

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

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

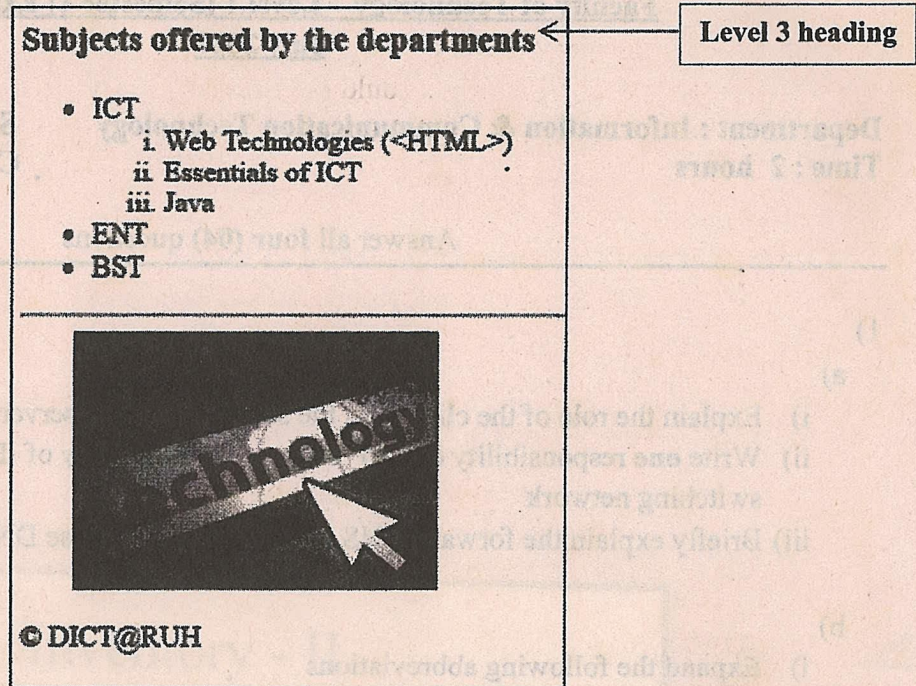


Figure 1

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, <, javascript , callback functions, bootstrap, >, 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