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 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 **12** printed pages.

UNIVERSITY *of* CAMBRIDGE
International Examinations

**[Turn over**

**2**

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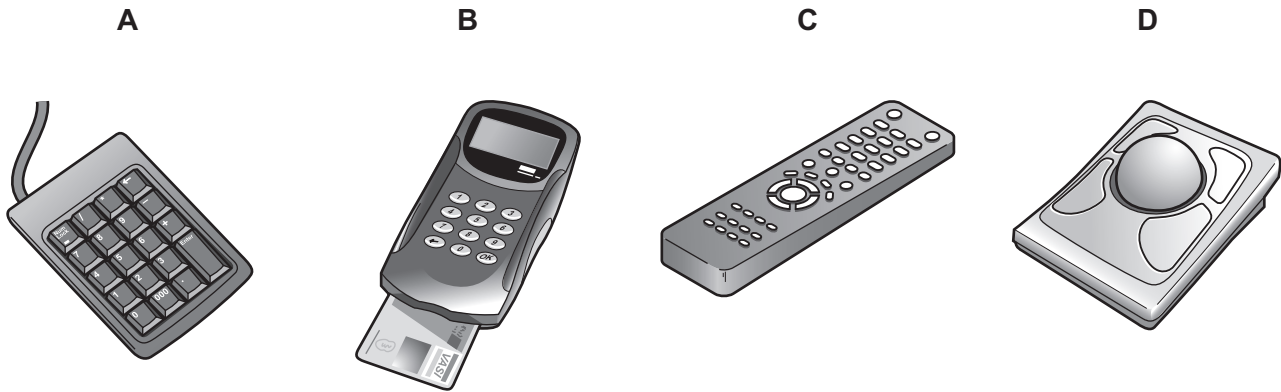
|   A   |   B   |   C   |   D   |
|-------|-------|-------|-------|

**Bar code reader**          **Chip reader**          **Graphics tablet**          **Laser printer**

**Magnetic Stripe Reader**          **Numeric keypad**          **Remote control**          **Trackerball**

A .................................................          B .................................................

C .................................................          D .................................................

[4]

2 Ring **two** network devices.

**Bridge**                    **DVD R**                    **Light pen**

**Magnetic tape**                    **Printer**                    **Switch**

[2]

3 Tick **True** or **False** next to each of these statements.

|                                                                          | True | False |
|--------------------------------------------------------------------------|------|-------|
| Withdrawing money from an ATM is an example of batch processing.         |      |       |
| The processing of bank cheques is an example of batch processing.        |      |       |
| Booking a theatre ticket is an example of online processing.             |      |       |
| Producing utility bills is an example of online processing.              |      |       |

[4]

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

| a bar code | a chip | a dot matrix printer |
|---|---|---|
| a DVD RW | an inference engine | an inkjet printer |

(a) The **most suitable** storage medium for storing data on a bank card is

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(b) The tool which searches for matches in a knowledge base is

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(c) An optical disc which can have data updated is

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(d) Multipart stationery is used with

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

[4]

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

Input device                    Use

**Bar code reader**            **to enter hard copy images into a computer**

**Microphone**                 **creating a piece of text**

**Scanner**                    **selecting items from a menu**

**Keyboard**                   **inputting data from a food item at a POS**

**Mouse**                      **creating a voice over for a presentation**

[5]

6    As well as PCs, mobile phones (cellphones) can be used to access the Internet.

(a)  Give **two** advantages of using a PC rather than a mobile phone for this purpose.

1 ..............................................................................................................................................

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2 ..............................................................................................................................................

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(b)  Give **two** disadvantages of using a PC rather than a mobile phone for this purpose.

1 ..............................................................................................................................................

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2 ..............................................................................................................................................

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7    Tick **Internet** or **intranet**, next to each statement, as appropriate.

| | Internet | intranet |
|---|---|---|
| is a network of computer networks | | |
| exists usually within one organisation | | |
| anybody can access it | | |
| can be expanded to become an extranet | | |

[4]

8    Tick **spam** or **pharming**, next to each statement, as appropriate.

| | spam | pharming |
|---|---|---|
| is the sending of several emails at once | | |
| requires malicious code to be downloaded | | |
| re-directs the user to a fake website | | |
| is the sending of unsolicited messages | | |

[4]

9    A student wishes to use a floor turtle to draw this shape:

a

b

c

Start       Finish
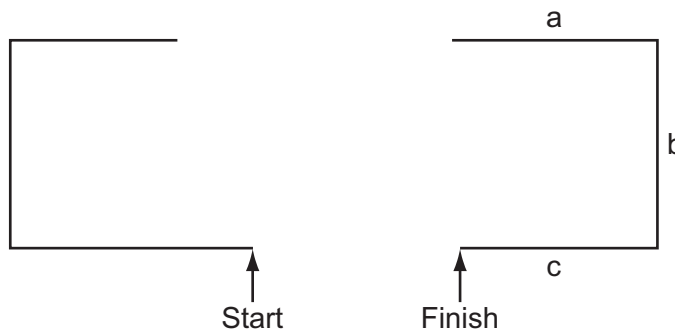
Name and explain the meaning of **four** instructions that the turtle graphics software would contain in order to draw the shape. Note: a, b and c are the same length.

Instruction 1 ..............................................................................................................

Meaning ..............................................................................................................

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Instruction 2 ..............................................................................................................

Meaning ..............................................................................................................

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Instruction 3 ..............................................................................................................

Meaning ..............................................................................................................

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Instruction 4 ..............................................................................................................

Meaning ..............................................................................................................

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10   Tick whether the following statements are **true** or **false** about student records in a database.

| | True | False |
|---|---|---|
| A file is a collection of related records. | | |
| A field is one item of data such as name or address. | | |
| The same value can occur several times within a key field. | | |
| A record is the complete data about one student. | | |

[4]

11 Hospitals often use computers to continuously monitor patients.

(a) Describe the monitoring process.

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(b) Give **four** advantages of using a computer rather than nurses to monitor patients.

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2 .................................................................................................................................

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3 .................................................................................................................................

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4 .................................................................................................................................

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

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | **Producer** | **Food type** | **Number in stock** | **Cost Price** | **Selling Price** | **Profit** | **Total profit** |
| 2 | Logekks | Potato flakes | 168 | $1.80 | $1.90 | $0.10 | $16.80 |
| 3 | Squarebranch | Chocolate bar | 202 | $0.75 | $0.80 | $0.05 | $10.10 |
| 4 | Roofs | Beefburgers | 88 | $2.05 | $2.25 | $0.20 | $17.60 |
| 5 | Kapats | Gravy | 120 | $3.20 | $3.45 | $0.25 | $30.00 |
| 6 | Startle | Yoghurt cream | 122 | $1.50 | $1.65 | $0.15 | $18.30 |
| 7 | | | | | | | |
| 8 | | **Total in stock** | 700 | | **Overall profit** | | $92.80 |

**(a)** Give the cell reference of the cell that contains $3.45.

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**(b)** Give the cell reference of a cell that contains a label.

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**(c)** How many columns are shown in the spreadsheet?

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**(d)** Write down the formula which should go in cell G2.

= ......................................................................................................................................... [1]

**(e)** Formulae similar to that used in cell F2, that is to say = E2 – D2, have been used in cells F3 to F6. These were not typed.

Describe how these were entered.

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**(f)** Spreadsheets can be used for modelling.

Give **three** reasons why computer models are used rather than the real thing.

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2 .........................................................................................................................................

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3 .........................................................................................................................................

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13 Describe the differences between a **CLI** (Command Line Interface) and a **GUI** (Graphical User Interface).

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14 The head teacher of a school has employed Pierre, a systems analyst, to create a new database system to keep details of all students. Each student will be allocated a unique ten digit reference number.

Pierre has written out some of the questions that the head teacher might ask. He can then analyse these in order to design a database which may answer these questions. Some are:

Which year is Johann Schmidt in? (the school has students in years 7 to 13)
Does Anita Nash have a sibling (brother or sister) in the school?

(a) Complete the data dictionary table below giving the field names which would be used in the database and identifying a validation check for each field.

| Field name | Validation check |
|---|---|
| Reference_number | |
| Year | |
| First_name | |
| | None |
| | |

[6]

(b) Explain the differences between verification and validation giving reasons why both are needed when data is entered into a database.

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**15** Floyd has purchased a laptop computer. He wants to use it for Internet banking.

**(a)** Explain why Floyd would need the following two items.

Browser ....................................................................................................................................

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ISP ...........................................................................................................................................

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**(b)** Discuss the advantages and disadvantages to customers of using Internet banking rather than visiting the bank.

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**16** Describe what is meant by a Wiki.

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**17** There are a number of health and safety risks associated with using computers.

For the **three** safety risks given below, describe a way in which each can be minimised.

Electrocution .........................................................................................................

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Fire .......................................................................................................................

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Tripping ...............................................................................................................

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**18** There are many microprocessor-controlled devices in the modern home.

Describe **five** effects of these devices on people's lifestyles.

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**19** Describe encryption and discuss the benefits and drawbacks of using it to make data secure.

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