , callback functions, bootstrap, &gt; ,var, int,Ubuntu)

- \_\_\_\_\_ is an example for web authoring tools
- \_\_\_\_\_ is an HTML framework
- In JQuery, with effects, the next line of the script code can be executed even though the effect is not finished. \_\_\_\_\_ can be used to prevent this problem.
- \_\_\_\_\_ key word is used to declare variables in javascript
- In HTML, \_\_\_\_\_ ; is the character entity reference of '>' symbol

b)

- What are the two options of adding JQuery into a web page?
- Describe the purpose of using each part of the following JQuery syntax

***\$(selector).action()***

iii) Consider the following html code

```
<html>
<head>
  <script src="jquery-3.1.1.min.js"></script>
  <script>
    .....
  </script>
</head>
<body >
  <button>Hide/Show</button>
  <p class="para">This is my JQuery code</P>
</body>
</html>
```

Write the JQuery code segment between <script> tags to hide the given paragraph when user clicks the “**Hide**” button

c)

- i) Write **four** rules of a well formed xml document
- ii) What is the use of namespaces in XML?
- iii) Write the content of the external DTD file to describe the following elements:

Root element: course

Child elements of the root course

- name – 1 instance,
- description – 1 instance,
- lecturer – 1 instance,
- students - 1 or more instances (required attribute – id)

- iv) Write an XML document and populate it with name, description, lecturer and students elements with the following details

- name - Web Technologies
- description - 3 credit
- Lecturer - Dr.Peter
- students - Jason, Mike, Ann
- Add attribute **id** for students to describe the student number  
Jason – TG001 , Mike-TG002, Ann-TG003

**Note:** Link the **course.dtd** file written in question 4)c)iii) to the xml file