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 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

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

A

B

C

D

| Bar code | Plotter | Laser printer | Light pen |

| Magnetic disc | Monitor | Multimedia Projector | Pen drive |

A .... B ....

C .... D ....

[4]

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

| Blu ray disc | Graphics tablet | Inkjet printer |

| Motor | Optical mark reader | Speaker |

[2]

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

	TRUE	FALSE
A magnetic stripe reader is an example of hardware		
A memory stick is an example of software		
A word processor is a form of operating system		
A CD has a greater storage capacity than a DVD		

[4]

4   Draw **five** lines on the diagram to match the storage device to its most appropriate use.

Storage Device   Use

Fixed hard disc   **Making backups of a file server**

Flash memory card   **Transferring a file from one computer to another**

Magnetic tape   **Storing software sold by a company**

Pen drive   **Storing data which needs to be accessed quickly**

DVD ROM   **Storing photographs in a digital camera**

[5]

5   A database is to be created about the personal details of students at a school. Select the most suitable data type for each field using one word from this list.

Boolean   **Text**   **Integer**

            Date   **Decimal**

(a) Birthday   ....

(b) Gender   ....

(c) Home phone number   ....

(d) Number of brothers and sisters   ....

[4]

6 Tick **TRUE** or **FALSE** for the following statements.

	TRUE	FALSE
RAM is volatile		
RAM is used to store the startup instructions of a computer		
The data in ROM is easier to change than that in RAM		
ROM is used to store the data the user is currently working on		

[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

```
        50      40        60
       ┌───────        ───────┐
    60 │                       │ 60
       │                       │
       │              ┌────────┘
       │              │    80
       ▲              ▼
     Start          Finish
```
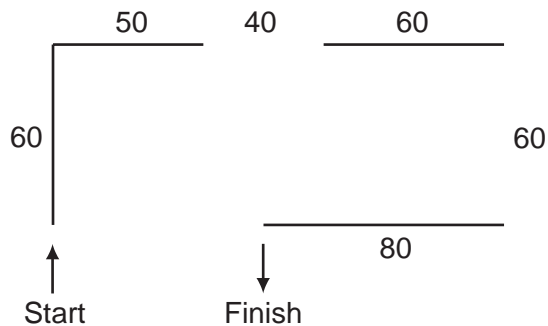
Complete the set of instructions to draw this shape by filling in the blank lines.

PEN DOWN	....	....
FORWARD 60	....	....
RIGHT 90	....	....
....	....	....
....	....	

[5]

8   Tick **three** items of hardware which are used to network computers together.

	✓
Hub	
Printer	
Scanner	
Switch	
Bridge	
Monitor	

[3]

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

	TRUE	FALSE
Paying for goods at an EFTPOS terminal		
Booking a holiday using a computer		
Producing credit card bills		
Processing cheques		

[4]

10 A school uses a computer-controlled greenhouse to grow plants.

(a) Name **three** sensors that would be used in the greenhouse.

1 ....

2 ....

3 .... [3]

(b) Describe the computer processing that is required to maintain the correct growing conditions.

....

....

....

....

....

....

....

....

.... [5]

(c) Describe **three** advantages of using computers rather than students to control the growing conditions.

....

....

....

....

....

.... [3]

11 A school has a computer system for monitoring student records. It has a file for storing personal details and a file for storing test results. Here is part of the test results file.

Unique ID number	Name	History result	Geography result	Maths result
1022	Me Won Li	55	46	65
1026	John Brown	76	49	47
1029	Javir Sidhu	54	59	23

(a) How many records are shown in the file above?

.... [1]

(b) How many fields are shown?

.... [1]

(c) Describe how the two files could be combined to form a relational database.

....

....

....

....

....

.... [3]

(d) Give **two** reasons why a relational database system would be used rather than having two flat files.

1 ....

....

2 ....

.... [2]

12 Alan owns a small company. He wishes to replace the existing computerised system with a new one. He has employed a systems analyst, José, to plan this.

(a) José will collect information about the existing system and design the new system. Tick whether the following statements are **TRUE** or **FALSE**.

	TRUE	FALSE
Defining a field length is part of the design of the file structure		
Screen layouts are designed before the system is implemented		
The new system is evaluated before it is designed		
The existing system is analysed before the new system is designed		

[4]

(b) Name and describe **three** types of test data which are used when testing a system.

1 ....

....

2 ....

....

3 ....

.... [3]

(c) After the system has been implemented it will be evaluated. Tick **four** activities which José will need to carry out as part of the evaluation.

	✓
Produce user documentation	
Design the new system	
Compare the solution with the original task requirements	
Analyse the existing system	
Identify any limitations of the system	
Identify any necessary improvements to the system	
Analyse the users' responses to the results of testing the system	
Produce technical documentation	

[4]

(d) Part of José's job will be to produce both technical and user documentation for the new system. For each type of documentation give **two** reasons why it is needed.

Technical documentation

Reason 1 ....

....

Reason 2 ....

....

User documentation

Reason 1 ....

....

Reason 2 ....

.... [4]

13 Aftab and his family have three computers in their home. He wants to connect the computers into a network.

(a) Name an item of hardware used to connect the computers to the internet.

.... [1]

(b) Name an item of software used to send messages over the internet.

.... [1]

(c) Name an item of software used to access websites.

.... [1]

(d) Apart from hardware and software, what else would be needed to provide access to the internet?

.... [1]

14 Online banking and ATMs are used by many customers.

(a) Describe how the following **three** methods are used to make sure that data is secure.

Encryption ....

....

....

....

Passwords ....

....

....

....

Biometric data ....

....

....

.... [6]

(b) Give **three** advantages to the bank of using online banking.

1 ....

....

2 ....

....

3 ....

.... [3]

(c) Give **three** advantages to the customer of using online banking.

1 ....

....

2 ....

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3 ....

.... [3]

15 Discuss the advantages and disadvantages of video conferencing compared to face to face meetings.

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.... [6]

16 Explain the difference between phishing and pharming.

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.... [3]

17 Computers are used to manage data in schools. Name the different methods used to input personal data about students and their attendance and discuss the advantages and disadvantages of these.

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.... [7]