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 **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 **12** printed pages.

UNIVERSITY *of* CAMBRIDGE
International Examinations

[Turn over

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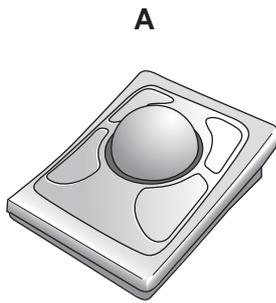
A	B	C	D

Digital camera   **Joystick**   **Light pen**   **Remote control**
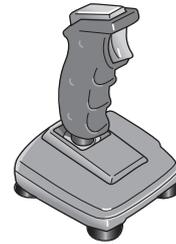
Scanner   **Touch pad**   **Trackerball**   **Web cam**

A ....   B ....

C ....   D ....

[4]

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

Buzzer   **DVD RAM**   **Joystick**

Magnetic tape   **Plotter**   **Touch pad**

[2]

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

	TRUE	FALSE
A number pad is used to enter a PIN		
Presentation software is used to write letters		
Database software is used to create queries		
A Graphical User Interface uses icons to represent applications		
Sensors are used to store data		

[5]

4   Tick whether each of the following is a method of validation or verification.

	Validation	Verification
A computer comparing two versions of the data		
Using check digits		
Applying a length check		
Performing a range check		
Typing in data twice		
Visually comparing data on screen with the original data source		

[6]

5   A desktop computer is already used in an office which does not have an internet connection.

   (a) Name **two** items of hardware which could enable the computer to be connected to a network.

   1 ....

   2 .... [2]

   (b) Name **one** item of hardware which would enable the network to be connected to the internet.

   .... [1]

6   A school keeps records of every student including details of their names, addresses, phone numbers and dates of birth. Using this information, define the terms file, field and record.

   File ....

   ....

   Field ....

   ....

   Record ....

   .... [3]

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

45°

100 mm

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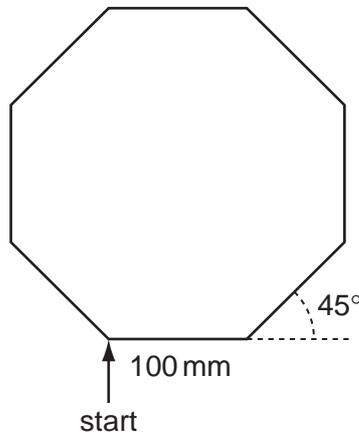
Complete the set of instructions to draw this shape by filling in the blank lines.

PEN DOWN

.... 90

REPEAT ....

FORWARD ....

LEFT ....

....

[5]

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8   Describe the batch processing of bank cheques.

....

....

....

....

....

....

.... [4]

9   Multi-national companies often use video conferencing rather than face to face meetings.

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

    Advantage 1 ....

    ....

    Advantage 2 ....

    ....

    Advantage 3 ....

    .... [3]

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

    Disadvantage 1 ....

    ....

    Disadvantage 2 ....

    ....

    Disadvantage 3 ....

    .... [3]

10

Make and model	Number sold	Air conditioning (Y/N)
Ford Mondeo	45	Y
Opel Corsa	52	N
BMW Series X	35	N
Nissan Micra	39	N

A car showroom uses a database to store information about the cars it has sold. Part of this database is shown above.

(a) (i) Which field stores Boolean data?

....

(ii) Give one reason why this data type is used.

....

.... [2]

(b) (i) Which field stores numeric data?

....

(ii) Give one reason why this data type is used.

....

.... [2]

11 Describe the differences between RAM and ROM.

....

....

....

....

....

....

.... [4]

12 Doctors often use expert systems to diagnose illnesses of patients. Describe how expert systems are used in this process.

....

....

....

....

....

....

....

.... [4]

13 A student wishes to store data on an optical storage medium. List **two** optical media and give **one** advantage and **one** disadvantage of using optical media when compared with fixed hard discs.

Optical medium 1 ....

....

Optical medium 2 ....

....

Advantage ....

....

Disadvantage ....

.... [4]

14 A large company has a LAN. The manager of the company wants to replace it with a WLAN. Explain the differences between a LAN and a WLAN, giving an advantage and a disadvantage of a WLAN.

....

....

....

....

....

....

....

.... [4]

15 Computers can cause health problems. Identify **two** of these problems and for each problem write down a method which would help you avoid it. Do not use the same method for both answers.

Problem 1 ....

....

Method 1 ....

....

Problem 2 ....

....

Method 2 ....

.... [4]

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16 In online banking data can be misused by hackers. Name **three** types of security measure which can be used to help to prevent this. For each one give an advantage and a disadvantage.

Measure 1 ....

....

Advantage ....

....

Disadvantage ....

....

Measure 2 ....

....

Advantage ....

....

Disadvantage ....

....

Measure 3 ....

....

Advantage ....

....

Disadvantage ....

.... [9]

17 A systems analyst has been asked by a school librarian to update the computer system she uses to keep records about her books.

(a) The systems analyst must first of all collect information about the existing system. Describe **three** methods which could be used to collect this information.

1 ....

....

2 ....

....

3 ....

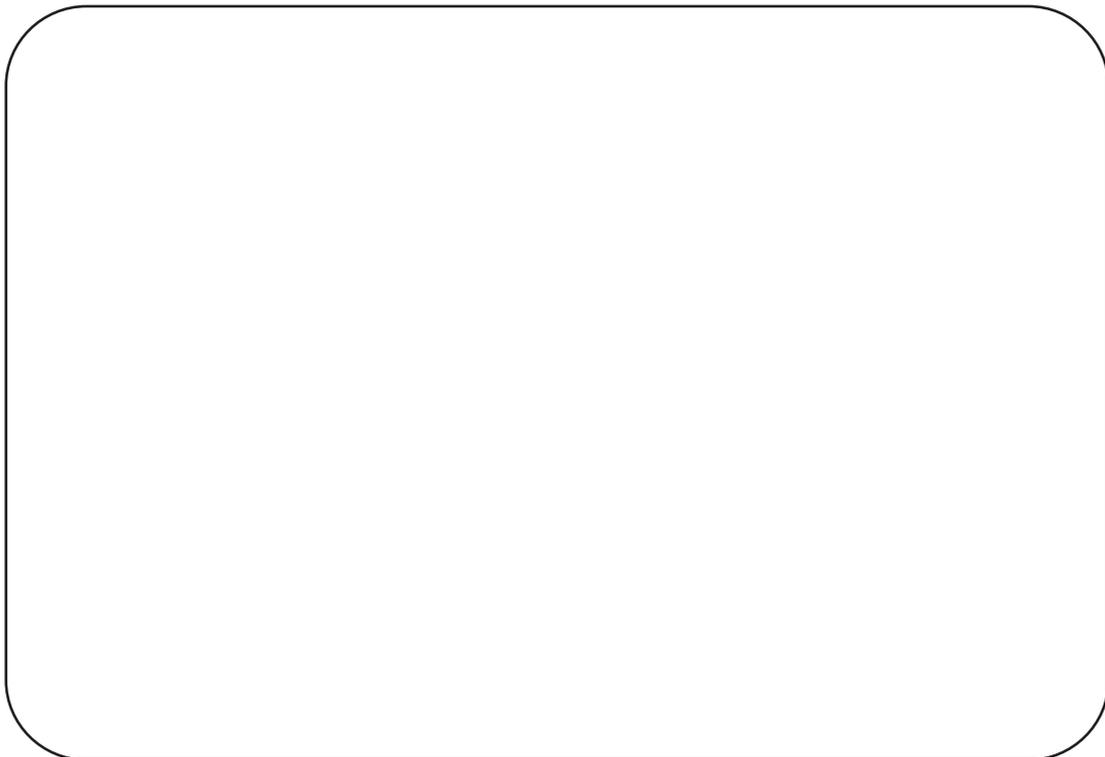... [3]

(b) The systems analyst must now produce a screen input form which the librarian could use for typing in each book's details. Design a suitable screen input form to enter the details of **one** book. It should contain appropriate spacing for each field, as well as navigation aids.

[5]

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(c) Name **three** methods which would be used in a library to input data about books or borrowers.

1 ....

....

2 ....

....

3 ....

.... [3]

18 A new computer system storing examination results out of 100 is to be tested using a range of test data. For each item of test data below, name the type of test data used, explaining your choice. Use each type once only.

(a) 65 ....

....

....

.... [2]

(b) 100 ....

....

....

.... [2]

(c) 121 ....

....

....

.... [2]

For Examiner's Use

19 When a new system is implemented, documentation is provided with it. Identify the **two** different types of documentation produced and name **two** different components in each.

Type 1 ....

    Component 1 ....

    ....

    Component 2 ....

    ....

Type 2 ....

    Component 1 ....

    ....

    Component 2 ....

    .... [6]

20 A student wishes to use the internet in order to research a topic. Discuss how the student can assess the reliability and bias of a website.

....

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.... [6]