

THE UNIVERSITY OF AUCKLAND

SUMMER SEMESTER, 2011
 COMPUTER SCIENCE
 Mastering Cyberspace:
 An Introduction to Practical Computing

TEST
 (Time allowed: 60 MINUTES)

Surname:	
First Name(s):	
Student ID number:	
Login name (UPI):	

INSTRUCTIONS:

- Attempt **ALL** questions - write your answers in the box provided
- Calculators are **NOT** permitted

Question	Mark
Digital, Hardware, Software	(/25)
Internet	(/25)
XHTML and CSS	(/25)
Applications and Graphics	(/15)
Presentation	(/10)

TOTAL:

(/100)

Digital Information, Hardware and Software (25 marks)

1. Define the Computer Science term **bit**.

(2 marks)

2. Storing information:

(a) How many different values can be represented in 1 bit?

(2 marks)

(b) What decimal number is equivalent to the binary number 110110?

(2 marks)

(c) What binary number is equivalent to the decimal number 22?

(2 marks)

(d) How many bytes are there in 2 KiB?

(2 marks)

3. What does CPU stand for?

(2 marks)

4. What does the CPU do?

(2 marks)

5. Name **two** types of connectors used to connect computers with external devices.

1)

2)

(2 marks)

6. What is an operating system and what is it responsible for?

(3 marks)

7. Name **two** examples of operating systems.

1)

2)

(2 marks)

8. Name **two** file extensions (*for example, .exe*) for **each** of the following file formats:

(a) **Two** file extensions for **graphics** files:

(b) **Two** file extensions for **video** files:

(4 marks)

Internet (25 marks)

9. How is the Internet different from the traditional (telephone) network?

(2 marks)

10. Name **three** essential elements of the Internet's infrastructure.

1)

2)

3)

(3 marks)

11. What does DNS stand for and what does it do?

(3 marks)

12. What is the difference between the TCP/IP protocol and the UDP protocol in terms of **transmission speed** and **reliability**?

(4 marks)

13. Given the email address `teacher@aucklanduni.ac.nz`, which letters describe the local part of the address, and which letters describe the domain?

Local part:

Domain:

(2 marks)

14. When an email is sent, is the DNS server part of the sending process? If so, what is the DNS server's responsibility?

(2 marks)

15. What does Netiquette mean and why is it important?

(2 marks)

16. Name **two** different types of blogs.

1)

2)

(2 marks)

17. What is a Web Server?

(2 marks)

18. Name **three** instances which keep a log when a web page is accessed?

1)

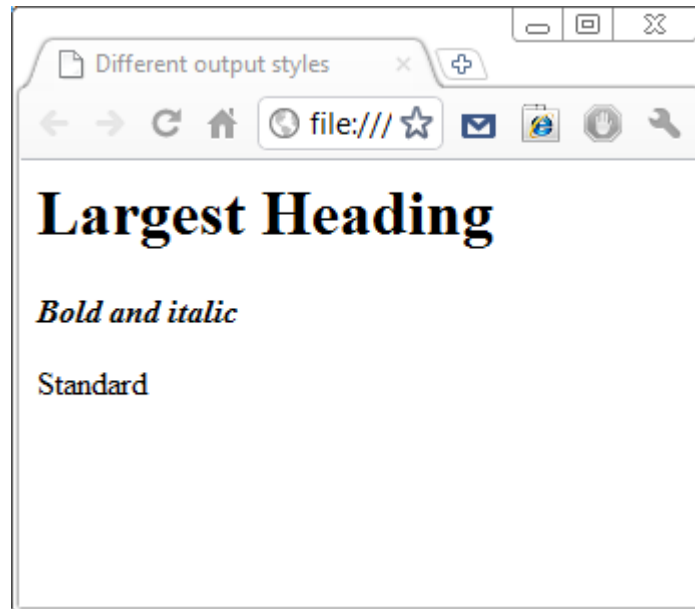
2)

3)

(3 marks)

XHTML and CSS (25 marks)

19. The following screenshot shows a web page created using XHTML 1.0 and CSS. Complete the source code below that would result in the web page shown below. You **must** use the style rules provided in the internal style sheet and must not add any new styles.



```
<?xml version="1.0" encoding="utf-8"?>
<!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" xml:lang="en" lang="en">
  <head>
    <title>Different output styles</title>
    <style type="text/css">
      .heavy {font-weight:bold;}
      #important {font-style:italic;}
    </style>
  </head>
  <body>

    </body>
</html>
```

(6 marks)

20. In the following piece of XHTML 1.0 code, circle each error and write the correction in the line immediately underneath the error.

```
<body>
  <h1>Test</h2>
  <p>This is an <rb/ > example of XHTML code used in a web page</q>
  <ol>
    <il> item 1
  </ol>
</body>
```

(5 marks)

21. What are nested tags? Provide **one** example of nested tags.

(2 marks)

22. Define an XHTML CSS style rule that makes **all** level 2 headings **centred** and coloured **blue**.

(3 marks)

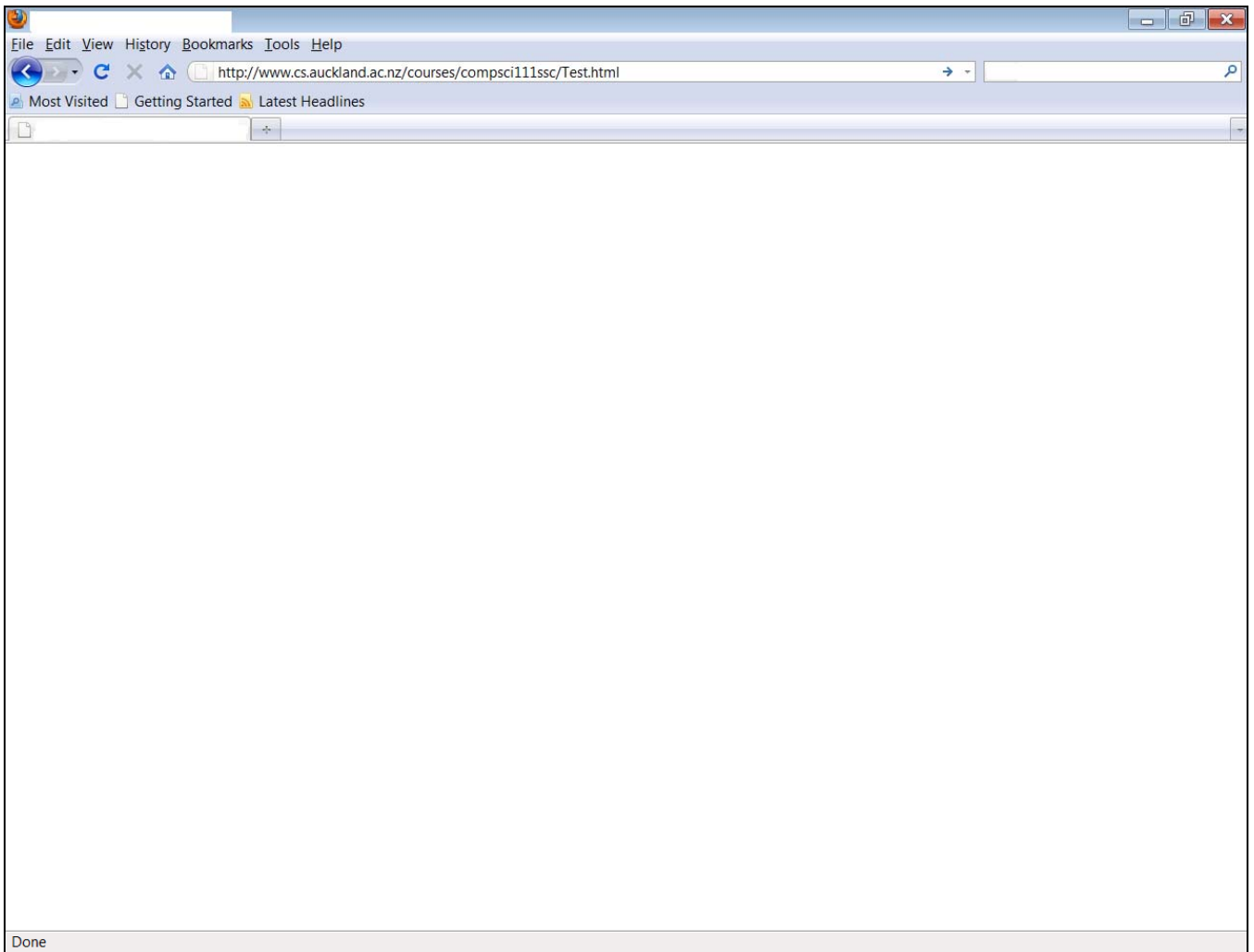
23. What does HTML stand for?

(1 mark)

24. The following web page has been successfully validated as XHTML 1.0 Strict. On the following page, draw what the page will look like when it is displayed by a web browser.

```
<?xml version="1.0" encoding="utf-8"?>
<!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" xml:lang="en" lang="en">
<head>
  <title>Test</title>
  <style type="text/css">
    #quote { text-transform:uppercase; }
    .quote { font-style:italic; }
    h2 { text-align: center; }
  </style>
</head>
<body>
  <div id = "quote">
    <h1>The University of Auckland</h1>
    <h2>111 Test</h2>
  </div>
  <ul>
    <li>You must answer all questions in this test.</li>
    <li>Good luck!</li>
  </ul>
  <p>Time Allowed: <span class="quote">One hour</span> </p>
</body>
</html>
```


ID Number



(8 marks)

Applications and Graphics (15 marks)

25. What is PostScript, and what is it used for?

(2 marks)

26. How many **bytes** are required for a 4 colour image 20 pixels wide and 40 pixels high? Show **all** your working.

(3 marks)

27. Name **one** compression algorithm, explain its basic characteristics and state how appropriate it is for **photos** and/or for **graphics**.

(a) Name of one compression algorithm:

(b) Appropriateness of this compression algorithm for photos:

(c) Appropriateness of this compression algorithm for graphics:

(4 marks)

28. List **two** advantages of vector graphics.

1)

2)

(2 marks)

29. What is the ASCII system used for?

(2 marks)

30. What is the difference between a text editor and a word processor?

(2 marks)

Presentation (PowerPoint and Web) (10 marks)

31. State **two** benefits of using PowerPoint.

1)
2)

(2 marks)

32. If you were asked to prepare a **20 minute** PowerPoint presentation, as an approximate guide, what is the maximum number of slides your presentation should contain?

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(2 marks)

33. What is a master slide in PowerPoint?

--

(2 marks)

34. In regard to web site design, what is the 3-click rule?

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(2 marks)

35. Who wrote the article “PowerPoint is Evil”?

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(2 marks)

ID Number

OVERFLOW PAGE

(If you have used this page, please indicate clearly under the relevant question that you have overflowed to this page)

ID Number

OVERFLOW PAGE

(If you have used this page, please indicate clearly under the relevant question that you have overflowed to this page)

ID Number

ROUGH WORKING

(You may detach this sheet from the test script and use it for working.

This sheet will not be marked)

ID Number

ROUGH WORKING

(You may detach this sheet from the test script and use it for working.
This sheet will not be marked)