

THE UNIVERSITY OF AUCKLAND

SEMESTER TWO 2020
Campus: City

COMPUTER SCIENCE

An Introduction to Practical Computing **Test**

(Time Allowed: 75 minutes)

NOTE:

This test is out of **100** marks.

Attempt **ALL** questions.

Upload your answers to Canvas as a pdf document.

This test contributes 20% towards your final grade.

You will need to put your answers into a Word document and save it as a pdf. Upload the pdf to Canvas, just like you do for your lab assignments.

The work must be your own. Your test will be run through Turnitin so please ensure you do not copy and paste from the Internet. All your answers must be expressed in your own words. On the next page you will be asked to include a sentence in your answers document which states that the test is your own work.

Answer all questions in a Word document and save it as a pdf document.

Name your answers document with your upi (login name) followed by CS111Test.pdf, for example, abcd123CS111Test.pdf. Upload the pdf to Canvas.

Q0 [0 marks]

Please include the following statement as the answer to question Q0:

*For the duration of this test, I, (**insert your name here**), confirm that I will not discuss the content of the test with anyone else. I will not give any assistance to another student taking this test. I will not receive any assistance from any person or tutoring service. I will not post any information about this test on the Internet.*

Note: The following specifications for a desktop computer are to be used to answer Questions 1 - 4:

Intel Core i9-7900X 8 Core 3.5 GHz 20 MB L3 cache 16 GB DDR4 RAM NVIDIA GeForce GT 8 GB GDDR5 2 TB SATA3 HDD 500 GB SSD Ubuntu Linux 18.04
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Q1 [3 marks]

What is the speed of this computer's CPU?

Q2 [3 marks]

How much volatile memory does this computer have?

Q3 [3 marks]

How much non-volatile memory does this computer have?

Q4 [3 marks]

Does this computer have a motherboard?

Q5 [4 marks]

Moore's Law states that "The number of transistors on a single integrated circuit doubles approximately every 18 months, while the price remains the same". Therefore, according to Moore's Law, in 9 years' time, given the same price, how much faster will CPUs be?

Q6 [5 marks]

How many different numbers can be represented using half a byte?

Q7 [4 marks]

If we had a machine that had 6 dials with each dial having 10 different states (0 – 9), how many different numbers could we represent?

Q8 [4 marks]

What is the result of the following binary calculation? $11001_2 - 111_2$

Q9 [3 marks]

Why was VisiCalc known as the first killer application?

Q10 [2 marks]

Which of the following statements are TRUE?

- I. Claude Shannon was the first to make the connection between binary arithmetic and electric circuitry.
- II. Patch cables were used to program early computers.
- III. In 1842, there were people who believed the Analytical Engine might be able to write poetry.
- IV. Programs for the Analytical Engine could contain loops and if-statements.
- V. Steve Jobs used a lot of the innovations that he saw at Xerox PARC in creating the Macintosh.

Q11 [2 marks]

Which of the following statements are TRUE?

- I. The R2BF tries to help individuals preserve their privacy.
- II. A proxy can use a cache to enable faster processing of requests.
- III. Filter bubbles occur because of personalised information.
- IV. A firewall prevents unauthorized access to a private network.

Q12 [4 marks]

Which of the following statements about harmful content are FALSE?

- I. If the author of harmful content doesn't respond to a request to remove the content then the host must remove the content within 48 hours.
- II. The Harmful Digital Communications Act 2015 is designed to prevent copyright infringement.
- III. Software is protected by copyright law in a similar way to other authored content.
- IV. A blacklist of IP addresses can be used to prevent access to locations on the list.
- V. All material viewed in NZ must comply with NZ laws regardless of the country of origin.
- VI. Peer to Peer (P2P) networks using BitTorrent are illegal.

Q13 [3 marks]

What is the ASCII code for the word “Crocodile”?

Q14 [3 marks]

Describe 3 advantages of using user defined MS-Word styles when creating a document.

Q15 [3 marks]

How do circuit switching networks differ from packet-switching networks?

Q16 [3 marks]

Are the Internet and WWW synonymous?

Q17 [3 marks]

Describe the difference(s) between a router and a modem.

Q18 [5 marks]

Describe the difference(s) between asynchronous communication and synchronous communication, giving two examples of each form of communication.

Q19 [3 marks]

Are employers permitted to read your emails on the company’s email system or do privacy laws prevent this?

Q20 [4 marks]

Is Wikipedia a reliable source of information? Give 4 reasons for your answer.

Q21 [6 marks]

What wiki markup would you use to produce the following formatted content in a wiki?

- *Bold decisions*
 - **must be made**
 - *at all times*

Q22 [5 marks]

List five of the possible health problems associated with using social media.

Q23 [3 marks]

Which of the following statements about Occupational Overuse Syndrome (OOS) are TRUE?

- I. OOS is also referred to as Repetitive Strain Injury (RSI).
- II. OOS is an umbrella term for a range of conditions characterised by muscle discomfort, aches and pains, muscle tightness and spasms, and numbness and tingling.
- III. OOS pain may eventually become constant and associated with loss of muscle strength and sleep disturbances.
- IV. OOS can only be caused by using a computer.

NOTE: The following spreadsheet is used to hold movie ticket sales data and is to be used in the next two questions:

	A	B	C	D	E	F	G
1							
2		Movie Ticket Sales					
3							
4		Movie	Tickets Available	Tickets Sold	Tickets Left	Sales	
5		This Town	50	21	29	\$315	
6		Daffodils	50	18	32	\$270	
7		Rams	50	23	27	\$345	
8		Vai	50	16	34	\$240	
9		Bellbird	50	12	38	\$180	
10		TOTAL:	250	90	160	\$1,350	
11							
12			Ticket Price:	\$15			
13							

Q24 [5 marks]

In the spreadsheet above what is the best formula for Cell F5 so it can be filled down? The ticket price is in Cell D12.

Q25 [3 marks]

In the spreadsheet above what is the best formula for Cell C10 so it can be filled across?

Q26 [5 marks]

The following spreadsheet contains an analysis of earthquakes that occurred from January to July. What is the best formula to use in Cell C4 so that it can extract the appropriate class from the table in Columns E and F? The formula must be able to be filled down.

	A	B	C	D	E	F	G
1							
2		Biggest			Earthquake Classes		
3	Month	Earthquake	Description		Magnitude	Class	
4	Jan	2	None		0	None	
5	Feb	3.3	Minor		3	Minor	
6	Mar	4.4	Light		3.9	Light	
7	Apr	6.6	Strong		4.9	Moderate	
8	May	5.5	Moderate		5.9	Strong	
9	June	7.8	Major		6.9	Major	
10	July	8.2	Great		7.9	Great	
11							

Q27 [6 marks]

The following spreadsheet contains data about movie ticket sales. The price for each movie depends on the day of the week and can be extracted from the table in Cells C3:I4. What is the best formula for Cell D8? The formula must be able to be filled down.

	A	B	C	D	E	F	G	H	I	J
1										
2		Movie Prices								
3	Day:	Mon	Tues	Wed	Thurs	Fri	Sat	Sun		
4	Price:	15	10	10	15	20	20	20		
5										
6			Ticket							
7	Day	Sales	Revenue							
8	Mon	23	345							
9	Tues	17	170							
10	Wed	15	150							
11	Thurs	22	330							
12	Fri	45	900							
13	Sat	62	1240							
14	Sun	53	1060							
15	TOTAL:	237	4195							
16										