NCC EDUCATION

INTERNATIONAL DIPLOMA
IN
COMPUTER STUDIES

WEB DESIGN

JUNE 2008 – Local Exam

MARKING SCHEME

Markers are advised that many answers in Marking Schemes are **examples only** of what we might expect from candidates. Unless a question **specifically states** that an answer is demanded in a particular form, then an answer that is correct, factually or in practical terms, must be given the available marks.

If there is doubt as to the correctness of an answer the relevant NCC Education textbook should be the first authority.

This Marking Scheme has been prepared as a guide only to markers. This is **ABSOLUTELY NOT** a set of model answers; **NOR** is the Marking Scheme exclusive, for there will frequently be alternative responses which will provide a valid answer.

Notice to Markers

Where markers award half marks in any part of a question they should ensure that the <u>total</u> mark recorded for a question is a whole mark.

Throughout the question, please credit any valid alternative point.

Marks

QUESTION 1   **4**

Distinguish between the World Wide Web and the Internet.

Answer   The Internet is a network of connected computers to share information [1] No company owns the Internet. It is a cooperative effort governed by a system of standards and rules [1]

The World Wide Web is just one of the ways information can be shared over the Internet. [1]It is unique in that it allows documents to be linked to one another using hypertext link thus forming a huge "web" of connected information. [1]

QUESTION 2

a)   Explain what is meant by a Web Server.   **2**

Answer   Web servers are also called HTTP servers. In order for a computer to be part of the Web, it must be running special web server software that allows it to handle Hypertext Transfer Protocol transactions. [2]

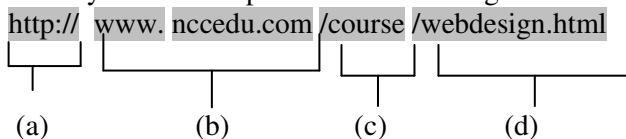**b)**   What is the HTTP protocol and why is it used?   **2**

Answer   Hypertext Transfer Protocol (HTTP) can be used to transfer images, movies, audio files, and all the other web resources that commonly make up web sites or are shared over the Web. [2]

QUESTION 3   **4**

Identify the various parts of the following URL:

http:// www. nccedu.com /course /webdesign.html

(a)   (b)   (c)   (d)

Answer   a) Protocol [1]
b) Domain name [1]
c) Path name [1]
d) File name [1]

QUESTION 4   **4**

Name FOUR common HTML coding errors that can be detected by validator software.

Answer   • *Mismatched tags [1]*
• *Nesting errors [1]*
• *DTD rule violations [1]*
• *The inclusion of required rules and attributes [1]*
• *An indication of the character encoding for the document [1]*
• *Non-standard elements [1]*
Any 4 points x 1 mark

QUESTION 5   **4**

What HTML tags would you use to create a selection list with a field named Module and with the options Web Design, Java and Networking?

Answer   <select name ="Module" id ="module"> [3 marks]
<option> Web Design </option>
<option> Java </option>
<option> Networking </option> [1 for option correctly tagged]

QUESTION 6 [4]

State FOUR reasons for integrating documents with cascading style sheets.

Answer   *a)*   *CSS is the official and standard mechanism for formatting text and page layouts [1]*
b)   *CSS provides methods for controlling how documents will be presented in media [1]*
c)   *CSS has rules for specifying non-visual presentation of documents [1]*
d)   *CSS is a great tool for automating production, because you can make changes to all the pages by editing a single style sheet documents [1]*

QUESTION 7 [4]

Describe the TWO methods used to send data from a form to a CGI script on the server and explain the circumstances when each method should or shouldn't be used.

Answer   *The post method – the browser sends a separate server request containing some special headers followed by the data. Only the server sees the content of this request [1]*

The Get method – the encoded form data gets tacked right onto the URL sent to the server. [1]

- *The GET is not appropriate for forms with private personal or financial information. [1]*
- *The POST method is preferable for sending a lot of data [1]*

QUESTION 8 [4]

What are the TWO main sections of an HTML file?

Answer   *HTML documents have a head and a body*

- *The head (header) of the document contains descriptive information about the document itself, such as title, and other meta information [2]*
- *The body contains the actual content that displays in the browser window [2]*

QUESTION 9 [4]

What does JPEG stand for? List THREE reasons for using the JPEG image format instead of the GIF format.

Answer   *JPEG stand for Joint Photographic Experts Group. [1]*

- *JPEG full-colour capacity and compression scheme make it the ideal choice for photographic images. [1]*
- *For image that contain more than 256 colours [1]*
- *When you need to reduce the file size through compression [1]*

QUESTION 10 [4]

Explain what a Document Type Definition (DTD) is, and list the three different DTDs in HTML/XHTML.

Answer   *Document Type Definition defines all of the elements and attributes in the language, as well as the rules for using them in HTML/XHTML document. [1]*

Three different DTDs for HTML:
- *Transitional DTD [1]*
- *Strict DTD [1]*
- *Frameset DTD [1]*

Total 40 Marks

QUESTION 1   **Marks**

a)   Identify the current level of support for cascading style sheets by leading browsers and briefly explain   **8**
         each level.

Answer   • *Nearly every browser in current use supports all of CSS level 1 and the majority of CSS*
             level 2 and some browsers are already supporting features from CSS level 3. [2]
         • *CSS 1:*
         • *CSS 1 includes properties for adding font, colour, and spacing instructions to page*
           elements. [2]
         • *CSS 2:*
         • *CSS2 builds upon CSS1 allowing all valid CSS1 style sheets to be valid in CSS2. It gives the*
           added flexibility of supporting media specific style sheets for visual browsers, printers,
           Braille devices, aural devices. [2]
         • *CSS 3:*
         • *It adds support for vertical text, improved handling of tables and international languages,*
           better integration with other XML technologies and other little perks like multiple
           background images in a single element and a larger list of colour names. [2]

b)   i)   Explain the difference between inline styles, embedded styles and external style sheets.   **6**
Answer   *Embedded style sheets*
         • *The style sheet is placed in the header of a document so that it applies just to the document.*
           This carries more influence than an external style sheet. [2]
         Inline style sheets
         • *It applies values and properties to an element using the style attribute in the element itself.*
           This carries the most influence of all the style properties as it is closest to the element. [2]
         External style sheets
         • *This is a style sheet in a separate text document that linked to a number of pages within*
           your website. This carries the least influence of three types. [2]

         ii) Which would you use to create a style for an entire web site?   **2**
Answer   *The style sheet recommended by W3C is the external style sheet. This offers the option of*
         changing the visual appearance of a site without changing the source HTML documents.

c)   i)   Write a CSS rule that makes all level 2 headings have text of font size 12 with a sans serif font and colour red.   **4**

Answer   *h2 [1] {font-size: 12pt; [1] font-family: sans-serif; [1] color: red [1]}*

     ii)   Write a CSS external style sheet file (content.css) that makes all text font size 12, sets the text font to Courier and colours the font red. Create a web page that includes some text, which references this external style sheet.   **6**

Answer   *Web page – html file*
<html>
<head>
<title> CSS external style sheet </title>
< link rel ="stylesheet" href = "content.css" type = "text/css" /> [3]
</head>
<body>
 Web design exam
</body>
</html>

CSS external style sheet file – content.css

Body {font-size: 12pt; font-family: courier; color: red } [3]

     iii)   Write a CSS rule for a stylesheet that creates a class called *imgleft* that will allow an image to be inserted into text and appear on the left with a margin of 10 pixels to the right and 15 pixels below.   **4**

Answer   *.imgleft [1] {float: left; [1] margin-right: 10px; [1] margin-bottom:15px; [1]}*

Total 30 Marks

QUESTION 2 **Marks**

a) Explain FIVE core disciplines involved in the web design process, along with brief descriptions of the skills required for each area. **10**

Answer   *Graphic design*
- *Because the web is a visual medium, web pages require attention to presentation and design. The graphic designer makes decision regarding everything you see on a web page: graphics, type, colours, layout, etc. a strong proficiency in Adobe photoshop is recommended. [2]*

   Information design
- *The organisation of content and how you get to it. Information designers deal with flow charts and diagram and may never touch a graphic or text file; they are a crucial part of the creation of the site. [2]*

   Interface design
- *Interface design focuses on how the page works. The concept of usability, how easily visitors can accomplish their goals on the site, as well as the general experience of using the site is a function of the interface design. [2]*

   Document Production
- *The team handles the creation of the files that makes up the web site may be called the development or production department.*
- *The people who handle production need to have an intricate knowledge of HTML and style sheets, and often additional scripting or programming skills. [2]*

   Scripting and programming
- *Advanced web functionality requires web scripts and sometimes special programs and application running behind the scenes. Web scripting and programming requires some traditional computer programming prowess. [2]*

   Multimedia
- *You can add multimedia elements to a site, including sound, video, animation and flash movies for interactivity. Multimedia developer must have good visual sensibility and an instinct for intuitive and creative multimedia design. [2]*

   Any 5 points x 2

b) Describe the impact of each of the following issues on Web design:

   i) Connection Speed **3**

Answer   *Consider who your audience is and how they will be connecting to your website. [1] The speed of their connection will impact how media-rich site can be. [1] Audience who do not have access to high speed Internet connections may find it difficult to download large files particularly graphics, audio, video and other multimedia. [1]*

   ii) Different Platforms **3**

Answer   *Difference in operating systems and platforms can also affect how your web page is viewed. [1] Standard fonts for one OS are not necessarily present in the same form or at all on other systems. [1] Don't' mimic a particular OS in your interface design. [1]*

   iii) Browser Version **3**

Answer   *Different browsers may display the same material in a variety of ways.[1] When building websites designers should use the current standards especially when using XHTML scripts. They then test them on major browsers. [2]*

   iv) Monitor Resolution **3**

Answer   *Browser windows can only be opened as large as the monitors displaying them, standard monitor resolution is useful in anticipating the likely dimensions of your page.[1] Most web pages should be written to fit within an 800x600 monitor. [1] Layout that are fixed to a set width, independent of that of the user's screen and user can change the dimension of the browser windows without losing content. [1]*

c) Identify FOUR types of web-related programming, markup and related languages that are widely used in developing web site. **8**

Answer   *HTML / XHTML*
- *The language used to create web page documents. [1]*
- *HTML is not a programming language; it is a mark-up language which means it is a system for identifying and describing the various components of a document such as headings, paragraphs, and lists. [1]*

CSS (Cascading Style Sheets)
- *CSS is the official and standard mechanism for formatting text and page layouts. [1]*
- *CSS also provides methods for controlling how documents will be presented in media other than the traditional browser on a screen, such as in print and on handheld devices. [1]*

JavaScript
- *JavaScript is a scripting language that is used to add interactivity and behaviours to web pages, including checking form entries for valid entries, swapping out styles for an element or an entire site and making the browser remember information about the user for the next time they visit. [2]*

XML
- *XML is a metalanguage for creating markup languages for information and data shared over the web or other networks [1]*
- *Authors can create custom markup language that suit any sort of information. [1]*

Total 30 Marks

QUESTION 3

Marks

a) Name FOUR commonly supported form controls.

4

Answer
- ***Text entry fields [1]***
- ***Buttons [1]***
- ***Menus [1]***
- ***Hidden data [1]***

b) What does the action attribute in the <form> element contain?

2

Answer
- ***The URL of the application that processes the form data; [1] this URL usually points to a CGI script file [1]***

c) Write the HTML code that produces the following Web page.

15

```
Please fill up this form

First name: [            ]     Last name: [            ]

sex:  ○ Male  ○ Female

hobbies: ☐ Travelling ☐ Reading ☐ Swimming

[ Send ] [ Reset ]
```

Answer

```
<form>  [1/2]

Please fill up this form [1]
<br> <br> [1]

First name:  <input type="text" name="firstname">  [1]
Last name:   <input type="text" name="lastname">   [1]
<br> <br> [1]

sex: [1/2]
<input type="radio" name="sex" value="male">  Male [1]
<input type="radio" name="sex" value="female"> Female [1]
<br> <br> [1]

hobbies: [1/2]
<input type="checkbox" name="hobbies" value="travelling" />
Travelling [1]
<input type="checkbox" name="hobbies" value="Reading" /> Reading [1]
<input type="checkbox" name="hobbies" value="Swimming" /> Swimming
[1]

<br> <br> [1]

<input type="submit" value="Send"> [1]
<input type="reset" value="Reset"> [1]
</form> [1/2]
[Accept other formatting methods instead of <br><br>]
```

d) Differentiate between a relative URL and an absolute URL. Give an example of each to illustrate your answer. **6**

Answer *Relative URL*

- *When linking to a page within your site server, relative URLs are used. [1]*
- *For example if linking to page2.html of your site just use the pathname: href="page2.html" [2]*
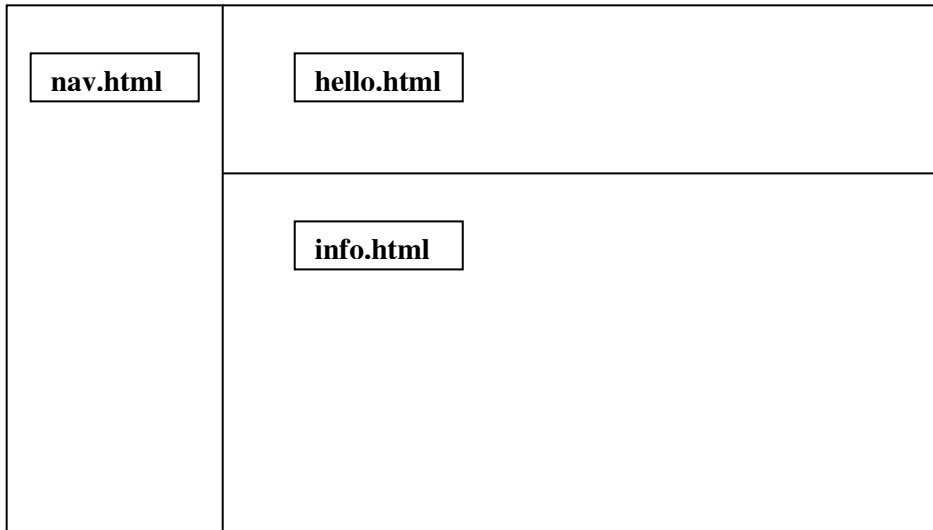
   Absolute URL

- *When linking to pages or sites external to your site server absolute URLs are used. [1]*
- *For example, when linking to www.nccedu.com include the full protocol and path to the page. href=http://www.nccedu.com/ [2]*
-

e) Sketch the layout produced by the following code. Assume that the pages being imported are blank with white backgrounds and that the dimensions of the screen are 800 by 600. Use approximate dimensions in your sketch. **3**

```
<HTML>
<HEAD>
<TITLE> WEB DESIGN SYLLABUS </TITLE>
</HEAD>
<FRAMESET COLS ="110,*">
<FRAME SRC ="nav.html" NAME ="nav">
  <FRAMESET ROWS = "175,*">
  <FRAME SRC ="hello.html" NAME="hello">
  <FRAME SRC ="info.html" NAME="information">
  </FRAMESET>
</FRAMESET>
</HTML>
```

Answer

Total 30 Marks

Section A	L/O 1	L/O 3	L/O 4	L/O 5	Page reference
Q1	4				19
Q2	4				20
Q3	4				22
Q4		4			177
Q5			4		159
Q6		4			10
Q7		4			146
Q8		4			58
Q9				4	362
Q10		4			167
Section B					
Q1 a)		8			188
Q1 c)		8			193
Q1 d) i)		4			190
Q1 d) ii)		6			255
Q1 d) iii)		4			275
Q2 a)	10				5
Q2 b) i)	3				39
Q2 b) ii)	3				38
Q2 b) iii)	3				29
Q2 b) iv)	3				40
Q2 c)	8				9
Q3 a)			4		143
Q3 b)			2		146
Q3 c)			15		150
Q3 d)			6		96
Q3 e)			3		Lecturer guide Session 8 – page 4
Total A	12	20	4	4	
Total B	30	30	30		
A + B	42	50	34	4	