



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

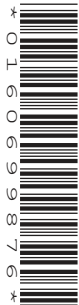
CANDIDATE
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INFORMATION AND COMMUNICATION TECHNOLOGY

0417/13

Paper 1 Theory

October/November 2018

2 hours

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces at the top of this page and any additional pages you use.

Write in dark blue or black pen.

Do not use staples, paper clips, glue or correction fluid.

DO NOT WRITE IN ANY BARCODES.

No marks will be awarded for using brand names of software packages or hardware.

Answer **all** questions.

Any businesses described in this paper are entirely fictitious.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [] at the end of each question or part question.

This syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

This document consists of **15** printed pages and **1** blank page.

1 Complete the following sentences, using items from the list.

- 3D printer backing storage CPU hardware RAM**
ROM scanner software touchscreen wide format printer

(a) The core component in a computer that controls arithmetic operations is called a
 [1]

(b) The physical components of a computer are collectively called
 [1]

(c) The type of memory that is volatile is called
 [1]

(d) An output device that is also an input device is called a
 [1]

2 Tick the most appropriate device matching the statements.

	Hub (✓)	Switch (✓)	Router (✓)
Connects a LAN to a WAN.			
Broadcasts data to all connected devices.			
Connects two LANs.			
Selects which device to send data to.			

[4]

3 Tick **three** actions that should be carried out during validation.

	Tick (✓)
Re-reading the document	
Performing a length check on the data	
Re-entering the data	
Performing a character check on the data	
Performing a grammar check on the document	
Checking for spelling	
Checking the data is reasonable and sensible	
Checking the data is 100% correct	

[3]

4 A supermarket has a number of point of sale (POS) terminals. These terminals are linked to the stock database. Goods are automatically ordered when the number in stock reaches or goes below the reorder level.

(a) Name **two** input devices that would be found at a POS terminal.

1

2 [2]

(b) Name **two** output devices that would be found at a POS terminal.

1

2 [2]

- (c) The manager is checking stock on the shelves and in the stock room. He notices that an item has run out of stock. The database shows that the number in stock is above the reorder level.

Give **three** reasons why this could have happened.

1

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2

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3

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[3]

- 5 Peter owns a sports centre. He keeps records of all his customers. He needs to replace his current system and has employed a systems analyst to organise the introduction of the new system.

One method of researching the current system is interviewing Peter.

- (a) Describe **three** other methods of researching the current system.

1

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2

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3

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[3]

The systems analyst decides that the new system needs a screen input form to enter all the personal data of each new customer.

(b) Describe **three** items of personal data for new customers that would be entered using the form.

1

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2

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[3]

(c) Some users of the system struggle to complete the form due to problems with their eyesight. You have been asked to design a screen input form to help these users.

Describe **four** features that you would include in your form to help these users complete it.

1

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2

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3

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[4]

(d) When the computer system has been created it needs to be implemented.

Name **three** methods of implementation.

1

2

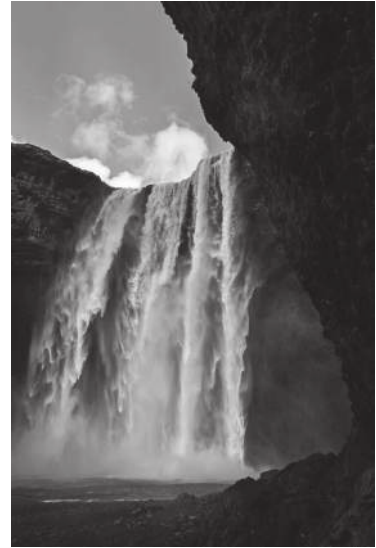
3

[3]

- 6 You are writing an essay on waterfalls using a word processor. You have found an image but it is in landscape orientation and you have changed the orientation to portrait.



Before changing



After changing

- (a) Describe the steps you took to make these changes.

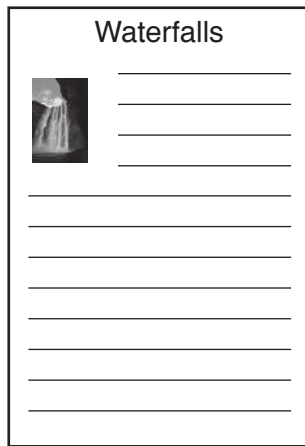
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..... [2]

The existing document with your new image looks like this:



(b) Describe how you could add another new image that you have found on the internet to the document so the text appears alongside it and beneath it like the existing document.

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..... [4]

7 A piece of software has been created and is protected by copyright legislation.

(a) Explain the need for copyright legislation.

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..... [2]

(b) Software houses have ways of preventing software copyright being broken.

Describe **four** ways that the software houses can help to prevent copyright being broken.

- 1
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- 2
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- 3
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- 4
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[4]

8 Digital cameras are becoming smaller and more widespread. They can be used in a number of positive ways, for example:

- They are used in medical operations to film internal organs without the need for major surgery.
- They are used in wildlife situations where a large camera would be too noticeable.
- They are used in sporting events like car racing to increase the viewer’s excitement of the race.
- They are used in drones to film the extent of flooding in remote districts.

Describe some ways digital cameras can be used which would cause people to think that their privacy is being invaded.

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[6]

9 A London based radio company is planning to cover the Commonwealth Games in Australia. Their staff will hold video-conferences with the games organisers.

(a) Describe what is meant by video-conferencing.

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..... [4]

(b) Describe **four** disadvantages to the radio company of using video-conferencing rather than face-to-face meetings in this scenario. A face-to-face meeting is when the staff attending the meeting are all together physically in one room.

1

2

3

4

..... [4]

10 A school is voting to see if they should change the timings of the school day or not. You have been asked by the head teacher to present the data from a number of opinion polls in the form of a graph. The data shows the changes in people's opinions over time. The data is stored in a spreadsheet. Part of the spreadsheet is shown.

	A	B	C	D	E	F	G
1		Opinion Poll					
2		For		Against		Don't know	
3	01/10/2018	45		38		17	
4	03/10/2018	41		41		18	
5	06/10/2018	43		40		17	
6	08/10/2018	40		42		18	
7	09/10/2018	43		40		17	
8	11/10/2018	41		41		18	
9	14/10/2018	52		32		16	
10	16/10/2018	41		42		17	
11	18/10/2018	42		41		17	
12	20/10/2018	44		41		15	

(a) Name the most appropriate type of graph or chart that would be used to present the data.

..... [1]

(b) The head teacher wishes the data to be presented as a graph to be shown at a public meeting. He requires a legend to be included in the graph.

Describe how you would produce the graph or chart of the data including the legend.

.....

 [5]

11 Security of data is a major concern for people using computer systems. One method of protecting the data is to use a strong password. This is an authentication technique.

(a) Name **three** other authentication techniques that could be used.

- 1
- 2
- 3 [3]

(b) A typical data protection act tries to protect the data of living individuals. One way of achieving this is by keeping data secure.

Identify **four** other principles of a typical data protection act.

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- 2
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- 3
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- 4
..... [4]

12 A Command Line Interface (CLI) is found in a computer system.

Describe the drawbacks of using a CLI.

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- [3]

- 13 Ana is the planning officer for car parking in Rio de Janeiro city centre. She is planning to upgrade the computerised parking meters. The new parking meters need to be tested. The cost of parking is shown below:

Parking Charges
R\$2 up to 2hrs parking
R\$4 up to 5hrs parking
R\$10 up to 24hrs parking
Maximum parking time is 24hrs.

The customer enters money into the machine and then pushes a button to print a ticket. If a customer enters more money than the charge for a time period, but less than the amount of money stated for the next time period, then a ticket is produced for the lower amount of time but no money is given back. Assume that R\$2 is the lowest charge and R\$10 is the highest charge.

- (a) Explain what is meant by the following three types of test data, using examples of the parking charges.

Normal

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Abnormal

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Extreme

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[6]

Having tested the system with normal and abnormal data Ana needs to test with live data.

- (b) Explain what is meant by live data.

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[2]

14 A company is concerned that hackers may gain access to its computer system or that it may be infected by a virus.

(a) Explain what is meant by a virus and how it affects the operation of a computer.

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..... [3]

(b) When hackers gain access to a computer system they could install key-logging software.

Explain how key-logging software works.

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..... [2]

15 A student is carrying out some research using the internet but is concerned about the reliability of some of the information he has found.

(a) Explain how he would assess the reliability of the websites where he has found information.

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(b) Apart from the reliability of information, discuss the benefits and drawbacks of students using the internet to carry out research.

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..... [8]

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