UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME	

CENTRE NUMBER		CANDIDATE NUMBER	

INFORMATION AND COMMUNICATION TECHNOLOGY **0417/12**

Paper 1 **October/November 2013**

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.

UNIVERSITY *of* CAMBRIDGE
International Examinations

[Turn over

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

A

B
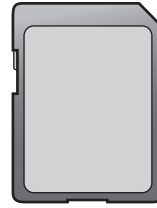
C

D

blu-ray disc   **chip**   **flash memory card**   **hard disc**

magnetic stripe   **magnetic tape**   **pen drive**   **touch pad**

A ....

B ....

C ....

D ....

[4]

2 Ring **two** items which are output devices.

disc drive   **laser printer**   **light pen**

microphone   **TFT monitor**   **web cam**

[2]

3 Tick **hardware** or **software** next to each item as appropriate.

	hardware	software
virus checker		
keyboard		
chip		
mobile phone		

[4]

4 Complete the following sentences using the **most appropriate** device from this list.

A graphics tablet   **A dot matrix printer**   **An inkjet printer**

A joystick   **A keypad**   **A multimedia projector**

(a) .... is used to print high quality photographs.

(b) .... is used to input freehand drawings.

(c) .... is used to input preset values into control systems.

(d) .... is used to show slides.

(e) .... is used to control a flight simulator.

[5]

5 Name and describe **three** ICT methods which could be used to help prevent illegal access to computer networks.

1 ....

....

....

2 ....

....

....

3 ....

....

.... [6]

6 Describe **three** features of a social network site.

1 ....

....

2 ....

....

3 ....

.... [3]

7   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

Finish

60   70   30

30

NOT TO
SCALE

80

60°

Start
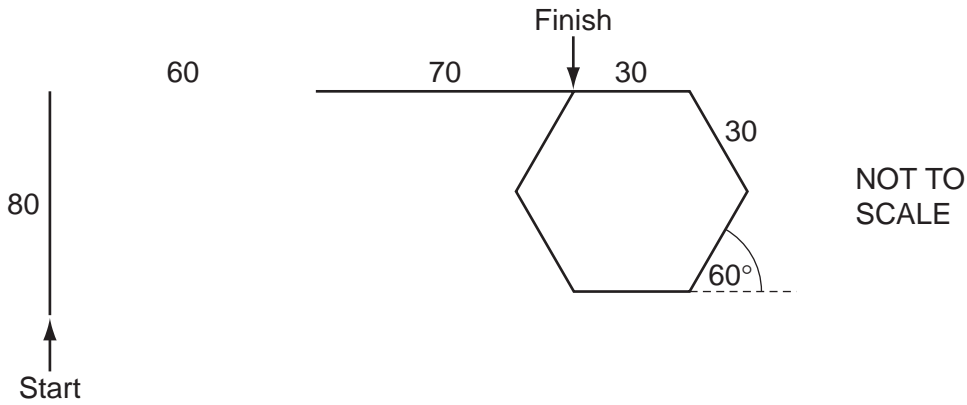
Complete the set of instructions to draw this shape by filling in the blank lines provided. Do **not** use additional lines.

PENDOWN   FORWARD 70

FORWARD 80   ....

....

....

....

....

[8]

8 There is a public library in New York. The librarian uses a computer to keep records of borrowers as well as records of the books in the library.

(a) The borrower file is stored on a hard disc.

State the type of access needed to retrieve a single record quickly.

.... [1]

(b) When a borrower comes in for a book they show their membership card.

Give a method of data input which could be used instead of typing in the borrower's membership number.

.... [1]

(c) Give **two** reasons why your method in **(b)** is better than typing in the membership number.

1 ....

....

2 ....

.... [2]

(d) Describe how the librarian could create a relational database using the data already held in the borrower file and the book file.

....

....

....

....

....

.... [3]

9 Describe, including the uses of the hardware and software, what is meant by video conferencing.

....

....

....

....

....

....

....

....

....

.... [5]

10 There are many safety issues associated with the use of computers.

Tick **three** of these issues.

	✓
Back ache from bad posture	
Electrocution from touching bare wires	
Fire from overloading electric sockets	
Headaches from staring at the screen continuously	
Injury caused by tripping over trailing wires	
RSI in the fingers	

[3]

11 A greenhouse is controlled by a computer.

(a) Other than a temperature sensor name **two** sensors used in the greenhouse.

1 ....

2 .... [2]

(b) Explain why computers are unable to read the data directly from these sensors.

....

....

....

.... [2]

(c) Describe what is meant by a pre-set value and how it is used by the computer to help it control the temperature of the greenhouse.

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.... [4]

12 A store uses EFTPOS terminals at all of its checkouts.

(a) Identify **two** input devices which would be used at each EFTPOS.

1 ....

2 .... [2]

(b) Describe the computer processing which takes place in order to determine if a product needs re-ordering.

....

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....

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....

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.... [4]

 [Turn over

13 Abdul owns a large factory. He has asked Imran, a systems analyst, to create a new database system for keeping records of his workers and their pay.

(a) Imran will collect information about the existing system.

Identify **three** methods he would use to do this.

1 ....

2 ....

3 .... [3]

After collecting information, Imran found that each worker has an ID which consists of one letter followed by five digits. He also found that no worker earns more than $500.

He wrote down two of the questions that Abdul might ask when using the database, such as:

What is the phone number of the worker whose ID is L67123?
How much does Sunil Kapoor earn?

(b) Complete the data dictionary table below giving the field names which would be used in the database in order to answer these questions. State the data types which would be used for each field.

Field name	Data type
First_name	
	Text
Phone_number	
Worker_ID	

[6]

(c) Identify **three** items of **test data** which could be used to test the Worker_ID field, giving a reason for each choice.

Item 1 ....

Reason ....

....

Item 2 ....

Reason ....

....

Item 3 ....

Reason ....

.... [6]

 [Turn over

14 Joanne runs a large company. Her computer network has a large capacity server. She is investigating ways of backing up the data on the server.

(a) Describe what is meant by a backup.

....

....

....

.... [2]

(b) Joanne has to choose between using magnetic disc or magnetic tapes to make her backups.

Discuss the advantages and disadvantages of using each of these media.

....

....

....

....

....

....

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....

....

....

.... [6]

15 Explain the differences between phishing and pharming.

....

....

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....

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.... [4]

16 A company decides to introduce robots to the production line to manufacture cars.

Discuss the advantages and disadvantages to the workers of introducing robots rather than using humans to manufacture cars.

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.... [5]

17 Describe some of the benefits and drawbacks of students using the Internet to do research for homework.

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.... [7]

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