

THE UNIVERSITY OF AUCKLAND

FIRST SEMESTER, 2012
Campus: City

COMPUTER SCIENCE

Mastering Cyberspace: An Introduction to Practical Computing

(Time Allowed: ONE hour)

- NOTE:
- No calculators are permitted
 - Compare the test version number on the Teleform sheet supplied with the version number above. If they do not match, ask the test supervisor for a new sheet.
 - Enter your name and student ID on the Teleform sheet. Your name should be entered left aligned. If your name is longer than the number of boxes provided, truncate it.
 - Answer Section A (Multiple choice questions) on the Teleform answer sheet provided. Answer Section B in the space provided in this booklet.
 - Use a dark pencil to shade in your answers in the multiple choice answer boxes on the Teleform sheet. Check that the question number on the sheet corresponds to the question number in this question book. If you spoil your sheet, ask the supervisor for a replacement.
 - There is space at the back for answers that overflow the allotted space.

Surname	<i>Sample</i>
Forenames	<i>Answers</i>
Student ID	
Login (UPI)	

	Question	Mark	Out Of
1 - 30	Multiple Choice		75
31	XHTML and Style Sheets		12
32	XHTML/CSS		5
33	XHTML		8
	TOTAL		100

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SECTION A**MULTIPLE CHOICE QUESTIONS**

Each question in this section is worth 2.5 marks. For each question, choose the best answer according to the information presented in lectures. Select your preferred answer on the Teleform answer sheet by shading in the appropriate box.

Question 1

[2.5 marks] Which of the following statements is FALSE?

- (a) **All information can be represented exactly in digital form.**
- (b) Sound in the real world is not digital.
- (c) Sound is converted to digital information by taking samples.
- (d) Most real world information is analogue.
- (e) All of the above.

Question 2

[2.5 marks] How many different values can be represented using 4 bits?

- (a) 1000
- (b) 8
- (c) **16**
- (d) 4
- (e) 10000

Question 3

[2.5 marks] What is the decimal number equal to the binary number 1110?

- (a) 28
- (b) 30
- (c) **14**
- (d) 110
- (e) 7

Question 4

[2.5 marks] The board which the CPU, memory and other devices plug into is known as the

...

- (a) **motherboard**
- (b) processor board
- (c) surfboard
- (d) masterboard
- (e) fatherboard

Question 5

[2.5 marks] Which of the following lists of components is ordered from slowest to fastest?

- (a) hard drive, optical drive, RAM, CPU
- (b) optical drive, hard drive, RAM, CPU**
- (c) CPU, RAM, hard drive, optical drive
- (d) hard drive, RAM, optical drive, CPU
- (e) optical drive, hard drive, CPU, RAM

Question 6

[2.5 marks] Why has the clock speed of CPUs not got noticeably faster in recent years?

- (a) Wirth's law states that software can't go any faster.
- (b) To get much faster, processors would get too hot and use too much energy.**
- (c) Moore's law states that processors won't get any faster.
- (d) Because software is now faster, processors do not have to be faster.
- (e) Processors are fast enough.

Question 7

[2.5 marks] Which of the following best describes the sequence of events when a program is run?

- (a) The program is loaded into RAM from secondary storage and then read from and written to by the CPU.**
- (b) The program is accessed by the CPU from secondary storage and then written out to RAM.
- (c) The CPU writes the program to RAM and then transfers it to secondary storage.
- (d) The RAM reads the program from the CPU and writes it to secondary storage.
- (e) The program is loaded into secondary storage from RAM and then read from and written to by the CPU.

Question 8

[2.5 marks] Which of the following statements about file formats is FALSE?

- (a) The file format is used to decide which program should open the file.
- (b) A file format is described in text inside the file itself.**
- (c) The file format is commonly known by the extension on the end of the filename.
- (d) A file format defines the way that information is stored in the file.
- (e) All of the above.

Question 9

[2.5 marks] Which of the following types of software may sometimes be legally available for free?

- (a) freeware
- (b) open source software
- (c) software released under the GNU general public licence
- (d) proprietary software
- (e) All of the above**

Question 10

[2.5 marks] In what order did the following events occur?

- (a) Sputnik, Arpanet, TCP/IP, DNS, World Wide Web**
- (b) Sputnik, TCP/IP, World Wide Web, Arpanet, DNS
- (c) Arpanet, Sputnik, TCP/IP, DNS, World Wide Web
- (d) TCP/IP, DNS, Sputnik, World Wide Web, Arpanet
- (e) TCP/IP, Sputnik, Arpanet, World Wide Web, DNS,

Question 11

[2.5 marks] Which of the following statements about packet-switching is FALSE?

- (a) Messages are broken into packets.
- (b) Each packet is sent independently.
- (c) Data packets can still be delivered if some nodes are down.
- (d) Nodes can route data packets efficiently to their destinations.
- (e) A continuous connection is formed.**

Question 12

[2.5 marks] Which of the following statements about TCP/IP is FALSE?

- (a) Combines packets to reform message.
- (b) Defines routing information.
- (c) Makes sure that packets are not sent faster than they can be received.
- (d) Associates a human readable name with an IP address.**
- (e) Checks that all packets arrive.

Question 13

[2.5 marks] Which of the following statements about email is FALSE?

- (a) Messages pass through many machines.
- (b) Ray Tomlinson introduced the “@” sign for email addresses.
- (c) Email is an asynchronous mode of communication.
- (d) It is illegal to read other people’s email messages.**
- (e) The protocol to send email is different from the protocol to receive it.

Question 14

[2.5 marks] Which of the following protocols is used to send email?

- (a) IMAP
- (b) POP3
- (c) TCP
- (d) SMTP**
- (e) UDP

Question 15

[2.5 marks] Which of the following statements about blogs is FALSE?

- (a) A blog is a website.
- (b) It is very easy to add new material.
- (c) Blogs normally have a moderator.**
- (d) Posts in a blog are made in chronological order.
- (e) Blog posts are usually from a single author.

Question 16

[2.5 marks] Which of the following statements about Wikis is TRUE?

- (a) Wikis always have a moderator.
- (b) They were invented by a dyslexic New Zealander.
- (c) Wikis are very difficult to use.
- (d) Wikis use a markup language.**
- (e) Wikis can only be written to by one person.

Question 17

[2.5 marks] Which of the following statements about the World Wide Web is TRUE?

- (a) What you see on TV is always more accurate than what you read on the web.
- (b) What you read on the web is always more accurate than what you see on TV.
- (c) What you read on the web is always more accurate than what you read in newspapers.
- (d) What you read in newspapers is always more accurate than what you read on the web.
- (e) None of the above.**

Question 18

[2.5 marks] Which of the following statements about a proxy is FALSE?

- (a) It can prevent unauthorized access to a private network.**
- (b) It is a computer that sits between a client and a server.
- (c) It can filter out webpage requests.
- (d) It can sometimes have a cache for quick access.
- (e) None of the above.

Question 19

[2.5 marks] Which of the following lists of components for a cyberspace address (URL) is in the correct order?

- (a) **protocol, domain, path/file**
- (b) path/file, protocol, domain
- (c) domain, protocol, path/file
- (d) domain, path/file, protocol
- (e) protocol, path/file, domain

Question 20

[2.5 marks] Which of the following does not keep a log of web accesses?

- (a) web browser
- (b) web server
- (c) **motherboard**
- (d) operating system
- (e) ISP

Question 21

[2.5 marks] If the ASCII code for CAT is “67 65 84” what is the ASCII code for DOG?

- (a) 68 78 71
- (b) **68 79 71**
- (c) 68 79 72
- (d) 68 78 72
- (e) 69 78 72

Question 22

[2.5 marks] If the ASCII code for CAT is “67 65 84” what is the word represented by “82 65 84”?

- (a) Pat
- (b) **RAT**
- (c) Rat
- (d) PAT
- (e) pat

Question 23

[2.5 marks] Which of the following statements about EndNote is FALSE?

- (a) It maintains a database of references.
- (b) References can be imported from online libraries.
- (c) **It can alert you to inappropriate references.**
- (d) It assists in maintaining consistent referencing.
- (e) It can add citations to your document.

Question 24

[2.5 marks] Why are standard file formats important for a word processor?

- (a) So that documents created by the word processor take up a smaller amount of disk space.
- (b) So that a document appears the same on the screen as it does when printed (WYSIWYG).
- (c) So that documents can be shared between different applications.**
- (d) So that PostScript can be used to print.
- (e) So that the time taken to learn an interface is not wasted.

Question 25

[2.5 marks] How much memory is required to store an image that is 10 pixels wide, 5 pixels high, and uses 16 colours?

- (a) 25 bits
- (b) 200 bytes
- (c) 150 bits
- (d) 100 bits
- (e) 25 bytes**

Question 26

[2.5 marks] If you had a square image that is 4 Megapixels, and a printer whose resolution is 1,000 pixels per inch, how big would your image appear?

- (a) 3 inches by 3 inches
- (b) 2 inches by 2 inches**
- (c) 1 inch by 1 inch
- (d) 0.5 inches by 0.5 inches
- (e) 1.5 inches by 1.5 inches

Question 27

[2.5 marks] Which of the following compression algorithms would be particularly good for photos but poor for graphics?

- (a) SVG
- (b) Both GIF and PNG
- (c) JPEG**
- (d) PNG
- (e) GIF

Question 28

[2.5 marks] Which of the following suggestions should you always use in PowerPoint presentations?

- (a) **Don't put every word that you say on the slide.**
- (b) Don't put any words that you say on the slide.
- (c) Use long rather than short sentences on slides.
- (d) Animate all transitions between slides.
- (e) Use multiple fonts on every slide.

Question 29

[2.5 marks] Which of the following was NOT a criticism of PowerPoint by Tufte?

- (a) PowerPoint is particularly poor at representing tables of data.
- (b) PowerPoint forces all presentations to fit the same mould.
- (c) **PowerPoint has a limited range of templates.**
- (d) PowerPoint reduces the information available to an audience.
- (e) PowerPoint encourages people to focus on style over content.

Question 30

[2.5 marks] What does the "3-click rule" mean?

- (a) A well designed web site will have a maximum of 3 hyperlinks on each page.
- (b) **You should be able to navigate from one page in a web site to any other page in the web site by clicking a maximum of 3 links.**
- (c) On average, a user browsing a web site clicks on only 3 different links within the website.
- (d) For improved accessibility on mobile applications, well designed web sites should include the ability to triple-tap (3-click) to perform additional functions.
- (e) Amazon obtained a patent for shopping using only 3-clicks, so pages cannot use the 3-click rule for shopping.

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 31 XHTML and Style Sheets

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. Note that it uses both internal and external style sheets. Show any bold text by drawing it **darker** than the other text.

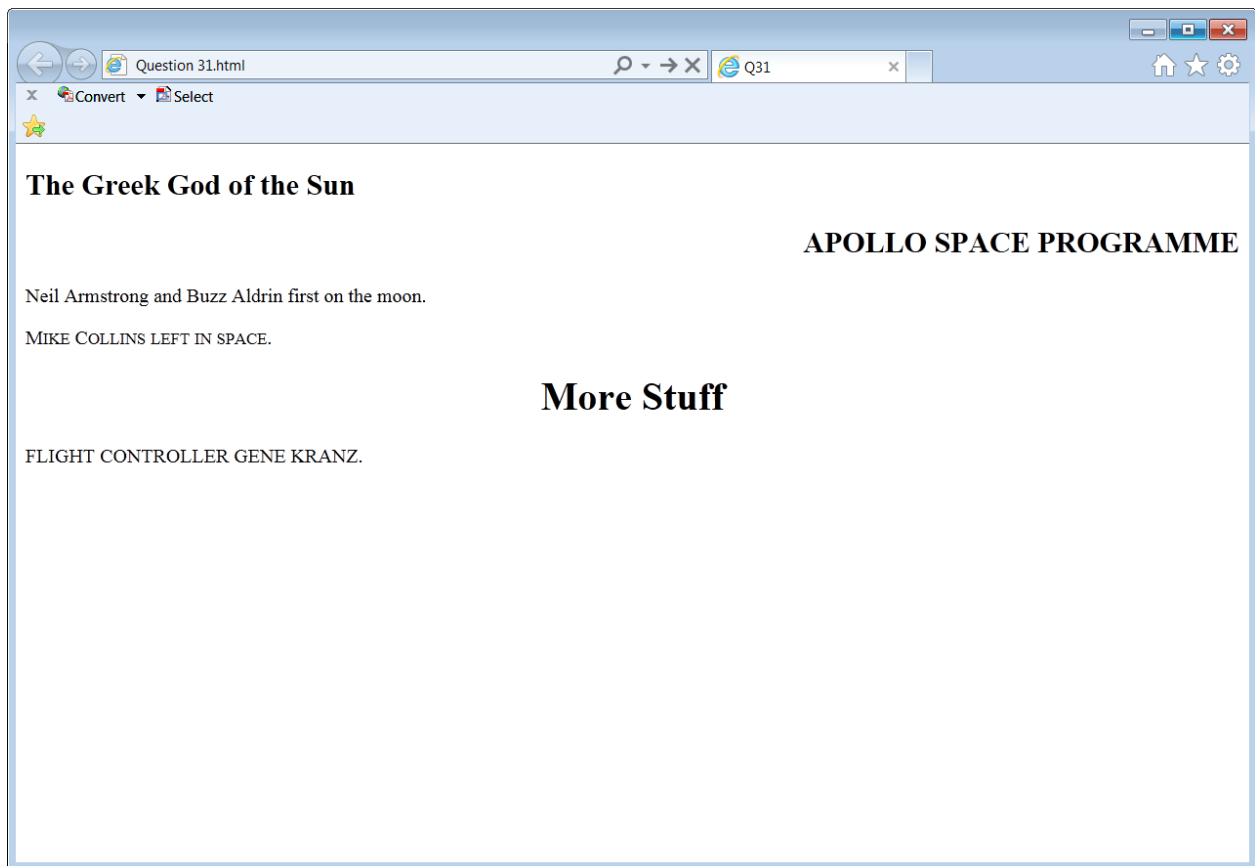
```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html
  PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>Q31</title>
    <link rel="stylesheet" href="test.css" type="text/css">
    </link>
    <style type="text/css">
      h2 {text-align: right;}
    </style>
  </head>

  <body>
    <h2 style="text-align: left">The Greek God of the Sun</h2>
    <h2 class="command">Apollo Space Programme</h2>
    <p>Neil Armstrong and Buzz Aldrin first on the moon.</p>
    <p id="command">
      Mike Collins
      left in space.
    </p>
    <h1>More Stuff</h1>
    <p class="command">Flight controller Gene Kranz.</p>
  </body>
</html>
```

The external style sheet is defined in a file called “test.css”, with the contents:

```
h1,h2 {text-align: center;}
#command {font-variant: small-caps;}
.command {text-transform: uppercase;}
```

Note that the web page uses both internal and external style sheets.



The screenshot shows a web browser window with the following content:

Question 31.html

Convert Select

The Greek God of the Sun

APOLLO SPACE PROGRAMME

Neil Armstrong and Buzz Aldrin first on the moon.

MIKE COLLINS LEFT IN SPACE.

More Stuff

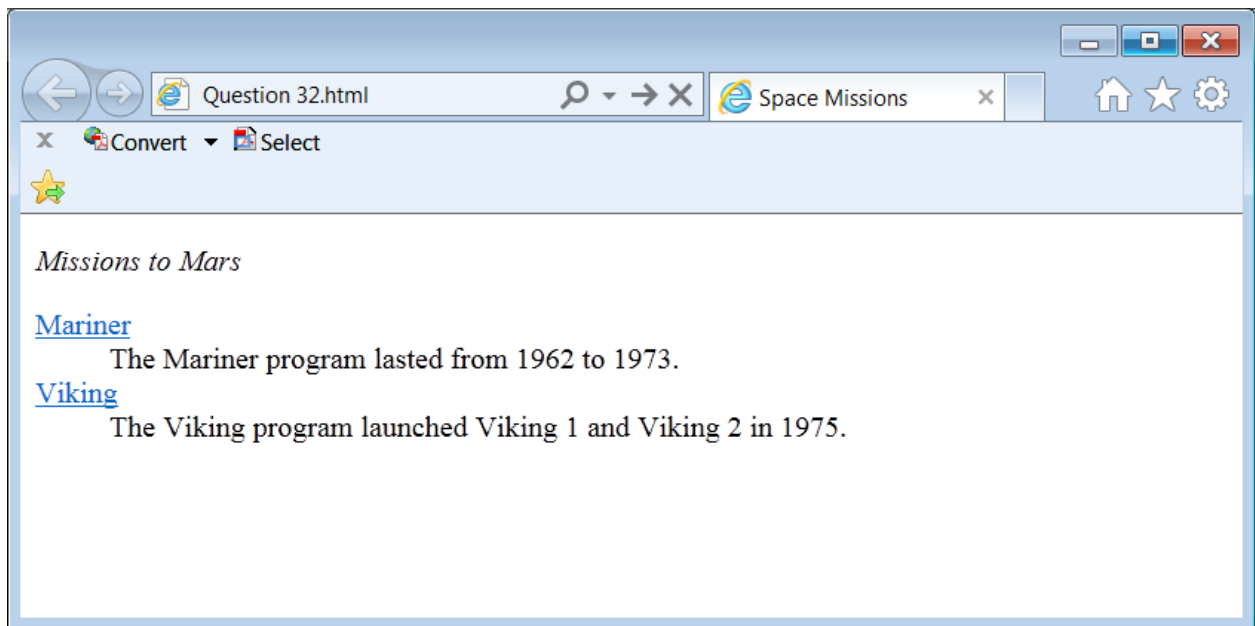
FLIGHT CONTROLLER GENE KRANZ.

(12 marks)

Question 32 XHTML/CSS

On the following page, draw the appearance of the web page produced by the following XHTML 1.0 Strict code. Show any links with underlines.

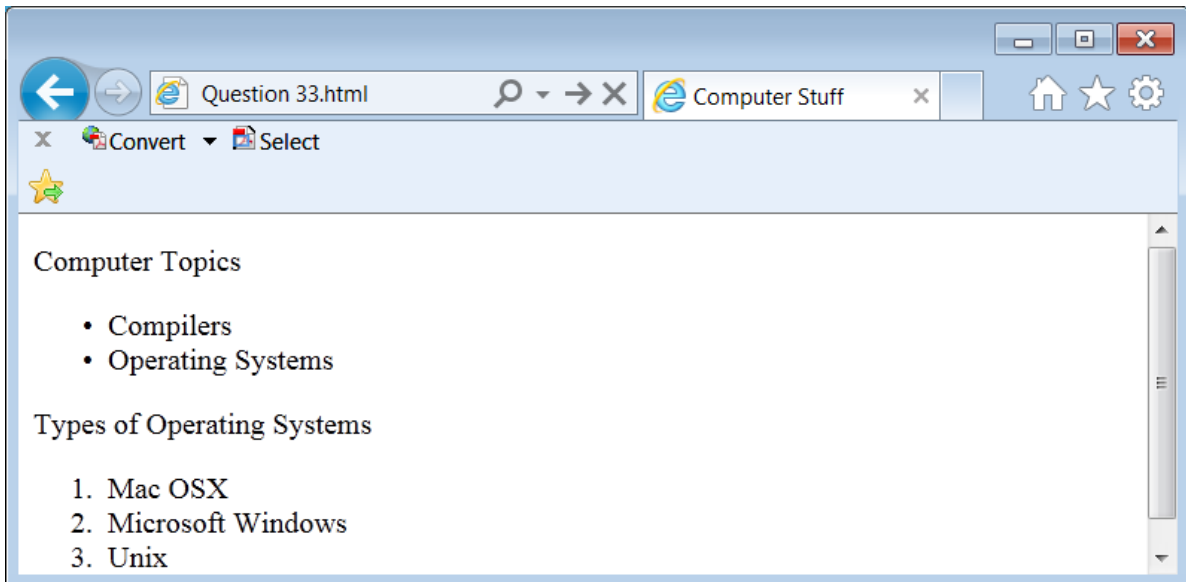
```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html
  PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <title>Space Missions</title>
</head>
<body>
  <p style="font-style:italic">Missions to Mars</p>
  <dl>
    <dt>
      <a href="http://wikipedia.org/wiki/MarinerProgram">
        Mariner
      </a>
    </dt>
    <dd>
      The Mariner program lasted from 1962 to 1973.
    </dd>
    <dt>
      <a href="http://wikipedia.org/wiki/VikingProgram">
        Viking
      </a>
    </dt>
    <dd>
      The Viking program launched Viking 1 and Viking 2
      in 1975.
    </dd>
  </dl>
</body>
</html>
```



(5 marks)

Question 33 XHTML

Complete the XHTML 1.0 Strict code that would produce the following web page. Do not use header tags to produce the “Computer Topics” or the “Types of Operating Systems”.



```
<?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">
<head> <title>Computer Stuff</title> </head>
<body>

<p>Computer Topics</p>

<ul>
  <li>Compilers</li>
  <li>Operating Systems</li>
</ul>

<p>Types of Operating Systems</p>

<ol>
  <li>Mac OSX</li>
  <li>Microsoft Windows</li>
  <li>Unix</li>
</ol>

</body>
</html>
```

(8 marks)