THE UNIVERSITY OF AUCKLAND

SUMMER SEMESTER, 2009
COMPUTER SCIENCE
Mastering Cyberspace:
An Introduction to Practical Computing

TEST
(Time allowed: 60 MINUTES)

Surname:	**Sample**
Forenames:	**Answers**
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)

ID Number ....

Digital Information, Hardware and Software (25 marks)

1. What is the difference between the decimal number system and the binary number system?

- Decimal number system has ten as its base (i.e. digits range from 0 to 9)

- Binary number system has two as its base (i.e. digits are 0 and 1)

(2 marks)

2. Storing information:

(i) How many different numbers can be represented in 3 bits?

2^3 = 8 different numbers

(2 marks)

(ii) What decimal number is equivalent to the binary number 10011?

1 + 2 + 16 = 19

(2 marks)

(iii) What binary number is equivalent to the decimal number 15?

1111

(2 marks)

3. What is RAID?

- Redundant Array of Disks
- Uses multiple hard disks (at least two)
- reads and writes in parallel
- Write additional information to prevent lost data
- Fast, cheap and reliable

(2 marks)

4. Name **two** pieces of hardware which can store at least 25 GB of information.

1) Hard disk drive, Blue Ray disk

2) USB stick

(2 marks)

5. What is shareware?

- software which is constrained in some way

 - Trial period offered
        Purchase the licence and upgrade to commercial version
- Nagware
        Reminder messages to license software
- Crippleware
         Software lacks the advanced features until licensed

(3 marks)

6. What does Moore's Law state?

- Number of transistors on a single chip doubles every 18 months, while the price remains the same.

(3 marks)

7. What is a motherboard?

- Main circuit board for the computer
- Everything else connects to the motherboard

(3 marks)

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

graphics file extension: JPEG, GIF, PNG

sound file extension: MP3, WMA

text file extension: TXT, DOC, DOCX

video file extension: MPEG, DIVX, AVI

(4 marks)

ID Number ....

Internet (30 marks)

9. Name **four** common internet protocols.

1) TCP/IP

2) UDP

3) FTP

4) HTTP

(4 marks)

10. What does ISP stand for?   What does an ISP do?

- ISP stands for Internet Service Provider
- Provides an Internet connection for you
        - Sets up an account for you
        - Space set aside on their server
        - Modem pool allows you to connect
        - Gives you an IP address

(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).

   (a) WWW created
   (b) First successful transmission of digital data through telephone lines
   (c) Foundation of the Advanced Research Project Agency (ARPA)
   (d) Domain Name System created
   (e) First successful bi-directional transmission of clear speech

1) First successful bi-directional transmission of clear speech

2) First successful transmission of digital data through telephone line

3) Foundation of the Advanced Research Project Agency (ARPA)

4) Domain Name System created

5) WWW created

(5 marks)

ID Number ....

12. What is the difference between a **synchronous** electronic communication system and an **asynchronous** electronic communication system? Give **one** example of each system.

- In an asynchronous system, e.g. email, messages are sent and received later

- In a synchronous system, e.g. instant messaging, messages are sent and received immediately in real time

(4 marks)

13. What is spam?

- Advertising emails, named after canned meat
- Unsolicited, bulk email (message maybe send to thousands of people)
- Usually advertises a commercial product, a website, stock exchange shares, etc.

(2 marks)

14. What is a moderator in the context of an electronic forum?

- Administrator with ability to edit, delete, move messages

(2 marks)

15. State **two** advantages and **two** disadvantages of wikis.

Advantages:
1) Creates a central pool of content, everyone can contribute

2) Easy to use, quick to develop material

Disadvantages:
1) No quality control, anyone can contribute information

2) Changes rapidly, vandalism a possibility

(4 marks)

16. Given the URL: `http://www.scl.ec.auckland.ac.nz/content.html`, which letters describe the protocol, domain and file/resource?

Protocol: http

Domain: www.scl.ec.auckland.ac.nz

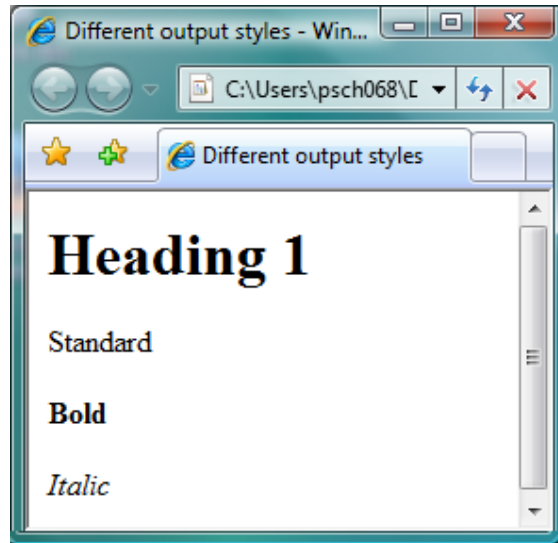File/Resource: content.html

(3 marks)

17. What is a Proxy?

- A computer which sits between the client and server, intercepts and processes requests

(2 marks)

XHTML and CSS (25 marks)

18. 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.


```
<?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>
<head>
<title>Different output styles</title>
<style type="text/css">
.heavy {font-weight:bold;}
#important {font-style:italic;}
</style>
</head>
<body>

<h1>Heading 1</h1>

<p>Standard</p>

<p class = "heavy">Bold</p>

<p id = "important">Italic</p>




</body>
</html>
```

(6 marks)

ID Number ....

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

```
<body>

<h2>Test</h3>
        </h2>
<p>This is an <br/> example of XHTML code used in a web page</p>

<lo>
<ol>
<li> item 1
            </li>
<li> item 2
            </li>
</lo>
</ol>
</body>
```

(5 marks)

20. Give **one** example of a fully specified URL and **one** example of a relative URL.

Fully Specified URL:
http://www.cs.auckland.ac.nz/compsci111ssc/exams/Test2009SS.html

Relative URL:
Test2000SS.html

(2 marks)

21. Associate each of the following three descriptors with the correct segment of the given style rule.

Descriptors: Selector, Property, Value
Style Rule: h3 { text-align: center; }

Selector: h3

Property: text-align

Value: center

(3 marks)

22. Define an XHTML CSS style rule that makes **all** 1st level headings aligned right on the page with a background color of gray.

h1
{
text-align: right;
background-color: gray;
}

(3 marks)

23. Suppose that in an **external style sheet** we have the style rule:

```
p
{
text-align: center;
color: blue;
font-style: italic;
text-decoration: underline;
background-color: light-blue;
}
```

while in the head of our XHTML document we have the following **internal style sheet**:

```
<style type = "text/css">
p
{
text-align: center;
font-weight: bold;
}
</style>
```

then the following XHTML code in the body of the document will produce a paragraph with what type of text?

```
<p style="color: green; text-align: right;">
What a strange paragraph!</p>
```

- text-align: right
- color: green
- font-weight: bold
- background-color: light-blue
- text-decoration: underline
- font-style: italic

(6 marks)

ID Number ....

Presentation (10 marks)

24. The content is less important than the presentation itself. Is the previous statement correct? Explain your answer briefly.

- No, PowerPoint should be used to support your presentation, not replace it. You should spend more time on content than the presentation

(2 marks)

25. If you were asked to prepare a 10 minute PowerPoint presentation, as an approximate guide, what is the maximum number of slides your presentation should contain?

- 20 slides

(2 marks)

26. List **four** mistakes you can make when using PowerPoint.

1) reading from the slides

2) poor design choices

3) too much information on one slide

4) using too many or inappropriate colours

(4 marks)

27. State **two** advantages of using PowerPoint rather than a Document Camera?

1) consistent presentations

2) multimedia presentation (animation, sound, video) are possible

(2 marks)

ID Number ....

Applications (10 marks)

28. What is EndNote, and what is it used for?

- Bibliographic Database
      - Maintain database of references
      - Add citations to documents

(3 marks)

29. How many **bytes** are required for a 16 colour image 50 pixels wide and 10 pixels high? Show **all** your working.

16 colours need 4 bits per pixel

Bits =   4   x   50   x   10
(bits x width x height)

    = 2000 bits

Bytes = 2000 / 8 (There are 8 bits in a byte)
      = 250 bytes

(3 marks)

30. What does WYSIWYG stand for? Give an example of a WYSIWYG application.

"What you see is what you get"

Word, Excel, PowerPoint, etc.

(2 marks)

31. What is the ASCII system used for?

- Code used to represent English characters as numbers

(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 ....

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)

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