



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education

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**INFORMATION AND COMMUNICATION TECHNOLOGY**

**0417/12**

Paper 1

**October/November 2014**

**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 on all the work you hand in.

Write in dark blue or black pen.

You may use an HB pencil for any diagrams, graphs or rough working.

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.

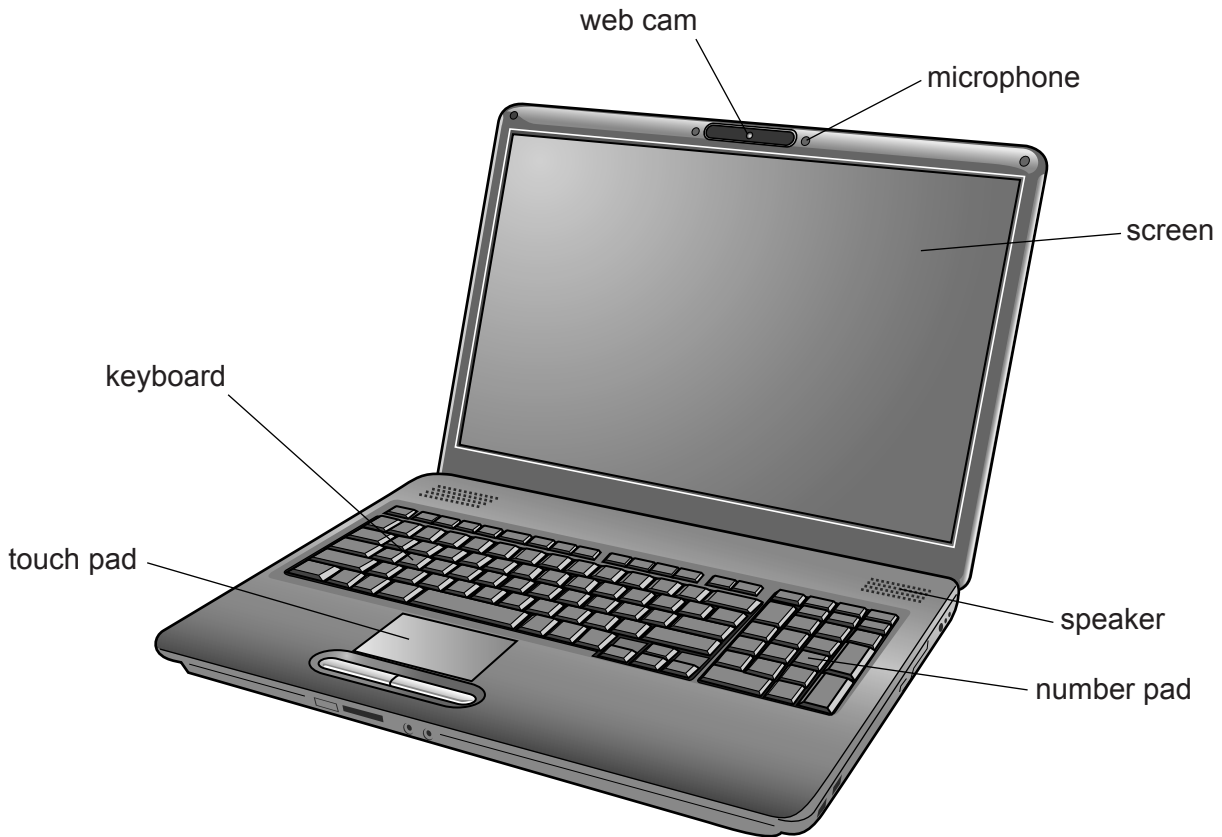
At the end of the examination, fasten all your work securely together.

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

This document consists of **13** printed pages and **3** blank pages.



1 This diagram shows a laptop computer.



(a) Name **two** input devices shown in the diagram above.

- 1 .....
- 2 ..... [2]

(b) Name **two** output devices shown in the diagram above.

- 1 .....
- 2 ..... [2]

2 Identify **two** storage media used to store data on a bank card.

- 1 .....
- 2 ..... [2]

3

3 Tick **two** appropriate uses of dot matrix printers.

	✓
Using Multipart stationery	
Producing high quality printouts	
Producing A0 printouts	
CAD applications	
Producing continuous printouts	
Producing printouts of photographs	

[2]

4 Complete the table below by identifying the **most** appropriate type of **software** which would be used to carry out each of the following tasks.

Software	Task
	Monitoring atmospheric pressure
	Keeping temperature constant in a greenhouse
	Modelling personal finances
	Creating a slideshow
	Finding information on the internet

[5]

5 Tick whether the following statements are TRUE or FALSE.

	TRUE ✓	FALSE ✓
Pen drives are used to make backups on large company file servers.		
Magnetic tapes use direct access when searching for records.		
Fixed hard discs have slower access times than optical discs.		
DVD RWs allow you to save new data to them.		
A CD has greater storage capacity than a DVD.		

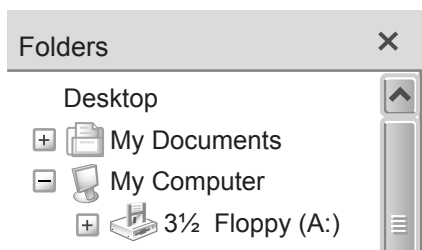
[5]

- 6 (a) Write down the type of interface shown in the picture below.



..... [1]

- (b) Write down the type of interface shown in the picture below.



..... [1]

- 7 Below is a spreadsheet containing data about a snack shop.

	A	B	C	D	E
1	Snack shop				
2	Item	Number in stock at start of week	Number sold	Number in stock at end of week	Sold more than 150?
3	Fruity bars	120	95	25	No
4	Cheesy chips	280	170	110	Yes
5	Muesli dips	295	125	170	No
6	Choco Lols	320	220	100	Yes
7					

- (a) Write down the number of columns shown in this spreadsheet.

..... [1]

- (b) Write down the cell reference of a cell containing an integer.

..... [1]

- (c) Write down one cell containing a label.

..... [1]

- (d) Write down the formula that should go in D4.

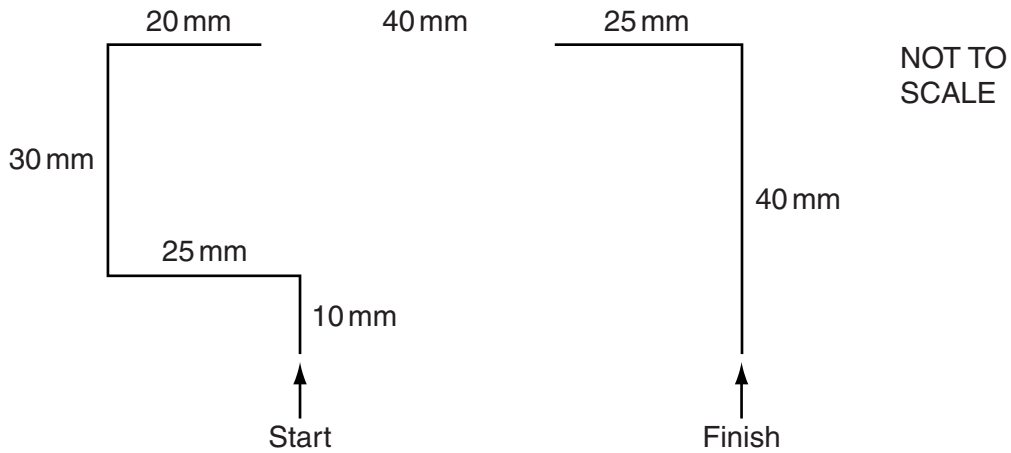
..... [2]

(e) Write down the formula that should go in E5.

..... [3]

8 A floor turtle can use the following instructions:

INSTRUCTION	MEANING
FORWARD $n$	Move $n$ mm forward
BACKWARD $n$	Move $n$ mm backward
LEFT $t$	Turn left $t$ degrees
RIGHT $t$	Turn right $t$ degrees
PENUP	Lift the pen
PENDOWN	Lower the pen



Complete the set of instructions to draw this shape by filling in the blank lines. The turtle is facing up at the start.

PEN DOWN .....

FORWARD 10 .....

LEFT 90 .....

FORWARD 25 .....

RIGHT 90 FORWARD 25

FORWARD 30 RIGHT 90

RIGHT90 .....

[5]

9 A number of schools have Local Area Networks (LANs) in their buildings. The LANs are used to share software and for students to save their work.

(a) Describe **two** ways that students can prevent the work they save from being edited by others.

1 .....

.....

2 .....

.....

[2]

The schools want to connect their LANs to the Internet.

(b) Name the device they will need.

..... [1]

As a result of all the schools having access to the Internet, students will be able to communicate with students at other schools in a number of ways.

(c) Give **two** examples of these ways.

1 .....

.....

2 .....

.....

[2]

The headteachers of the schools will want to send confidential data to each other.

(d) Give **one** advantage and **one** disadvantage of encryption.

Advantage .....

.....

Disadvantage .....

.....

[2]

10 A school is going to install a new computer system that uses WiFi. The headteacher is very concerned about the problems that the introduction of such a system will cause.

The safety issue of students tripping over trailing cables has been minimised by using WiFi, and the risk of electrocution has been minimised by the use of automatic circuit breakers.

(a) Give **two** other safety issues which might occur and for each one describe a method of preventing it.

Safety issue 1 .....

.....

Prevention .....

.....

Safety issue 2 .....

.....

Prevention .....

.....

[4]

(b) Describe what a virus is and explain how viruses cause problems for computer users.

.....

.....

.....

.....

.....

..... [3]

(c) If hackers get into the system, they may plant spyware. Describe what is meant by spyware.

.....

.....

.....

.....

.....

..... [3]

11 The owner of a shop wants a new computer system to store the records of all the stock and customers. The systems analyst will need to find out how the existing system works.

(a) Describe, **in detail**, **two** out of the four possible ways she could find out this information.

Way 1 .....

.....

.....

.....

Way 2 .....

.....

.....

.....

[4]

(b) After analysing the existing system, the systems analyst will design a database.

Identify **four** items that the systems analyst will need to design for the database.

1 .....

.....

2 .....

.....

3 .....

.....

4 .....

.....

[4]



After the system is designed, it will be developed, then implemented.

- (c) Name **two** methods, other than direct changeover, that could be used to implement the system and give an advantage for each method compared to direct changeover.

Method 1 .....

.....

Advantage .....

.....

Method 2.....

.....

Advantage .....

.....

[4]

- 12 A large multi-national company uses video conferencing instead of face to face meetings between branches in different countries.

- (a) Apart from a keyboard, mouse and display devices, identify **two** other devices which **must** be present in such a system for a video conference to take place.

1 .....

2 .....

[2]

- (b) Describe **four** disadvantages of video conferencing.

1 .....

.....

2 .....

.....

3 .....

.....

4 .....

.....

[4]

13 Tick **three** benefits of using computers to store patient records in hospitals.

	✓
Patients are always cured.	
Patient records can be sorted into order more easily.	
Doctors can find patient records more quickly.	
Patients' medicines are never lost.	
Fewer doctors are needed.	
Nurses don't have to be paid as much.	
Takes up less filing space.	

[3]

14 Students save and carry their work from school to home on a pen drive.

(a) Describe **two** advantages of a pen drive compared to a CD of doing this.

1 .....

.....

2 .....

.....

[2]

(b) Describe **two** disadvantages of a pen drive compared to a CD of doing this.

1 .....

.....

2 .....

.....

[2]

- 15** A supermarket uses a computerised stock control system.  
This is part of the supermarket's stock file.

Product number	Product name	Number_in_stock	Reorder_level
5011476130069	Wheaters	185	130
0000208097939	Cricket Tea	152	120
0001570248867	Geo garden peas	212	185

It has EFTPOS terminals at each of its checkouts.

- (a)** Write down the input devices used to read:

- (i)** The product numbers of the goods bought by customers

..... [1]

- (ii)** The customer's credit card details

..... [1]

- (b)** Name the validation check that would be carried out on the product number.

..... [1]

- (c)** Describe the computer processing involved in updating the stock file every time a product is sold and checking whether it needs re-ordering.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

(d) The customer has to type in the PIN to authorise the transaction.

Describe the check that is carried out by the EFTPOS terminal.

.....  
..... [1]

(e) After the checks on the customer's card have been completed, the supermarket computer contacts the customer's bank.

Describe the computer processing involved in taking payment from the customer's bank.

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
..... [4]

16 Describe what is meant by batch processing, using the processing of bank cheques as an example.

.....  
.....  
.....  
.....  
.....  
..... [3]

17 Many bank customers do their banking using the Internet at home. Many transactions can now be done without having to travel to the bank.

(a) Describe **three** types of transaction which they can do from home.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

(b) Identify **one** type of transaction which they cannot do from home.

.....

..... [1]

(c) Give **three** benefits to the **bank** of internet banking.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

(d) Give **three** drawbacks to the **bank** of internet banking.

1 .....

.....

2 .....

.....

3 .....

.....

[3]





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