UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME	

| CENTRE NUMBER | | | | | | CANDIDATE NUMBER | | | |

INFORMATION AND COMMUNICATION TECHNOLOGY

Paper 1

0417/13

October/November 2012

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 a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, 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.

For Examiner's Use

This document consists of **14** printed pages and **2** blank pages.

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International Examinations

[Turn over

1 Name the devices **A**, **B**, **C** and **D** using the words from the list.

A   **B**

C   **D**
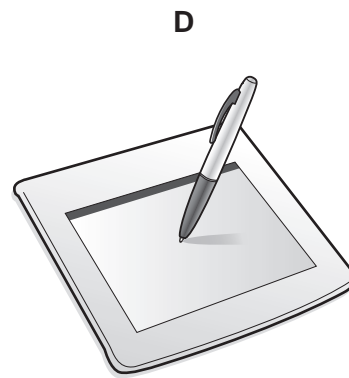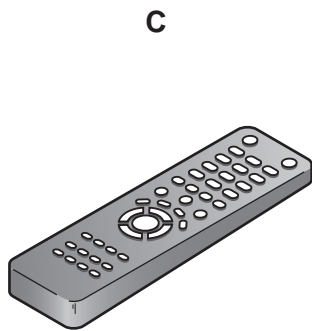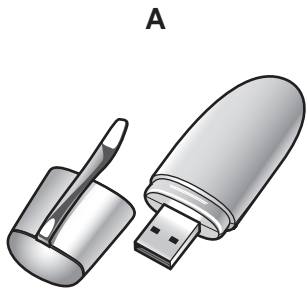
bar code reader   **chip reader**   **graphics tablet**   **laser printer**

magnetic stripe reader   **pen drive**   **remote control**   **touch pad**

A ....   B ....

C ....   D ....

[4]

2 Ring **two** network devices.

CD RW   **hard disc**   **hub**

PIN   **plotter**   **switch**

[2]

3   Tick whether the following items will appear in **User** or **Technical** documentation.

	User	Technical
frequently asked questions		
program coding		
system flowcharts		
trouble-shooting guide		

[4]

4   Complete each sentence below using **one** item from the list.

a bar code reader   **a CD ROM**   **an inkjet printer**

a keyboard   **a knowledge base**   **a magnetic hard disc**

   (a) The **most suitable** storage medium for storing data
        on a network server is   ....

   (b) Lists of illnesses and their symptoms are stored as   ....

   (c) An optical disc which cannot have data updated is   ....

   (d) Photos are output using   ....

[4]

5   Draw **five** lines on the diagram to match the software to its most **appropriate** use.

                         Software   Use

Desktop publishing software   **keeping a record of phone numbers**

        Measuring program   **matching illnesses to symptoms**

     Presentation software   **producing a multimedia slideshow**

          Inference engine   **monitoring the weather**

              Database   **producing a magazine**
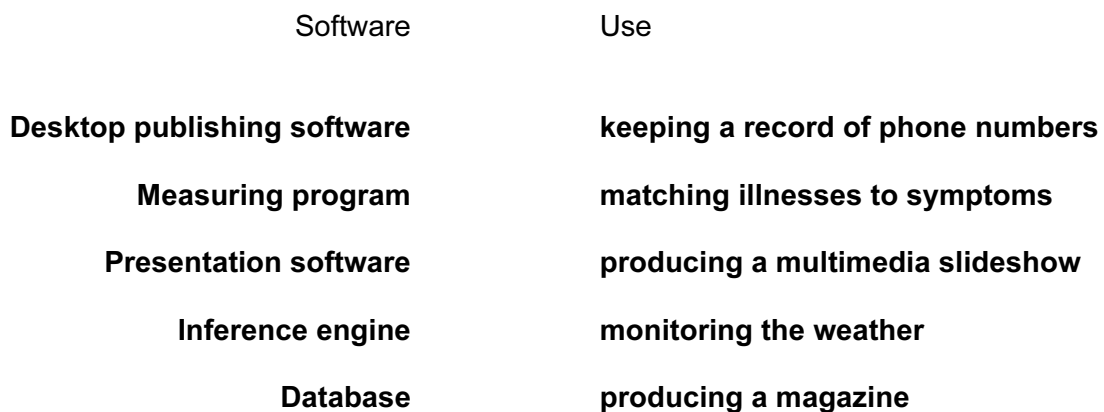
[5]

6   Tick whether the following statements apply to a **CLI** (Command Line Interface) or a **GUI** (Graphical User Interface).

	CLI	GUI
Instructions must be typed to get a computer to carry out an action.		
Icons represent programs.		
It is more important that users understand how a computer works.		
Menus are offered to help choose an action.		

[4]

7   A student wishes to use floor turtle to draw this shape:

Name and explain the meaning of **four** instructions that the turtle graphics software would need to contain in order to draw the shape. No two lines are the same length.

Start   Finish
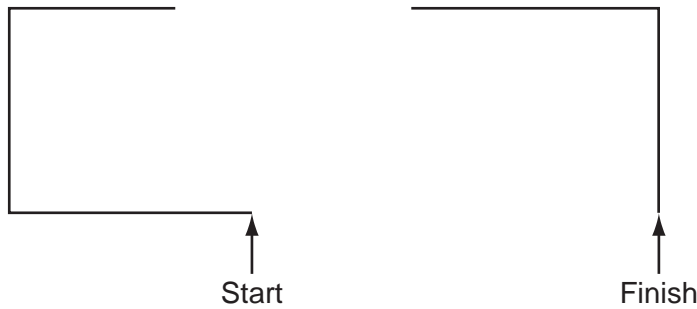
Instruction 1 ....

Meaning ....

Instruction 2 ....

Meaning ....

Instruction 3 ....

Meaning ....

Instruction 4 ....

Meaning ....

.... [8]

8 A greenhouse is controlled by a microprocessor.

   (a) Tick **three** physical variables that would be monitored.

	✓
Humidity	
Temperature	
Pressure	
Wind speed	
Light	
Wind direction	

[3]

   (b) Explain the difference between measurement and control.

   [2]

   (c) Give **four** advantages of using a computer rather than allowing the students to control the growing conditions.

   1

   2

   3

   4

   [4]

9 A sports shop owner uses a spreadsheet to calculate his profits. This is part of the spreadsheet.

	A	B	C	D	E
1	**Item**	**Selling Price**	**Cost price**	**Profit per item**	**Number in stock**
2	Kino Trainers	$45.00	$40.00	$5.00	126
3	Goalagame Boots	$44.00	$38.00	$6.00	145
4	Melchester Rovers shirt	$78.00	$65.00	$13.00	104
5	IOM football	$51.00	$42.00	$9.00	56
6	Beckett shinpads	$40.00	$32.00	$8.00	101

(a) Give the cell reference of the cell that contains $42.00

.... [1]

(b) Give the cell reference of a cell that contains an integer.

.... [1]

(c) How many rows are shown in the spreadsheet?

.... [1]

(d) Write down the formula which should go in cell D2.

.... [1]

(e) When the spreadsheet was created a similar formula to D2 had to go in cells D3 to D6. Describe how to enter these formulae without typing them.

....

....

....

.... [2]

(f) This spreadsheet is an example of a financial model.
Give **two** examples of computer models, other than financial models.

1 ....

....

2 ....

.... [2]

(g) Tick **three** reasons why computer models are used.

	✓
The real thing may need too large a timescale.	
Computer models waste a lot of raw materials.	
The real thing is quicker to build.	
If a computer model fails it does not need rebuilding.	
Once a computer model is built it does not cost a lot to run.	
A model does not cost anything to make.	

[3]

                                       [Turn over

10 Aftab owns a company which has a small network of computers.

(a) Give **two** advantages of having computers networked.

1 ....

....

2 ....

.... [2]

He wants to connect the computers to the internet.

(b) Name the device he would need to be able to do this.

.... [1]

(c) Give **two** benefits and **two** drawbacks of connecting to the internet.

Benefit 1 ....

....

Benefit 2 ....

....

Drawback 1 ....

....

Drawback 2 ....

.... [4]

11 Many banks offer internet banking. To access this online service customers have to log on to the system.

(a) Explain why authentication techniques are necessary.

....

....

....

....

....

.... [3]

(b) Customer data is encrypted. Explain what encryption is and why it is used.

....

....

....

....

....

.... [3]

12 The growth of the internet has led to many new developments.

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Explain what the following terms mean.

Spyware ....

....

....

....

Spam ....

....

....

....

Social networking site ....

....

....

.... [6]

13 Anya has employed Raymond, a systems analyst, to create a new database system for sports day at her school. Here are some of the questions teachers and students might ask about the results of the athletics competition:

What position did Peter Njoka come in the 100 metres?
Who won the 1500 metres?
The winner of the 800 metres was wearing which Race ID?

Each athlete wore a Race ID consisting of one letter followed by three digits. The longest race is the 1500 metres.

(a) Complete the design table below filling in the field names and the **most** appropriate data types to create a database which would answer these questions.

Field name	Data type
Race_ID	

[7]

(b) Name and describe the most appropriate validation check which would be carried out on the Race_ID field.

Name ....

Description ....

.... [2]

(c) Anya wants to have a system which will make it easy to enter data.
Describe **five** features of a well designed input screen.

1 ....

....

2 ....

....

3 ....

....

4 ....

....

5 ....

.... [5]

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14 Sarbjit has a desktop computer at home which he uses for internet banking.

(a) Identify **two** other computer systems he could use to do internet banking when away from home.

1 ....

....

2 ....

.... [2]

(b) Discuss the advantages and disadvantages to banks of using internet banking.

....

....

....

....

....

....

....

....

....

....

.... [6]

For Examiner's Use

15 Give **four** advantages to bank customers of using ATMs rather than going to the bank to withdraw cash.

1 ....

....

2 ....

....

3 ....

....

4 ....

.... [4]

16 Some mobile telephones (cell phones) can be used to make video calls.
Describe **four** advantages of making video calls rather than sending messages by email.

1 ....

....

2 ....

....

3 ....

....

4 ....

.... [4]

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