THE UNIVERSITY OF AUCKLAND

TEST 2001

COMPUTER SCIENCE

Introduction to Computing and Applications
(Time Allowed: ONE hour)

Surname
(Family name)

First Name(s)
(Given names)

Student ID:

NOTE: Attempt **ALL** questions.
Write your answers in the space provided.
There is space at the back for answers that overflow the allotted space
Calculators are **NOT** permitted

Section	Marks	Possible Marks
Hardware and Software		18
Representation of Information		12
History of Computers		9
Internet and Data Communications		20
Applications		25
Digital Images		12
HTML		4
Total		100

Introduction to Hardware and Software [18 marks]

1. How many **Bytes** are in a KiloByte?   (3 Marks)

2. Circle **All** below that are true. (3 Marks)

a) ROM is volatile and RAM is non-volatile

b) RAM stands for Read Around Memory

c) ROM stands for Read Only Memory

d) RAM is the main memory on our system board

e) ROM is the main memory on our system board

3. List **2 different** input devices on a computer (3 Marks)

4. Give an example of a **secondary storage device** (3 Marks)

5. Number the following processors in order of slowest to fastest. Number 1 should be the slowest and number 3 the fastest. (3 Marks)

Intel Pentium III

Commodore 64

IBM 386

6. The _____ is the brain of the computer.   (3 marks)

Representation of Information [12 marks]

7. Convert the following number from binary to decimal. **11010** (4 marks)
Show your workings

8. Convert the following number from decimal to binary. **123** (4 marks)
Show your workings

9. Add the following 2 binary numbers. Give the answer as a binary number. (4 marks)

```
      1010
  +  1111
   ---------------
```

History of Computing [9 marks]

Use the following list of names to answer the questions 10-12 below. Some names may be used more than once and some may not be used at all:

Herman Holerith, Vannevar Bush, Ada Augusta, Bill Gates, Steve Wozniak, Charles Babbage, Paul Allen, Joseph Jacquard, Steve Jobs, Blaise Pascal, Ed Roberts, Wilhelm Schikard, Dan Brinklin, Bob Frankston, Tim Berners Lee, Ted Nelson,

10. Which 2 people above were responsible for the formation of Apple Computer?
(3 marks)

11. Who designed the Analytical Engine? (3 marks)

12. Which person above is sometimes credited as being the first computer programmer?
(3 marks)

Internet and Data Communications[20 marks]

13. The Internet uses which type of network design? (circle one)
(2 marks)

a) Packet Switching

b) Circuit Switching

14. What does **modem** stand for:
(3 marks)

15. What is the user name of the person with this email address? (3 marks)
happy@sad.microsoft.co.nz

16. Which are common mediums for a data communications channel? (3 marks)
(circle all that apply)

a) Microwave

b) Water

c) Fibre-optic

d) Cylindrical filament

e) Fibre-entrance

17. What does **IP** (of TCP/IP) stand for? (3 marks)

I_____ 				P _____

18. My web browser is (choose one) (2 marks)

a) A client application

b) A server application

19. I want to open the web page called "home.html" at: www.auckland.ac.nz. Give the **full URL** of this page: (4 marks)

Applications (25 Marks)

	A	B	C	D	E	F	G	H	I	J	K
1				Results for the 2001 Dual-Marathon Age Based Awards							
2											
3							Medal Categories				
4							Points	Award			
5							1	Rope			
6							40	Green Ribbon			
7							50	Blue Ribbon			
8							100	Bronze			
9							155	Silver			
10							180	Gold			
11											
12											
13	**Surname**	**First Name**	**Age**	**Sex**	**Race**	**Point A**	**Point B**	**Total Points**	**Medal**		
14	Ponnampalam	Cushla Asti	43	M	2:10	10	3	36	Rope		
15	Kim	Susan Julie	25	F	3:04	45	5	115	Bronze		
16	Quizon	Kumar	31	M	2:15	1	7	17	Rope		
17	Stephen	David James	31	M	2:18	22	11	88	Blue Ribbon		
18	Cohen	Myra	21	F	2:46	32	24	184	Gold		
19	Li	Bassem	26	F	2:28	15	9	75	Blue Ribbon		
20	Tajek	Aran	80	M	5:40	12	6	48	Green Ribbon		
21	Robinson	Lillian	56	F	2:40	33	7	101	Bronze		
22	Evans	Kelly Marama	45	F	3:33	22	8	84	Blue Ribbon		
23											
24											
25											
26											
27											
28											

Excel

Given the spreadsheet above answer the following questions.

20. The value in column H (total points) is calculated as follows. If the person is male (an M in column D) then this column is 3 times "Point A" plus 2 times "Point B". If they are Female (an F in column D) they receive 2 times "Point A" and 5 times "Point B".   (You can assume that everyone must have either an M or an F in column D)
Circle the correct formula for cell H14.
(This formula must work correctly when we use a fill-down) (5 marks)

a) =IF(D14="M",(F14*3)+(G14*2),(F14*2)+(G14*5))

b) =IF(D14="M",(F14*3)+(G14*2))

c) =IF(D14="M",(F14*2)+(G14*5),(F14*3)+(G14*2))

d) =IF(D14="M",(F14*3)+(G14*2),(F14*2)+(G14*5))

21. Fill in the VLOOKUP formula below that should be placed in **cell I14**. We want to use the table to decide which type of medal a person will earn based on their Total Points. Remember to make sure you can use a fill-down to make this work correctly in the entire column. Make sure that you use a range of values, **not** an exact look-up(e.g. 35 will match Rope) (5 marks)

= VLOOKUP (,   ,   ,   )

22. What will be the value of the following formula?
(Show workings for partial credit) (5 marks)

=MAX(F16,G16)+SUM(G14:G16)

23. I put the formula **=(H15+H16)** in cell J16. I then copy it to cell J17. What is the value in the cell **J17**? (Give the resulting value not the formula)
(4 marks)

 (show workings for partial credit)

Microsoft Word
24. Assume I have my formatting marks turned on. What does the following character mean in your word document? (2 marks)
¶

25. Will you see this character printed when you print out your document?
(Circle the correct answer)
(2 marks)

Yes

No

26. Given the menu below which view do I need to choose if I want to see my headers/footers while I am working inside of Word? (2 marks)
(Circle one)

a) Normal
b) Print Layout
c) Web Layout
d) Outline
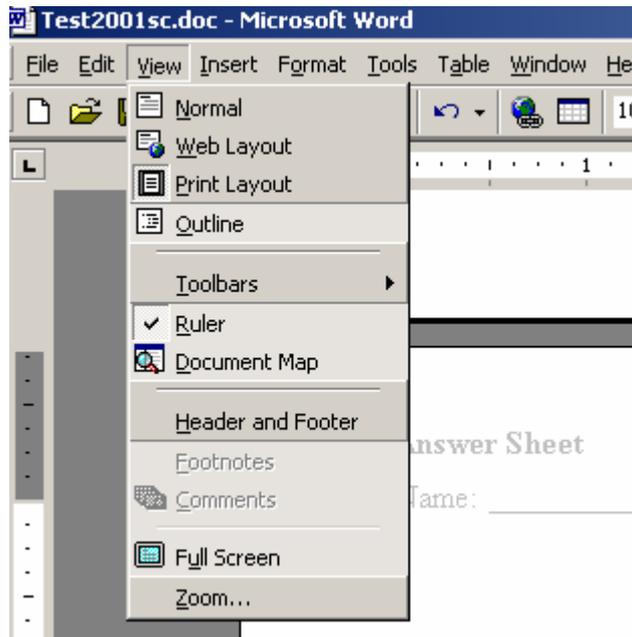
Digital Images (12 Marks)

27. If a bitmap is 10 pixels high by 10 pixels wide and uses only black and white, how much space (in bits) would be required to store the image? (3 marks)

```



```

28. If the same image has 8 colours, how much space (in bits) would it require? (2 marks)

```


```

POV-Ray

29. Given the following POVRay scene
   a) Label the axes
   b) Draw the object that will be rendered.
 (We are not marking for artistic ability. We will be looking for the approximate placement and orientation) (5 marks)

```
camera
{
 location  <0, 0, -5>
 look_at   <0.0, 0.0,  0.0>
}
light_source
{
   <3,3,-3>
   color rgb <1,1,1>
}

cylinder{
     <-1,0,0><1,0,0> 1

        texture{pigment {rgb<0,0,1>} }

}
```
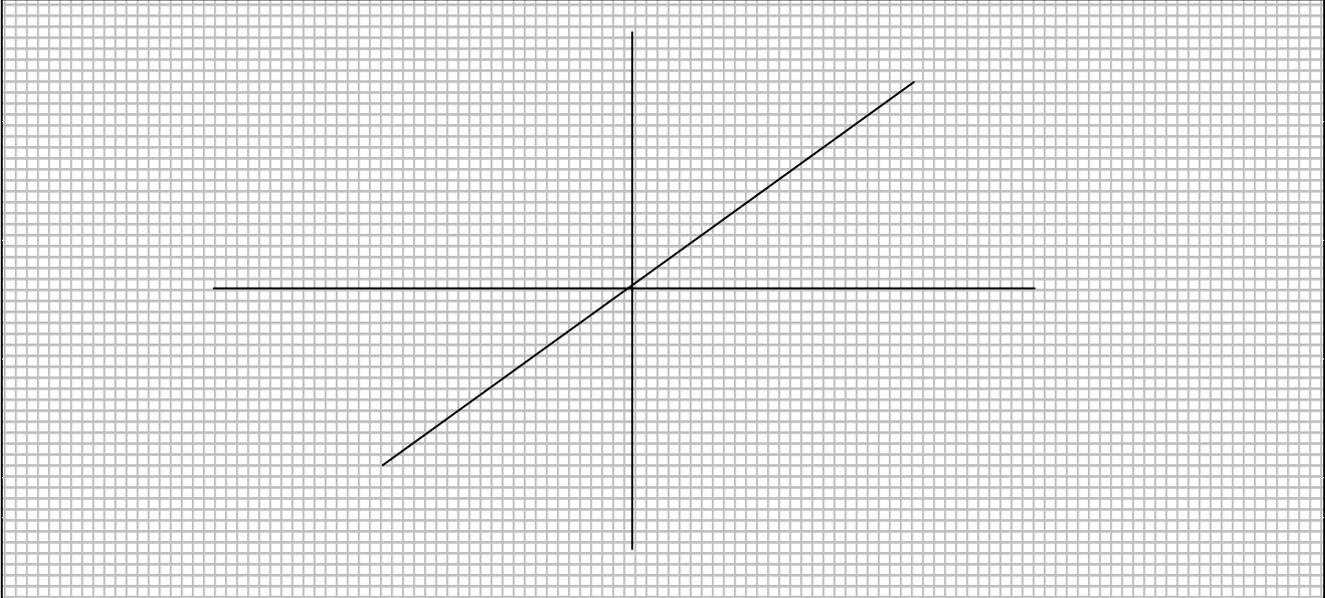
Draw your scene here and label the axes.

30. What colour will the object be? (2 marks)

HTML (4 marks)

31) Give two essential HTML tags for a document: (2 marks)

```


```

32) **HTML** stands for: (2 marks)

```


```

Overflow Sheet 1

Write the question number next to your answer.
You must **ALSO** indicate in the allotted space that you have used the overflow sheet.

Answer Sheet

Rough Working

This sheet will **NOT** be marked

Name: _____   - 15 -   COMPSCI 111SC