

THE UNIVERSITY OF AUCKLAND

FIRST SEMESTER, 2007
 COMPUTER SCIENCE
 Mastering Cyberspace: An Introduction to
 Practical Computing

TEST Sample Answers
 (Time allowed: 60 MINUTES)

Surname:	Sample Answers
Forenames:	
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	(/30)
XHTML and CSS	(/25)
Presentation	(/10)
Applications	(/10)

TOTAL:

(/100)

Digital Information, Hardware and Software (25 marks)

1. What is a bit? How many bits are there in a byte?

A bit is a binary digit (0 or 1).

There are 8 bits in a byte.

(2 marks)

2. Storing information:

(i) How many numbers can be represented in 10 bits?

$2^{10} = 1024$ numbers

(2 marks)

(ii) Write down the relationship between KB, MB, and GB in terms of the decimal system.

1MB = 1000KB

1GB = 1000MB

(2 marks)

(iii) Which stores more information, 10 KB or 10 KiB?

10 KiB

(2 marks)

3. Given that a piece of hardware stored exactly 3 GiB of information, what component would it most likely be?

Most likely to be RAM or Flash Drive.

(2 marks)

4. Give two examples of application software.

Spreadsheets, Word Processors, Text Editors, etc.
e.g. MS-Excel, MS-Word, Latex, etc.

(2 marks)

5. Give two examples of system software.

Operating Systems, e.g. Windows-XP or Linux.
Device drivers
Compilers, etc.

(2 marks)

6. Where is the CPU located? What does the CPU do?

The CPU is located on the Motherboard.

The CPU is the "brain" of the Computer. It reads and follows the instructions that make up a program. It also does any calculations required, and controls the rest of the computer system.

(4 marks)

7. What is open source software?

Open source software is:

Free Software:

Freedom to use and study the work

Freedom to copy and share the work with others

Freedom to change the work

Freedom to distribute changed and therefore derivative works.

(4 marks)

8. Write down *three* of the stages involved in large software design.

1. Establishing requirements.
2. Writing specifications
3. Design process.
4. Software construction.
5. Testing.
6. Maintenance.

(3 marks)

Internet (30 marks)

9. State the name of a protocol used on the Internet and what the protocol is used for.

(i) State the name of a protocol.

TCP/IP - also HTTP, FTP, etc.

(2 marks)

(ii) State what the protocol is used for.

TCP is used to divide messages into packets, check all packets arrive, and combine the packets to reform the message.
IP is used for addressing (e.g. 130.316.34.102) and routing information

(2 marks)

10. What does DNS stand for? What is the role of the DNS?

DNS stands for Domain Name Server.

The role of the DNS is to translate domain names into IP Addresses.

(4 marks)

11. Put the following historical events into chronological order (i.e. arrange the events in order with the earlier events listed before later events).

- WWW created
- ARPAnet created
- Sputnik launched
- Development of TCP/IP
- DNS created

1. Sputnik launched
2. ARPAnet created
3. Development of TCP/IP
4. DNS created
5. WWW created

(5 marks)

12. Give an example of an asynchronous electronic communication system.

Email, Forums, etc.

(2 marks)

13. Give an example of a synchronous electronic communication system.

Chat, MSN Messenger, etc.

(2 marks)

14. Name three protocols used by email systems to send or receive messages.

SMTP

POP3

IMAP

(3 marks)

15. Write down *two* differences between blogs and wikis.

Blogs: Chronological, Text is mostly static, Personal Diary

Wikis: Not necessarily chronological, text not static,
Collaborative

(2 marks)

16. What is the difference between the Internet and the WWW?

WWW is a network within the Internet that comprises a constellation of networked resources. The Internet servers utilize HTTP to transfer documents and multimedia files formatted in hypertext markup language (HTML).

(2 marks)

17. Who founded the WWW?

Tim Berners-Lee

(2 marks)

18. What does URL stand for? What is a URL?

Uniform Resource Locator

A URL is the address of an Internet resource.

A URL is structured as follows:

Protocol, e.g. ftp:// or http://

Domain (the name of the host computer, e.g.

www.cs.auckland.ac.nz)

File/Resource: Path of the file, e.g. /test/index.html

(2 marks)

19. What does WWW stand for?

World Wide Web

(2 marks)

XHTML and CSS (25 marks)

20. What is the correct nesting of the following essential XHTML tags?

```
<body> </body> <title> </title> <html> </html> <head> </head>
```

```
<html>
<head>
<title> the title </title>
<body>

</body>
</html>
```

(4 marks)

21. What is wrong with the following piece of XHTML?

```
<body>
<h1>Examples</h1>
<p>This is an <i>example of XHTML code used in a web page</p>
<h2> 2nd Example</h2>
<p>This is a second example of XHTML code</p>
</body>
```

```
</i> is missing
```

(2 marks)

22. If a hypertext link was made to a web page called **test.html** that was stored in the **/courses/compsc111/** directory of the **www.cs.auckland.ac.nz** web server, what would be the correct href file location?

```
<a href="http://www.cs.auckland.ac.nz/courses/compsc111/test.html">link to test</a>
```

(3 marks)

23. If a hypertext link was made from **test.html** in the previous question to a page called **answers.html** that was stored in the **/courses/compsc111/** directory of the **www.cs.auckland.ac.nz** web server what would be the correct *relative* href file location?

```
<a href="answers.html">link to answers</a>
```

(2 marks)

24. Write the XHTML code for the following simple table.

Cell One	Cell Two
----------	----------

```
<table border = "1">
<tr>
<td>Cell One</td>
<td>Cell Two</td>
</tr>
</table>
```

(6 marks)

25. Define an XHTML CSS style rule that makes all 1st level headings aligned centrally on the page and in italics.

```
h1 {
  text-align: center;
  font-style: italic;
}
```

(2 marks)

26. Extend the style rule above to apply to the 2nd level heading as well.

```
h1, h2 {
  text-align: center;
  font-style: italic;
}
```

(2 marks)

27. Styles can be applied by **Browser default**, **Inline style**, **External style sheet** and **Internal style sheet** rules. Place these four items in order of decreasing priority (highest to lowest):

- | | |
|--------------------------------|------------------|
| 1. Inline style | Highest Priority |
| 2. Internal style sheet | |
| 3. External style sheet | |
| 4. Browser default | Lowest Priority |

(4 marks)

Presentation (10 marks)

28. If you were asked to prepare a 5 minute PowerPoint presentation, as an approximate guide, what is the maximum number of slides your presentation should contain?

10 maximum but probably between 5 & 10

(2 marks)

29. The following PowerPoint slide contains a number of poor design decisions. State the three aspects of the slide design that you think are the worst.



(i)

Some fonts are too small

(2 marks)

(ii)

The font colours are similar to the background, they don't contrast well

(2 marks)

(iii)

Complex font style of main heading, hard to read

(2 marks)

30. Explain why design should be kept simple for both PowerPoint presentations and web pages.

Simple designs do not distract from the content of the information on the slide or web page.

(2 marks)

Applications (10 marks)

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

A text editor can only edit plain text, whereas a word processor can apply different formatting styles, insert pictures and tables, etc., check spelling and grammar, etc. A word processor is an extension of a text editor.

(2 marks)

32. What is postscript language and what is it used for?

Postscript is a language used by laser printers. It tells the printer how and where to display text.

(2 marks)

33. List two advantages of using user defined styles in MS-Word.

1. Consistency
2. Saves time

(2 marks)

34. What is the ASCII system used for?

American Standard Code for Information Interchange.

ASCII is a code used to represent English characters as numbers.

(2 marks)

35. Given that the ASCII code for the letter 'N' is 78 and the ASCII code for the letter 'a' is 97, what are the codes required to represent the word "Mad"?

77 97 100

(2 marks)