



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

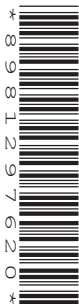
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NUMBER

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**INFORMATION AND COMMUNICATION TECHNOLOGY**

**0417/13**

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.

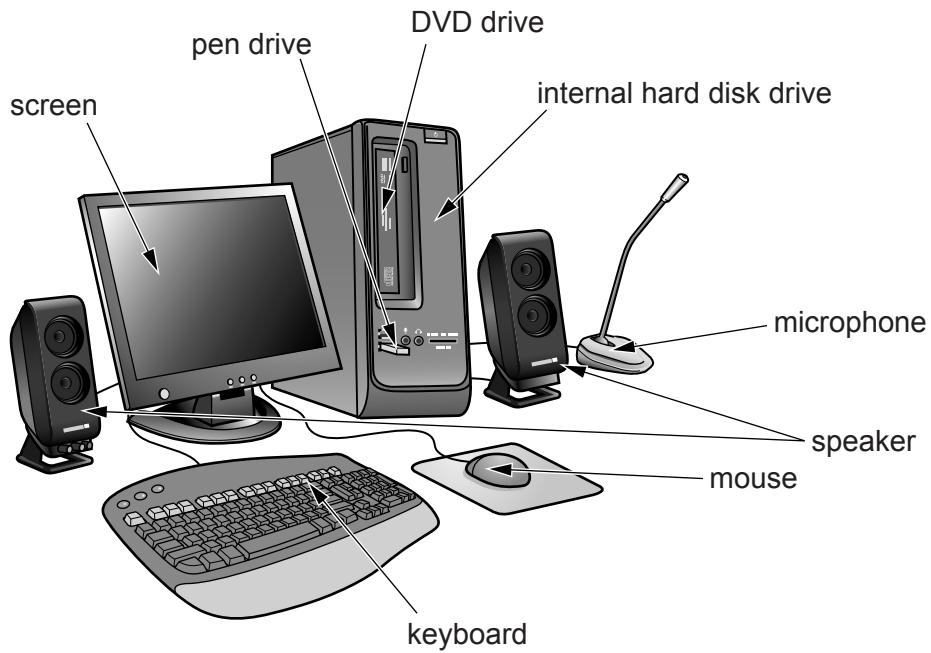
Answer **all** questions.

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 desktop 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]

(c) Name **two** storage devices shown in the diagram above.

1 .....

2 .....

[2]

2 Tick the **most** appropriate method of inputting data for the following applications.

Applications	OMR ✓	OCR ✓	MICR ✓
Reading data from bank cheques			
Reading data from candidate exam answer papers			
Inputting data ready for processing by a word processor			
Inputting pencil mark data from a school register			

[4]

3

3 Complete the table by identifying the **most** appropriate device for each use.

Device	Use
	printing on multipart stationery
	reading information from the front of bank cards
	making fileserver backup copies
	to read data from a product at a POS terminal

[4]

4 Many young people use social networking sites.

Tick whether the following statements are true or false.

	TRUE ✓	FALSE ✓
It is easy to keep in immediate contact with friends		
You can share photographs with friends		
You can do internet banking using a social networking site		
You can access everybody's personal details		

[4]

5 Complete the sentences using words from the list below.

(a) The type of processing used when booking an airline ticket is called .....[1]

(b) The type of access used on a magnetic tape is called .....[1]

(c) An item of hardware which can read temperatures is called a .....[1]

online

sensor

OCR

MICR

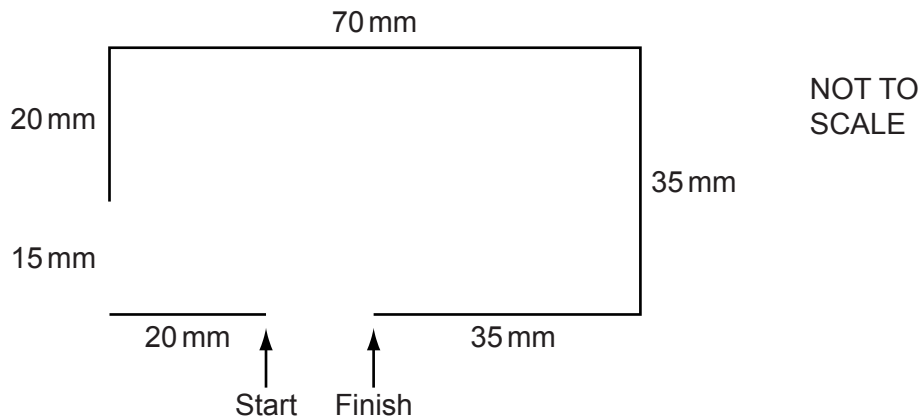
serial

batch

motor

6 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
REPEAT $n$	Repeat the following instructions $n$ times
END REPEAT	Finish the REPEAT loop



Complete the set of instructions to draw this shape by filling in the blank lines. You will need to use a **REPEAT** loop after the turtle has moved the 70 mm.

PEN DOWN	FORWARD 20
LEFT 90	RIGHT 90
FORWARD 20	.....
RIGHT 90	.....
.....	RIGHT 90
.....	FORWARD 35
.....	.....

[6]

7 A meal is to be cooked using a microprocessor controlled oven.

(a) Identify **two** variables which have to be pre-set before the cooking begins.

1 .....

2 .....

[2]

(b) Describe the role of the microprocessor in controlling the oven.

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

[5]

8 The English teacher stores details of her students' exam scores in a spreadsheet. The exam is marked out of 80 and the results are typed into the Exam result column.

	A	B	C	D
1	Name	Form	Exam result	Pass/Fail
2				

(a) The teacher wants to use a validation check which only allows numbers between 0 and 80 to be typed in. What is the name of this type of validation check?

.....[1]

(b) She types in the following exam results to test that the validation works:

0, 25, 80 and 87.

Using the data above write down **one** example of:

(i) normal data

.....

(ii) extreme data

.....

(iii) abnormal data

.....

[3]

The teacher decides that the pass mark for the exam should be 45. Depending on the number of marks each pupil gets, the word 'Pass' or the word 'Fail' will appear in the Pass/Fail column.

(c) Write down the formula which should appear in cell D2.

.....

..... [3]

(d) Explain how she can replicate the formula in the 30 cells below D2.

.....

.....

.....

.....

.....

.....[3]

- (e) Give **two** reasons, apart from safety, why computer models are often used rather than the real thing.

1 .....

.....

2 .....

.....

[2]

- 9 Complete each sentence below using one item from the list.

**analysis**

**a flowchart**

**hacking**

**a virus**

**implementation**

**data logging**

**encryption**

**a password**

**the world wide web**

- (a) A program can be designed using .....
- (b) Observing the current system in use is part of .....
- (c) Gaining access to somebody else's work without permission is called .....
- (d) Reducing unauthorised access can be achieved by asking for .....

[4]

- 10 Tick **four** benefits to banks of using ICT.

	✓
Higher charges can be made	
They have fewer bad risks	
Less paid out in wages as fewer staff need to be employed	
Lower costs as fewer buildings need to be rented	
A wider customer base is available	
Mistakes are never made	
Less actual cash handled so there are fewer robberies	
The initial cost of hardware is cheap	

[4]

11 A car manufacturer uses robots on its production line.

(a) Describe **four** disadvantages to the company of using robots to build cars.

- 1 .....
- .....
- 2 .....
- .....
- 3 .....
- .....
- 4 .....
- .....
- [4]

(b) Identify **two** changes to the workers' working environment that the use of robots has brought about.

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

12 Tick **two** applications which use on-line processing.

	✓
Producing the payroll	
Producing utility bills	
Printing credit card statements	
Paying for goods using EFTPOS	
Processing bank cheques overnight	
A microprocessor controlled greenhouse	

[2]



- 13 A sports club uses a computer database to keep records of members in one file and records of the sport bookings in another file. Here is a record in the sport bookings file.

Sport	Venue	Sport code	Member number
Football	Sports Hall	SHF10	543210

- (a) The members file and the sport bookings file will be saved as separate tables. Describe other steps which would be required in order to create a relational database.

.....

.....

.....

..... [2]

- (b) Give **two** advantages of creating and using a relational database compared to using two flat files.

.....

.....

.....

..... [2]

- (c) Explain why a hard disk is used to store the data files.

.....

.....

.....

.....

.....

..... [3]

- (d) The member number varies between 500000 and 549999.  
All sport codes consist of three letters followed by two numbers.

Name an appropriate validation check for each of the member number and the sport code. Do not use the same check twice.

Member number .....

Sport code .....

[2]

- (e) When members make a booking, they will show their membership card which holds their details electronically. Name the device which will be used to input their details from the card.

..... [1]

- (f) Give **two** reasons why this method is better than typing the number in.

1 .....

.....

2 .....

.....

[2]

When the system was implemented the systems analyst gave some documentation to the sports club owner.

- (g) Name **three** different items found in the user documentation.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

(h) Name **three** different items in the technical documentation which are not present in the user documentation.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

14 Describe the differences between an intranet and the Internet.

.....

.....

.....

.....

.....

.....

.....

..... [4]

15 The use of microprocessor-controlled devices in the home affects an individual's leisure time, social interaction and the need to leave the home.

(a) Give **three** advantages to the individual when microprocessor-controlled devices are used in the home.

- 1 .....
- .....
- 2 .....
- .....
- 3 .....
- .....

[3]

(b) Give **three** disadvantages to the individual when microprocessor-controlled devices are used in the home.

- 1 .....
- .....
- 2 .....
- .....
- 3 .....
- .....

[3]

16 Describe **three** ways in which personal data held on computers can be misused. For each way explain a different method for helping to prevent it.

Way 1 .....

.....

Method 1 .....

.....

Way 2 .....

.....

Method 2 .....

.....

Way 3 .....

.....

Method 3 .....

.....

[6]

17 RAM and ROM are part of Immediate Access Memory.  
Explain why computer systems have both backing storage and Immediate Access Memory.

.....

.....

.....

.....

.....

.....

.....

.....

[4]





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