UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

INFORMATION AND COMMUNICATION TECHNOLOGY   **0417/11**

Paper 1   **October/November 2010**

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.

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 **12** printed pages.

UNIVERSITY *of* CAMBRIDGE
International Examinations

[Turn over

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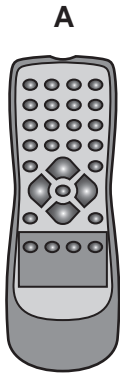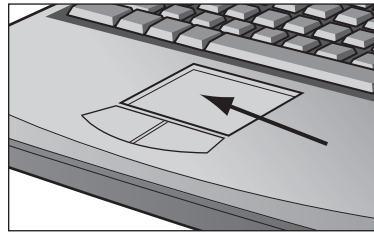
| **A** | **B** | **C** | **D** |

| **Light pen** | **Microphone** | **Numeric keypad** | **Remote control** |

| **Scanner** | **Touch pad** | **Trackerball** | **Web cam** |
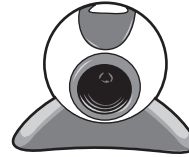
A ....

B ....

C ....

D ....

[4]

2 Ring **two** items which are storage media.

| **Bar code reader** | **DVD RAM** | **Joystick** |

| **Magnetic tape** | **Sensor** | **Touch screen** |

[2]

3 Tick **TRUE** or **FALSE** next to each of these statements.

	TRUE	FALSE
DTP software can be used with sound files.		
Measurement software is used to send emails.		
Spreadsheet software is used to create models.		
A command line interface can be used to communicate with a computer.		
PDAs are usually bigger than laptops.		

[5]

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

A chip reader	**A digital camera**	**A graph plotter**
A graphics tablet	**A joystick**	**A laser printer**
A multimedia projector	**An optical mark reader**	**A temperature sensor**
A TFT monitor		

(a) .... is used to send data to a microprocessor controlled cooker.

(b) .... is used to read details from a bank card.

(c) .... is used to control a car driving simulator.

(d) .... is used to take photographs for inclusion in a web site.

(e) .... is used to input data from a school register.

[5]

5 Tick **three** items of software which a PC connected to the internet might use.

	✓
A modem	
A virus scanner	
An email package	
Another PC	
A browser	
A keyboard	

[3]

6 A school has a database which includes details of every student. Tick whether the following statements refer to a file, a field or a record.

	Field	File	Record
All the information about one student.			
One piece of information about each student.			
A primary key.			
All the information about all the students.			

[4]

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

60°

50 mm

Start
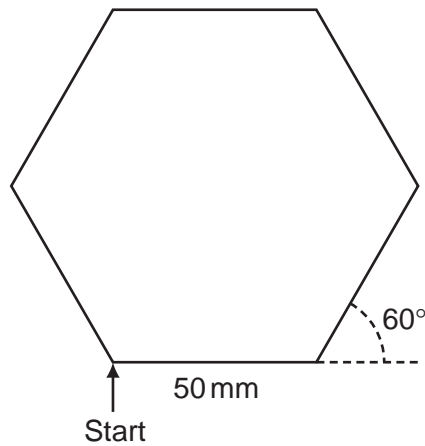
Complete the set of instructions to draw this shape by filling in the blank lines.

PEN DOWN

.... 90

REPEAT   ....

FORWARD   ....

.... 60

....

[5]

8 Tick **TRUE** or **FALSE** next to each statement to indicate if it is an example of online processing.

	TRUE	FALSE
Computerised booking of a theatre ticket.		
Clearing cheques overnight.		
Paying at a supermarket using Electronic Funds Transfer.		
Printing monthly credit card bills.		

[4]

9 Multi-national companies often use video conferencing instead of face-to-face meetings.

(a) Tick **three** advantages of video conferencing.

	✓
Companies don't have to employ so many workers.	
Companies can call meetings at short notice.	
Employees don't have to prepare for meetings.	
Companies do not have to pay travelling expenses.	
Employees can work from home.	
Companies don't have to have any offices.	

[3]

(b) Tick **three** disadvantages of video conferencing.

	✓
It is difficult to call international meetings because of time differences.	
Employees can't see the documents which are being discussed.	
The initial cost of hardware can be expensive.	
There is a loss of personal and social contact.	
Companies are unable to contact the employees about having a conference.	
Companies have to hire expensive halls.	

[3]

10 Write down the most suitable data type for each item of data in the table below.

Registration number	Day/Month/Year of manufacture	Doors	Air conditioning (Y/N)
KAC 758F	12/10/1991	4	Y
KAR 815P	03/06/2005	5	N
KAB 179A	05/08/1990	5	N
KAP 613Y	11/08/2004	3	N

Registration number   ....

Day/Month/Year of manufacture   ....

Doors   ....

Air conditioning   ....

[4]

11 All computers come with main memory as well as backing storage. Give a reason why the following are needed.

RAM ....

....

ROM ....

....

Backing storage ....

.... [3]

12 Car mechanics often use expert systems to diagnose faults with car engines. List **four** parts of an expert system.

1 ....

2 ....

3 ....

4 .... [4]

13 Draw **four** lines on the diagram to match the use to its most **appropriate** storage medium.

Use	Storage medium

storing data in online applications   **DVD ROM**

to store data that cannot be changed   **Fixed hard disc**

saving work and transporting it to other computers   **Magnetic tape**

taking backups of file servers   **Pen drive**

[4]

14 (a) Give **two** uses of ICT devices which, when prolonged, can cause RSI.

1 ....

....

2 ....

.... [2]

(b) Identify **two** safety issues and how they are caused.

1 ....

....

2 ....

.... [2]

                                       [Turn over

15 A large company has two separate sites both of which have a LAN. The manager of the company wants to connect the LANs to form a WAN.

(a) Name **three** network devices which could be found in a LAN that is not connected to a WAN.

1 ....

2 ....

3 .... [3]

(b) The manager wants to buy a router to connect the LANs. Describe the function of a router.

....

....

....

.... [2]

(c) The company's workers are concerned that their data may not be secure.
Name **three** authentication techniques and for each one explain how it will help to prevent illegal access to the data.

1 ....

....

....

....

2 ....

....

....

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3 ....

....

.... [6]

16 When a new system is implemented, documentation is provided with it. Explain why **two** different types of documentation are produced.

....

....

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....

.... [4]

17 (a) Explain what is meant by a computer virus.

....

....

....

.... [2]

(b) Explain what is meant by hacking.

....

....

....

.... [2]

18 Aysha needs to enter customer details into her company's database. She has asked her friend Ali to design an input screen to enable her to do this. She is not pleased with his attempt.

Name _____

Address _____

Date of birth _____ / _____ / _____

Customer ID _____

Type in male or female _____

Type in **next** for next record or **back** for previous record _____

(a) Describe **five** improvements which could be made to this screen.

1 ....

....

2 ....

....

3 ....

....

4 ....

....

5 ....

.... [5]

(b) The new system will be tested. The month part of the date of birth field must be a whole number between 1 and 12 inclusive. Using this as an example, describe the following three types of test data.

    (i) Abnormal data ....

      ....

      ....

      .... [2]

    (ii) Normal data ....

      ....

      ....

      .... [2]

    (iii) Extreme data ....

      ....

      ....

      .... [2]

19 Describe **three** actions which might need to be taken as a result of testing a system.

    1 ....

    ....

    2 ....

    ....

    3 ....

    .... [3]

20 A group of car mechanics has decided to buy a new printer for their workshop. Discuss the different options which are available in terms of a laser printer, inkjet printer and dot matrix printer.

....

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....

....

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....

....

....

....

....

.... [6]

21 Describe **four** advantages of using mobile phones to speak with other people rather than sending emails using a laptop.

1 ....

....

2 ....

....

3 ....

....

4 ....

.... [4]