

DUBLIN INSTITUTE OF TECHNOLOGY  
KEVIN STREET, DUBLIN 8

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**B.Sc. in Computer Science**  
**(Software Development and Internet Technologies)**

**Year 2**

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**Supplemental Examination 2001**

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**Web Development**

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Attempt **Question 1**

and

**1 question** from *Section 1*

and

**2 questions** from *Section 2*.

All questions carry equal marks.

## Compulsory Question

1. Attempt 5 sections.

(a)

- i. Give two uses for tables in HTML.
- ii. Sketch the output of the code below.

```
<html>
  <head>
    <title>
      Question 1 A
    </title>
  </head>
  <body>
    <table width=50% border=2>
      <tr>
        <td width=25%>
          Alpha
        </td>
        <td width=75%>
          <table width=100% border=1>
            <tr>
              <td width=50%>
                Beta 1
              </td>
              <td width=50%>
                Beta 2
              </td>
            </tr>
          </table>
        </td>
      </tr>
      <tr>
        <td width=25%>
          Gamma
        </td>
        <td width=75%>
          Delta
        </td>
      </tr>
    </table>
  </body>
</html>
```

(5 marks)

(b)

- i. Explain what image maps are in HTML.
- ii. Sketch the image map produced by the code below, clearly indicating each section of the map.

```
<html>
  <head>
    <title>
      Question 1 B
    </title>
  </head>
  <body>
    <map name="collegemap">
      <area shape="rect" coords="0,0,50,50"
        href="http://www.dit.ie">
      <area shape="rect" coords="100,0,200,100"
        href="http://www.dcu.ie">
      <area shape="rect" coords="0,100,200,200"
        href="http://www.tcd.ie">
    </map>
    
  </body>
</html>
```

(5 Marks)

(c)

- i. Explain, in detail, exactly what the following piece of code does.
- ii. Rewrite the piece of code as a scrollable list

```
<SELECT NAME="menu" onchange=
  "alert(this.options[this.selectedIndex].text);">
<OPTION SELECTED>One
<OPTION>Two
<OPTION>Three
<OPTION>Four
<OPTION>Five
</SELECT>
```

(5 marks)

(d)

- iii. Explain, in detail, exactly what the following piece of code does.
- iv. How would this piece of code be used?

```
Sub addButton_onClick()
Dim value
  value=InputBox("Enter an Integer", "Input Box", ,1000,1000)
  total=CInt(total)+CInt(value)
  Call MsgBox("You entered " & value & "; total so far is " &
    total, , "Results")
End Sub
```

(5 marks)

(e)

- v. Explain, in detail, exactly what the following pieces of code do.
- vi. These pieces of code use frames. Develop using HTML an appropriate frame structure and show where the pieces of code would reside.

```
<script language="JavaScript">
<!--
    function change2locs(url1, url2) {
        parent.topFrame.location = url1;
        parent.mainFrame.location = url2;
    }
// -->
</script>
...
<form>
    <input type="button" value="OptionB"
        onclick="change2locs('Top_b.htm', 'Detail_b.htm');">
</form>
```

(5 marks)

(f)

- vii. Explain, in detail, exactly what the following piece of code does.
- viii. Why would it be used?

```
<SCRIPT LANGUAGE="JavaScript">
<!--
var isNn, isIE;
if(parseInt(navigator.appVersion)>4){
    isNn=(navigator.appName=="Netscape");
    isIE=(navigator.appName.indexOf("Microsoft")!=-1)
}
//-->
</SCRIPT>
```

(5 marks)

## Section 1

2.

- (a) The Internet and World Wide Web are often considered to be the same thing. Explain why this is not the case by clearly outlining what the Internet is and what the World Wide Web is.

(5 marks)

(b)

- i. Explain what is meant by hypertext, hypermedia, HTML.
- ii. What is a browser? What function does it perform?
- iii. What are style sheets? What are the two ways they can be referenced by a document?
- iv. Explain **using a diagram** how a document that references external images or style sheets is downloaded in full.

(10 Marks)

- (c) You are responsible for DIT library. It is necessary for students to know what books are available at all times. You are required to make this information available over the Internet. Give two different mechanisms that could be used and state, giving reasons, your preference for one over the other.

(10 marks)

3.

- (a) Explain what is happening in the diagram below and why this would be used.



```
C:\WINNT\System32\command.com
Microsoft(R) Windows DOS
(C)Copyright Microsoft Corp 1990-1999.

C:\>ping www.dit.ie

Pinging ditweb.dit.ie [147.252.1.48] with 32 bytes of data:

Reply from 147.252.1.48: bytes=32 time=40ms TTL=62
Reply from 147.252.1.48: bytes=32 time=10ms TTL=62
Reply from 147.252.1.48: bytes=32 time=20ms TTL=62
Reply from 147.252.1.48: bytes=32 time=10ms TTL=62

Ping statistics for 147.252.1.48:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 10ms, Maximum = 40ms, Average = 20ms

C:\>
```

(3 marks)

(b)

- i. Give the HTML code to include a link to the DIT home page (<http://www.dit.ie/index.html>) in a document.

- ii. What change would need to be made if you wanted to link to the anchor named “Top” within the document?
- iii. With reference to the URL provided above, explain each of the different components, and the role DNS plays in locating the document.

(10 marks)

- (c) In designing a web site you are required to make a number of choices. You should organise your information in some structured manner. You should also provide a navigation scheme and a consistent page layout. Discuss how each of these tasks could be achieved, giving examples from your own web site, or any web site of your choice.

(12 marks)

## Section 2

4.

- (a) What is a scripting language? Explain what a client-side web scripting language is, giving examples.  
(5 marks)
- (b) Describe two things that a scripting language will allow you to do. Give examples of the scripting code needed to do each one.  
(12 marks)
- (c) What is a collection? Give two examples of collections, include JavaScript code to show how to use them.  
(8 marks)

5.

- (d) What is a cookie? Describe the structure and format of a cookie. Explain why a cookie is a useful client-side feature.  
(7 marks)
- (e) Develop a web page using JavaScript that will get the following information, using a form, from the user: first name, surname, date of birth, The web page should write these details to a cookie which is available to all pages in your web site and should not expire.  
(10 marks)
- (f) Describe how you would retrieve these details from the cookie, using JavaScript code to illustrate your answer.  
(8 marks)

6.

(a) Explain in detail what the Document Object Model is, using a diagram. What difficulties does a web developer face when using the DOM? Give one example.

(10 marks)

(b) Choose any object in the DOM, describe the capabilities of the object and give an example of how to script it.

(6 marks)

(a) Dynamic HTML (DHTML) is an amalgam of standards and technologies. Discuss this statement explaining the different standards and technologies that make up DHTML.

(9 marks)