CANDIDATE
NAME

CENTRE
NUMBER

CANDIDATE
NUMBER

INFORMATION AND COMMUNICATION TECHNOLOGY **0417/13**

Paper 1 **May/June 2011**

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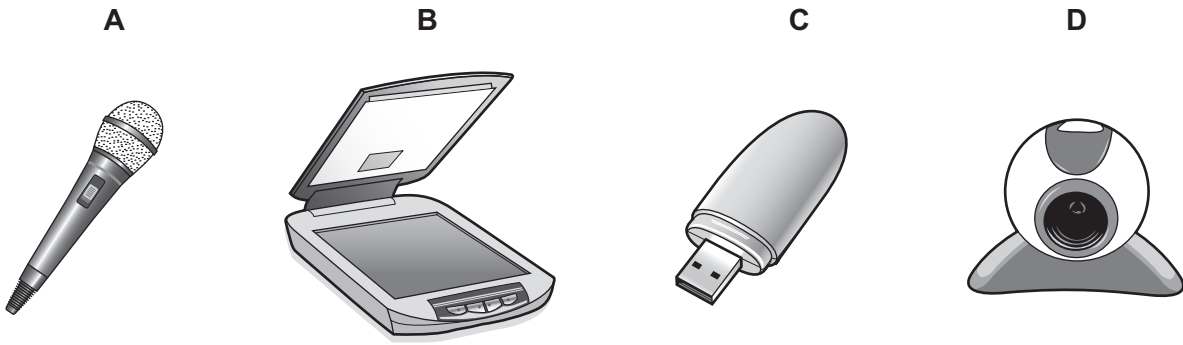
| **A** | **B** | **C** | **D** |

| **Digital camera** | **Joystick** | **Microphone** | **Pen drive** |

| **Scanner** | **Touch pad** | **Trackerball** | **Webcam** |

A ....   B ....

C ....   D ....

[4]

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

| **Flash memory card** | **Graph plotter** | **Graphics tablet** |

| **Laser printer** | **Magnetic disc** | **Touchpad** |

[2]

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

	TRUE	FALSE
Presentation software is used to create slide shows		
Laptop computers do not have USB ports		
DTP software can be used to produce databases		
Measurement software is used to create magazines		
Buzzers are input devices		

[5]

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

A bar code reader	**A dot matrix printer**	**A graphics tablet**
A laser printer	**A microphone**	**A multimedia projector**
A presence check	**A speaker**	**A temperature sensor**
A web cam		

(a) .... is used to input data about products at a POS.

(b) .... is used to produce high quality hard copy.

(c) .... sends data to a microprocessor in a washing machine.

(d) .... is used to input freehand drawings to a computer.

(e) .... is used to output sounds from the computer.

[5]

5   A school teacher is creating a slide show to describe a typical week in her life.

(a) Tick **three** items of hardware which she would use.

	✓
Database	
Keyboard	
Spreadsheet	
Animation	
Microphone	
Video camera	

[3]

(b) She has been advised that it could be easier to use a Blog rather than create a slide show.
Give **one** advantage and **one** disadvantage of using a Blog.

Advantage of Blog ....

....

Disadvantage of Blog ....

.... [2]

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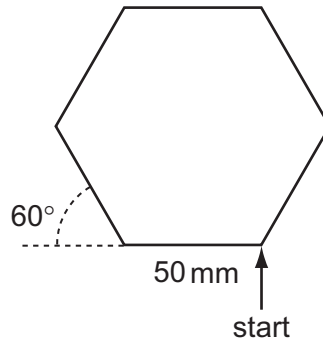
Complete the set of instructions to draw this shape by filling in the blank lines.

PEN DOWN

.... 90

REPEAT ....

.... 50

RIGHT ....

....

[5]

7   Draw **four** lines on the diagram to match the use to its most **appropriate** output device.

Use   Output device

to produce very large high quality hard copy   dot matrix printer

to display data from a computer on to a large screen   plotter

to alert mobile phone users to incoming calls   multimedia projector

to output multipart forms   buzzer

[4]

8   A school keeps records of its students, using many different types of data. Explain what is meant by Boolean, alphanumeric and numeric data, using examples of student data.

(a) Boolean

Meaning   ....

....

Example   ....

....

(b) Alphanumeric

Meaning   ....

....

Example   ....

....

(c) Numeric

Meaning   ....

....

Example   ....

.... [6]

9 Tick **TRUE** or **FALSE** next to each statement.

	TRUE	FALSE
Records are updated immediately when using online processing		
A transaction file is often created when batch processing is used		
The processing of bank cheques is an example of batch processing		
Batch processing is needed for operating ATMs		

[4]

10 A group of doctors want to have an expert system to help them with their diagnoses. Describe how such a system would be created.

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.... [5]

11 The manager of a bookshop uses a database to store data about the books she sells. This is part of the database.

Title of book	Fiction (Y/N)	Number in stock	Next order due
Full Circle	N	15	20/06/11
Sanditon	Y	18	08/07/11
Vanity Fair	Y	23	16/10/11
The Old Curiosity Shop	Y	10	23/06/11
Pride and Prejudice	Y	12	23/06/11
Sense and Sensibility	Y	26	02/10/11
The Moon's a Balloon	N	12	21/08/11

(a) How many fields are there in this part of the database?

.... [1]

(b) How many records are there in this part of the database?

.... [1]

(c) The records shown are to be sorted in ascending order of **Number in stock**. What will be the title of the book which will be the first record in the database after it has been sorted?

.... [1]

(d) What is the title of the book which has no more than 12 copies in stock and is not Fiction?

.... [1]

(e) Describe a validation check which could be carried out on the **Next order due** field.

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.... [3]

12 The main memory in computers is becoming very large. Give **three** reasons why backing storage is still needed.

1 ....

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2 ....

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3 ....

.... [3]

13 A large company has a LAN. The manager of the company wants to allow all the network users to access the internet and communicate with other companies.

(a) Describe the hardware and software he would need in order to achieve this.

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.... [4]

(b) Give **three** disadvantages to the manager of allowing workers to access the internet.

1 ....

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2 ....

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3 ....

.... [3]

14 Describe **two** safety issues, caused by working with computers. For each safety issue give a method of prevention. Do not use the same method for both answers.

Safety issue 1 ....

....

Method of prevention ....

....

Safety issue 2 ....

....

Method of prevention ....

.... [4]

15 Eric wants to type in details of new customers into a database. He needs to design an on-screen input form.

Describe **four** features, apart from navigational aids, of a well-designed on-screen input form.

1 ....

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2 ....

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3 ....

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4 ....

.... [4]

16 After a system has been implemented it needs to be tested. Describe two testing strategies and state a reason why each is needed.

(a) Strategy 1 ....

....

Reason 1 ....

.... [2]

(b) Strategy 2 ....

....

Reason 2 ....

.... [2]

17 Many homes now have microprocessor controlled burglar alarm systems.

(a) Name **two** sensors used in such a system and for each explain what it is used for.

Sensor 1 ....

....

Use ....

....

Sensor 2 ....

....

Use ....

.... [4]

(b) Describe the role of the microprocessor in such a system.

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.... [4]

(c) There are many microprocessor controlled devices in the modern home. Describe the effects of these on people's lifestyles.

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.... [4]

18 A head teacher wants to send the school magazine to parents. Discuss the advantages and disadvantages of sending it by email or delivering it by hand.

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.... [6]

19 International companies may use video conferencing instead of face to face meetings.

(a) Describe the use of **three** hardware devices in video conferencing.

1 ....

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2 ....

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3 ....

.... [3]

(b) Describe **two** advantages to the company of such a system.

1 ....

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2 ....

.... [2]

20 Encrypted data is used in on-line banking. Describe encryption.

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.... [3]

15

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