



Designing and Developing a Website

December 2015

Sample Examination Paper

Answer ALL questions.

Clearly cross out surplus answers.

Time: 3 hours

The maximum mark for this paper is 100.

Any reference material brought into the examination room must be handed to the invigilator before the start of the examination.

Answer ALL questions

Marks

Question 1

- a) i) What is the role of the W3C (World Wide Web Consortium)? 2
ii) Provide TWO (2) reasons why web standards are important. 2
- b) Designing a website for mobile devices raises particular issues. State TWO (2) issues that must be considered when designing a website for mobile devices. 2
- c) i) Explain the difference between accessibility and usability. 2
ii) State TWO (2) reasons why accessibility is an important consideration in website design. 2

Total: 10 Marks

Question 2

- a) Explain the purpose of HyperText Markup Language (HTML) 2
- b) Consider the following HTML code fragment:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en" xml:lang="en" >
<head>
  <title>This is an example of a simple XHTML document</title>
  <meta http-equiv="content-type" content="text/html; charset=utf-8" />
</head>
<body>
  <h1>Welcome to <em>HTML</h1></em>
  <p>The purpose of this page is to illustrate a basic XHTML document</p>
</body>
</html>
```

Identify each of the elements below **and** explain the purpose of each element. In **each** case, state the code fragment to illustrate your answer **and** explain any attributes within the element.

- i) Document type declaration 2
ii) Root element 2
iii) Head element 2
- c) Explain the purpose of Nesting in HTML. Identify ONE (1) issue with the use of nesting in the code fragment in b) above. 2

Total: 10 Marks

Questions continue on next page

Question 3

- a) i) Explain the purpose of CSS (Cascading Style Sheets). 1
- ii) Identify THREE (3) different ways of applying CSS to a webpage. 3

b) Consider the following HTML fragment:

```
<style>
li{
color:red;
}
ol .extra
{
font-family:Arial;
}
.extra{
background-color:green;
}
</style>
<body>
<ol>
<li class="extra">Beta</li>
<li>Alpha</li>
</ol>
<ul>
<li style="color:black">Delta</li>
<li class="extra">Gamma</li>
</ul>
```

Describe the appearance of each part of the text as below:

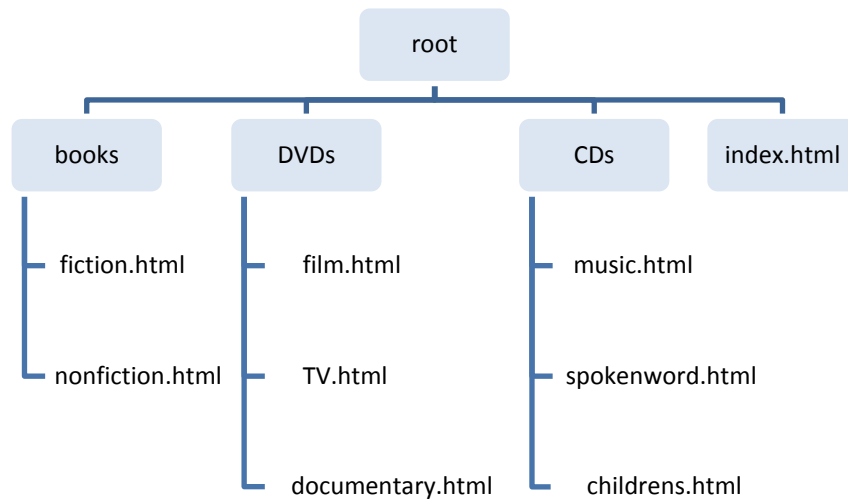
- i) Alpha 1
 - ii) Beta 1
 - iii) Gamma 1
 - iv) Delta 1
- c) CSS can be used to support accessibility. Provide TWO (2) ways of how CSS can be used to help with accessibility. 2

Total: 10 Marks

Questions continue on next page

Question 4

a) Consider the following website structure:



- i) A hyperlink in the page *documentary.html* links to the page *childrens.html*. What will be the value of the *href* attribute for this hyperlink? 1
 - ii) A hyperlink in the page *nonfiction.html* links to the page *index.html*. What will be the value of the *href* attribute for this hyperlink? 1
 - iii) A hyperlink in the page *TV.html* links to the page *film.html*. What will be the value of the *href* attribute for this hyperlink? 1
 - iv) A hyperlink in the page *index.html* links to the page *fiction.html*. What will be the value of the *href* attribute for this hyperlink? 1
- b)
- i) Explain the purpose of skip links. 2
 - ii) Explain the purpose of access keys. 2
 - ii) Access keys suffer from a number of problems. Provide TWO (2) examples of problems which access keys may suffer from. 2

Total: 10 Marks

Questions continue on next page

Question 5

- a) Web browsers support image file formats including PNG, GIF and JPEG. The following images need to be saved in an appropriate file format for display within a web page.

Which file format would you suggest be used to store the images shown below?
In each case briefly explain your reasons for suggesting that particular file format.

- i) A photograph of a brightly coloured bird **2**
- ii) A map of a railway network showing all possible routes between two cities.. **2**

- b) Video and audio are now accepted and important parts of the web. However, its use raises a number of issues for web designers.

- i) State TWO (2) issues which are raised by the use of audio or video. For **each** issue you raise, suggest ONE (1) solution that might be used to address the issue. **4**
- ii) What are the particular issues of using media (video and audio) on a mobile device? **2**

Total: 10 Marks

Questions continue on next page

Question 6

- a) Identify THREE (3) HTML features that can be used to enhance the accessibility of tables. For each feature, suggest ONE (1) way of how it enhances responsibility. **6**
- b) Explain the purpose of the *colspan* and *rowspan* attributes. **2**
- c) Consider the following HTML code fragment, which uses the *float* property for layout. Sketch out how the text will appear when rendered in a browser. **2**

```
<html> <head> <style>
span {
  float: left;
  font-size: 400%;
  font-family: arial;
}
</style> </head>
<body>
<p>
<span>T</span>his is some text.
This is some text. This is some text.
This is some text. This is some text. This is some text.
This is some text. This is some text. This is some text.
This is some text. This is some text. This is some text.
This is some text. This is some text. This is some text.
This is some text.
</p>
</body>
</html>
```

Total: 10 Marks

Questions continue on next page

Question 7

a) Consider the following HTML and CSS fragment

6

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html>
<html>
<head>
<style>
div{
outline:1px solid black;
}

#block1{
position:absolute;
top:250px;
left:200px;
height:10px;
width:50px;
}

#block2{
position:absolute;
top:150px;
left:100px;
height:100px;
width:100px;
}

#block3{
position:absolute;
top:0px;
left:50px;
height:50px;
width:100px;
}
</style>
</head>

<body>
<div id="block1">Box1</div>
<div id="block2">Box2<div id="block3">Box3</div></div>
</body>
</html>

```

Draw a diagram showing how the page will appear when rendered in a browser.

b) When designing a website, using CSS to control page layout, a designer will usually follow a process. Explain the process you would follow when controlling page layout with CSS, as a series of steps.

4

Total: 10 Marks

Questions continue on next page

Question 8

- a) Business to Consumer (B2C) is one model that is widely used for eCommerce. Identify THREE (3) other models used for eCommerce. You should provide ONE (1) example of a type of online business that fits each model that you identify. 6
- b) Briefly explain what is meant by *user-centred web design*. 2
- c) Briefly explain what is meant by a *persona* in terms of web design **and** outline its purpose. 2

Total: 10 Marks

Question 9

- a) The process of web design can be thought of as a three stage process: (1) Research; (2) Design; and (3) Implementation.
 - i) State TWO (2) processes or actions involved in each of the following stages listed above. 6
 - ii) Where does testing and evaluation fit within the above process? 1
- b) Explain what is meant by *breadcrumb navigation* **and** state TWO (2) advantages of its use. 3

Total: 10 Marks

Question 10

- a) State TWO (2) advantages that are offered by usability testing. 2
- b) It is important to test the accessibility of a web site before releasing it for use. State TWO (2) ways in which a web designer might test the accessibility of a web site. 2
- c) Krug's Trunk Test tests to see if site navigation is well designed. Identify SIX (6) areas that are covered by the Trunk Test. For each area, you should suggest a question that should be asked by a user. 6

Total: 10 Marks

End of Examination Paper