THE UNIVERSITY OF AUCKLAND

FIRST SEMESTER, 2009
Campus: City

COMPUTER SCIENCE

Mastering Cyberspace: An Introduction to Practical Computing

(Time Allowed: ONE hour)

NOTE: You must answer **all** questions in this test.
No calculators are permitted
Answer Section A (Multiple choice questions) on the Teleform answer sheet provided. Answer Section B in the space provided in this booklet.
There is space at the back for answers that overflow the allotted space.

Surname	
Forenames	
Student ID	
Login (UPI)	

	Question	Mark	Out Of
1 - 20	Multiple Choice		50
21	Acronyms		10
22	Representing Information		10
23	XHTML and CSS		30
	TOTAL		100

SECTION A

MULTIPLE CHOICE QUESTIONS

Each question in this section is worth 2.5 marks. There is only one correct answer for each question. Select your preferred alternative on the Teleform answer sheet provided.

Question 1
Which of the following statements about bytes is **true**?
 (a) The size of a byte depends on the manufacturer of the hardware device
 (b) A byte is a binary number consisting of exactly one binary digit
 (c) A byte is another name for a binary digit
 (d) Eight bytes are normally grouped together to form a bit
 (e) A byte is a binary number consisting of 8 binary digits

Question 2
What decimal number is represented by the binary number 10111?
 (a) 22
 (b) 20
 (c) 29
 (d) 15
 (e) 23

Question 3
Which of the following lists is in increasing order of magnitude?
 (a) kilo, mega, giga, tera
 (b) mega, kilo, tera, giga
 (c) mega, kilo, giga, tera
 (d) kilo, mega, tera, giga
 (e) kilo, giga, mega, tera

Question 4
How many binary digits would be required to represent the decimal number 1000 in the binary number system?
 (a) 4
 (b) 3
 (c) 10
 (d) 6
 (e) 8

Question 5
An Ethernet card is classified as which kind of hardware?
    (a) Storage
    (b) Processing
    (c) Output
    (d) Input
    (e) Communication

Question 6
Which one of the following statements is **false**?
    (a) Hard drives hold more information than RAM, and can access the information faster than RAM
    (b) The information in a hard drive can be damaged by a strong magnetic field
    (c) Multiple hard drives can be connected together in a RAID to improve the speed of information transfer
    (d) The information in a hard drive remains when the power is switched off
    (e) RAM is much more expensive per MB than hard disk capacity

Question 7
Given the following advertisement, what is the size of the hard drive?

Intel® Pentium® D Processor 930 with Dual Core Processor 3GHz
Genuine Windows® XP Home Edition
2GB DDR2 SDRAM at 533MHz
320GB SATA 3.0Gb with NCQ
16X Max DVD+/-RW with Dual Layer Write Capabilities
19" LCD Flat Panel
256MB ATI® Radeon X600 HyperMemory Graphics
Integrated 7.1 Audio

    (a) 3.0 Gb
    (b) 3 GHz
    (c) 320 GB
    (d) 2 GB
    (e) 533 MHz

Question 8
Which one of the following statements is **false**?
    (a) The capacity of RAM is measured in bytes
    (b) The capacity of a HDD is measured in bytes
    (c) The speed of a CPU is measured in Hz
    (d) The speed of a HDD is measured in Hz
    (e) The speed of RAM is measured in Hz

CONTINUED

Question 9

If a program running on a new computer takes 1 minute to solve a problem today, how long would it take on a computer that was purchased new 6 years ago? Hint: use Moore's Law.

    (a) 8 minutes

    (b) 6 minutes

    (c) 4 minutes

    (d) 2 minutes

    (e) 16 minutes

Question 10

Which one of the following is classified as open-source software?

    (a) Adobe Photoshop

    (b) WinZip

    (c) iTunes

    (d) Windows Vista

    (e) Mozilla Firefox

Question 11

Which one of the following is classified as system software?

    (a) Anti-virus software

    (b) Web browser software

    (c) Email client software

    (d) Photo editing software

    (e) Text editing software

Question 12

Which of the following statements is **true**?

    (a) You are legally permitted to copy software for educational purposes

    (b) The owners of proprietary software retain the legal rights to that software

    (c) Shareware can be legally modified and shared with others.

    (d) Freeware is another name for open-source software

    (e) You always have to pay for proprietary software

CONTINUED

Question 13
Which of the following statements is **false**?
    (a) TCP compresses and decompresses packets so they can be transferred efficiently
    (b) IP adds header information to data so that it can be routed effectively from a source to
         a destination computer through the Internet
    (c) IP addresses are used to specify the location of a specific computer connected to the
         Internet.
    (d) TCP is used to break a message up into packets and reform the packets back into the
         original message
    (e) TCP includes error checking so any packets that are missing are resent until the entire
         message can be recreated.

Question 14
Which of the following lists of events is ordered in chronological order, from the earliest
event to the most recent?
    (a) ARPANET created
        DNS created
        TCP/IP created
        WWW created
    (b) TCP/IP created
        WWW created
        ARPANET created
        DNS created
    (c) ARPANET created
        TCP/IP created
        DNS created
        WWW created
    (d) ARPANET created
        TCP/IP created
        WWW created
        DNS created
    (e) WWW created
        ARPANET created
        TCP/IP created
        DNS created

Question 15
Which of the following statements about the WWW is **false**?
    (a) The WWW is another name for the Internet
    (b) The WWW is a client-server system
    (c) The protocol used to transfer web pages is http
    (d) The WWW was created by Tim Berners-Lee
    (e) The WWW is a hypermedia system

Question 16
Which of the following statements is **false**?
    (a) A wiki is used to collaboratively develop documents
    (b) A forum is used to conduct discussions in a structured way
    (c) A moderator of a forum normally has the right to ban people and delete their entries
    (d) Wikis, blogs and forums are forms of social media that allow anyone to communicate to a public audience
    (e) A blog is a web page that contains posts in alphabetical order

Question 17
Which one of the following statements is **false**?
    (a) When you look at a web page, the web browser history keeps a log of the page you looked at.
    (b) When you search for something using Google, they keep track of your IP address and the search terms you entered.
    (c) When you look at a web page, the DNS keeps a log of your IP address and the IP address of the page you looked at.
    (d) When you look at a web page, the web server that hosts the page keeps a log of your IP address and the page you looked at.
    (e) When you look at a web page, your ISP keeps a log of your IP address and the page you looked at.

Question 18
What is a cache?
    (a) A method of storage that improves reliability
    (b) A log of IP addresses and pages accessed on the WWW
    (c) Software that intercepts web page requests and redirects them
    (d) Software that prevents unauthorized access to a network
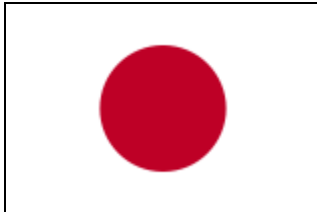   (e) A copy of information that can be accessed faster than the original

Question 19

Which of the following is **false**?

    (a) A flame is an angry post that contains personal attacks against an individual

    (b) A thread is a series of posts that form a conversation about a topic on a forum

    (c) A forum fire is a series of angry posts that causes a thread to be locked

    (d) LOL is a commonly used acronym on the WWW that means "laughing out loud"

    (e) Emoticons are symbols used to convey emotion in a written form

Question 20

If you were creating an image of the Japanese flag (shown below), for display on the WWW, which format would be best? Assume that the viewers of the image will be using a modern web browser.

    (a) SVG
    (b) MPEG
    (c) JPG
    (d) PNG
    (e) GIF

CONTINUED

SECTION B

Answer all questions in this section in the space provided. If you run out of space then please use the Overflow Sheet and indicate in the allotted space that you have used the Overflow Sheet.

Question 21
State what each of the following acronyms stand for.

(a)   What does CPU stand for?

(2 marks)

(b)   What does RAM stand for?

(2 marks)

(c)   What does MiB stand for?

(2 marks)

(d)   What does HTML stand for?

(2 marks)

(e)   What does TCP stand for?

(2 marks)

CONTINUED

Question 22
Answer each of the following short answer questions in the space provided.

(a)   Given that the letter "A" is represented by the number 65 in ASCII and the letter "a" is represented by the number 97 in ASCII, write the ASCII codes corresponding to the word "Baked". Show your working.

(5 marks)

(b)   How much memory is required to represent an image that is 10 pixels wide and 8 pixels high, and has 64 colours? Give your answer in bytes. Show your working.

(5 marks)

CONTINUED

Question 23

The following questions relate to XHTML and CSS.

(a)   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>Sound of silence</title>

<style type="text/css">

body {font-family:sans-serif;}

h1,h2 {font-family:serif;}

h1 {
  border-top-width:10px;
  border-top-style:solid;
  border-bottom-width:10px;
  border-bottom-style:solid;
  text-align: right;
}

li {font-variant:small-caps;}

.top {text-align: center;}

#top {text-align: left;}

p {font-style:italic;}

</style>

</head>

<body>

<h1 class="top">Silence</h1>

<h2>Questions</h2>

<ul>
<li>If a tree falls in a forest and no one is around to hear it,
does it make a sound?</li>
<li>What is the sound of one hand clapping?</li>
</ul>

<h2>Answers</h2>

<p>There are none.</p>

</body>

</html>
```

CONTINUED

(15 marks)

(b)   Write the valid XHTML 1.0 strict source code that will create a hypertext reference. The text **Computer Science** should appear as the link on the content area of the page. The host domain name should be **www.cs.auckland.ac.nz**, the page that is the destination for the link is called **courses.html**.
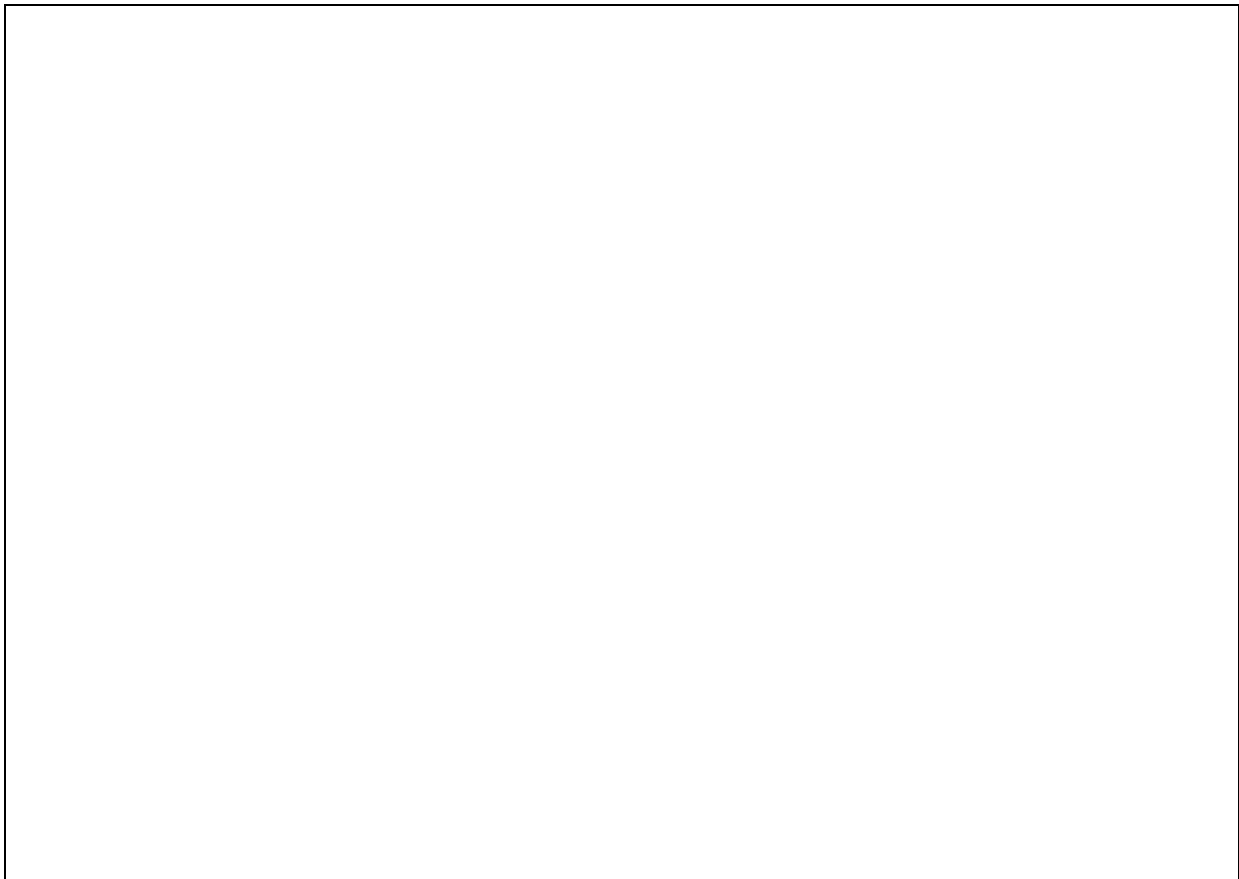
(5 marks)

(c)   Write the valid XHTML 1.0 strict source code that will display the MOTAT logo. The address of the image is "**http://www.motat.org.nz/images/MOTATlogo.gif**".

(5 marks)

CONTINUED

(d)   The following fragment of XHTML code defines the structure for a table. Draw the table as it would appear when it is displayed in a web browser.

```
<table border="1px">
<tr>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>c</td>
<td>d</td>
</tr>
<tr>
<td>e</td>
<td>f</td>
</tr>
</table>
```

(5 marks)

- Overflow Sheet 1 -
**Write the question number and letter next to your answer. You must ALSO indicate in
the allotted space that you have used the overflow sheet.**

- Overflow Sheet 2 -
Write the question number and letter next to your answer. You must ALSO indicate in the allotted space that you have used the overflow sheet.

Rough Working – This page will not be marked

Rough Working – This page will not be marked

ID..………………….

Rough Working – This page will not be marked

Rough Working – This page will not be marked