



DUBLIN INSTITUTE OF TECHNOLOGY

DT265A/1 Higher Diploma in Computing
DT265C/1 Masters Qualifier for MSc in Computing
DT8900/1 International Pre Masters for MSc in
Computing

WINTER EXAMINATIONS 2017/2018

WEB & USER INTERFACE DESIGN [CMPU4063]

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FRIDAY 12TH JANUARY 2.00 P.M. – 4.00 P.M.

TWO HOURS

INSTRUCTIONS TO CANDIDATES

Answer question (1) and any two of questions (2), (3), (4)

Question (1) is worth 40 marks.

Questions (2), (3), (4) are worth 30 marks each

1. (a) i. What is the correct HTML code for referring to an external style sheet?
(3 marks)
- ii. Where in an HTML document is the correct place to refer to an external style sheet?
(3 marks)
- iii. Write the relevant CSS code for the following situation – if the browser window is smaller than 500px, the background colour will change to “lightblue”.
(6 marks)
- (b) What are **three** techniques which would improve the *speed* of a website?
(9 marks)
- (c) i. What is the meaning of *automatic processing*?
(3 marks)
- ii. How is automatic processing relevant to user interface design?
(4 marks)
- (d) i. Why have new *structural tags* been introduced in HTML5?
(4 marks)
- ii. Name **four** new HTML5 structural tags and describe their use.
(8 marks)

2. (a)
- i. Describe the *constructivist* learning theory, using examples to support your answer. (6 marks)
 - ii. Provide **two** methods of implementing a constructivist theory in an interface. (4 marks)
 - iii. Describe the *behaviourist* learning theory, using examples to support your answer. (6 marks)
 - iv. Provide **two** methods of implementing a behaviourist theory in an interface. (4 marks)
- (b)
- i. What are the advantages and disadvantages of using *grids* in web design. (6 marks)
 - ii. Describe **two** grid principles that can be used in web design. (4 marks)

3. (a)
- i. What CSS code is required to display a border with the following attributes:
 - Top border = 10 pixels
 - Bottom border = 5 pixels
 - Left border = 20 pixels
 - Right border = 1 pixel(5 marks)
 - ii. Write the CSS code which will set the background colour for visited and unvisited links to "lightblue", and the background colour for the hover and active link states to "yellow". (5 marks)
 - iii. Write the CSS code which gives a <div> element rounded corners. (5 marks)
 - iv. Write the CSS code which changes the colour of all <p> elements, that are descendants of <div> elements, to "red". (5 marks)
- (b) Write the JavaScript function, **js_style()**, which changes the font to *Arial*, font size to *14px*, and colour of the paragraph text of the HTML file below to *green*, when the button is clicked.

Sample HTML file :

```
<!DOCTYPE html>
<html>
<head>
<meta charset=utf-8 />
<title>JS DOM paragraph style</title>
</head>
<body>
<p id ='text'>JavaScript Exercise</p>
<div>
<button id="jsstyle"
onclick="js_style()">Style</button>
</div>
</body>
</html>
```

(10 marks)

4. (a)

- i. Describe **three** advantages to using a *low fidelity prototype* as a design tool.
(6 marks)
- ii. Discuss the terms *horizontal prototype* and *vertical prototype* with regards to user interface design.
(8 marks)

(b)

- i. What **four** values can the *position* attribute have? Use code to support your answer.
(12 marks)
- ii. What CSS attribute should be used so that the image (w3css.gif) in the HTML page below sits behind the text?
(4 marks)

```
<!DOCTYPE html>
<html>
<head>
<style>
img {
    position: absolute;
    left: 0px;
    top: 0px;
}
</style>
</head>
<body>

<h1>This is a heading</h1>


</body>
</html>
```