



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education

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**INFORMATION AND COMMUNICATION TECHNOLOGY**

**0417/11**

Paper 1

**October/November 2014**

**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 an HB pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, glue or correction fluid.

**DO NOT WRITE IN ANY BARCODES.**

No marks will be awarded for using brand names of software packages or hardware.

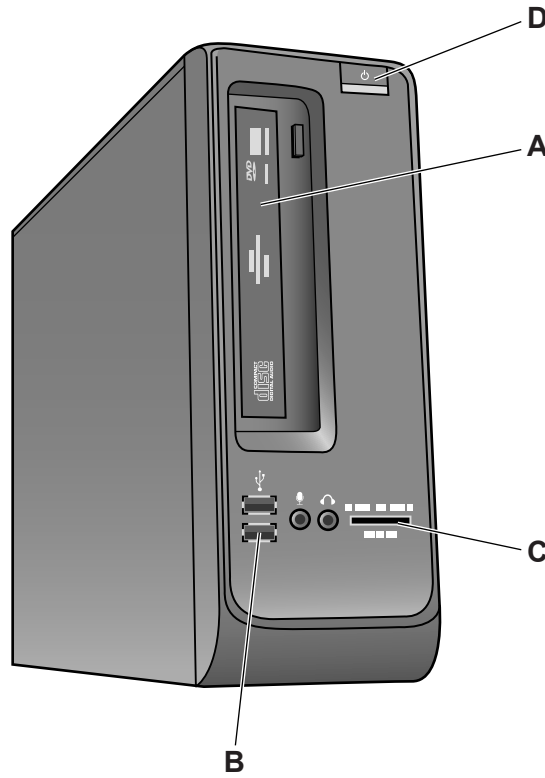
Answer **all** questions.

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.

This document consists of **14** printed pages and **2** blank pages.

1 Here is a PC tower. Name the items **A**, **B**, **C**, and **D** using different words from the list.



hard disk drive  
memory card slot  
printer leads

LCD  
on/off button  
USB ports

LED  
optical disc drive

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

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

[4]

2 Identify **two** network devices.

1 .....

2 .....

[2]

3 Tick **two** ways of reducing the risk of health problems caused by continuous use of computers.

	✓
Look away from the screen from time to time	
Use a keyboard instead of a mouse	
Position your chair so that you are looking straight at the screen	
Work without a break	
Keep the screen as bright as you can	
Grip the mouse tightly	

[2]

4 Tick the box which best describes each of the following items.

	Hardware	Software
Spreadsheet		
Digital camera		
Bar code reader		
Web page authoring program		

[4]

5 A microprocessor in a greenhouse causes fans to come on when the temperature is higher than the preset value and switches them off when it is lower. It also keeps a record of the temperature throughout the day.

Name **two** types of application software which are being used.

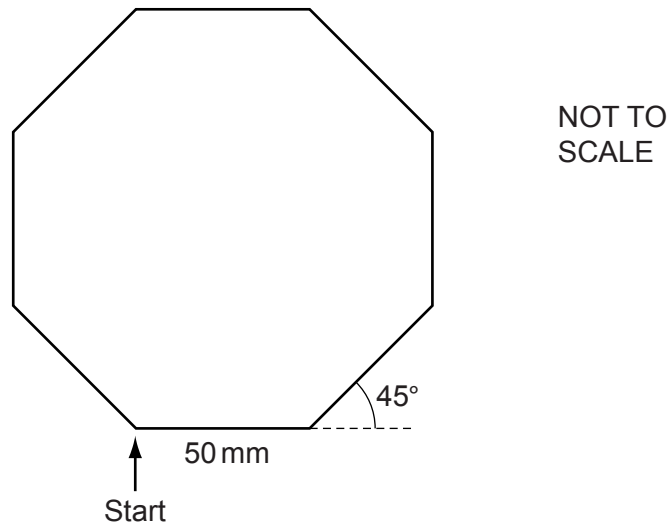
1 .....

2 .....

[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



All the sides are the same length.

The turtle is facing up the page and the pen is up.

Complete the set of instructions to draw this shape by filling in the blank lines, and using the **REPEAT** instruction.

**RIGHT 90**

.....

.....

.....

.....

.....

[5]

- 7 Systems analysts have been employed to computerise a car dealer's operations. They will be creating a database of cars for sale.

This table shows part of the design of the database.

Make	Registration number	Engine size	Maximum speed
Frod	K674 TUV	1.3	140
Olep	K349 XUP	1.4	140
Yotoya	R123 AZN	2.0	160
Dahom	U283 BBV	1.7	175
Yotoya	K943 SCG	1.3	180

- (a) (i) How many fields are there?

.....

- (ii) Name the field which contains real numbers.

.....

- (iii) Give the field name for the first column of data.

.....

- (iv) Which field has the database been sorted by?

.....

[4]

- (b) Circle the field which would be the best choice as the key field for this database.

**Engine size**
**Make**  
**Maximum speed**
**Registration number**

[1]

- (c) Give **one** reason for your choice of key field.

..... [1]

- (d) Name **two** ways that the system could be implemented.

1 .....

2 .....

[2]

8 Some students are studying the amount of pollution in a river. They are using a computer to measure the pollution using sensors. The results are recorded and printed.

(a) Name **two** sensors they should use to measure the amount of pollution.

1 .....

.....

2 .....

.....

[2]

(b) Explain why this is not an example of computer **control**.

.....

.....

.....

..... [2]

(c) Name a type of software which would be used to store the results.

..... [1]

(d) Name a type of software which would be used to produce a report incorporating graphs.

..... [1]

(e) Describe the steps involved in monitoring the pollution.

.....

.....

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..... [4]

9 Give **two** methods of preventing viruses other than by using virus protection software.

1 .....

.....

2 .....

.....

[2]

10 (a) (i) Describe what is meant by a LAN.

.....

.....

.....

.....

[2]

(ii) Describe what is meant by a WAN.

.....

.....

.....

.....

[2]

(b) Name an item of hardware that would be used to connect a LAN to a WAN.

..... [1]

11 Many teachers are using websites to support their lessons but also use word-processed worksheets.

(a) Describe **three** features which can be found on a website that would not be present in printed worksheets.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

(b) Teachers should always make a backup of their worksheets.

(i) Describe what is meant by a backup.

1 .....

.....

2 .....

.....

[2]

(ii) Explain why backups are necessary.

1 .....

.....

2 .....

.....

[2]



- 12 Here is part of a database of students born between 1st January 1999 and 31st December 1999. It shows the number of IGCSEs each student is taking next year. No student is allowed to take more than 10 IGCSEs. Each student has a seven digit Student\_number.

Some of the data has been entered incorrectly.

Student_name	Student_number	Year_of_birth	Gender	Number_of_IGCSEs
Aftab Ali	4561792	1989	M	7
Paul Nixon	456183	1999	M	10
Maria Jones	4561806	1999	N	9
Joyce Alonzo	4561815	2010	F	6
David Senior	4561823	1999	M	eleven

- (a) Paul Nixon has an incorrect Student\_number. For each of the following fields write down the **names** of the students whose data has been entered incorrectly.

(i) Year\_of\_birth .....

(ii) Gender .....

(iii) Number\_of\_IGCSEs .....

[3]

- (b) The school secretaries who typed in the original data, verified the data to make sure they typed it in correctly.

Identify **two** methods of verification.

1 .....

2 .....

[2]

- (c) For each field, name a different validation check which would have prevented the errors in the following fields.

(i) Year\_of\_birth .....

(ii) Number\_of\_IGCSEs .....

(iii) Student\_number .....

[3]

13 Computer simulation is used to train airplane pilots. Give **three** reasons why a computer simulation is used.

Reason 1 .....

.....

Reason 2 .....

.....

Reason 3 .....

.....

[3]

14 A hospital's intensive care department uses a computer to monitor patients' conditions.

Give **three** advantages of using a computer to collect the data rather than having it done by nurses.

1 .....

.....

2 .....

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3 .....

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[3]

15 A mining company has asked a knowledge engineer to devise an expert system to help them with their prospecting for valuable minerals.

Describe how this expert system would be created.

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[5]

16 Internet banking allows customers to transfer money from one account to another and pay bills.

(a) Describe **two** transactions that internet banking does not allow you to make.

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

[2]

(b) When logging on, as well as typing in their username and passwords, customers have to provide an answer to a security question.

Tick **two** examples of a security question.

	✓
What is the name of the fourth planet from the Sun?	
What is your favourite place?	
How many miles is it from New York to Washington?	
What is your mother's maiden name?	
Who is the Prime Minister of Australia?	
What is the capital of France?	

[2]

(c) Give **two** drawbacks to the bank of introducing internet banking.

1 .....

.....

2 .....

.....

[2]

(d) To prevent the customers' bank details being read by hackers, the bank uses encryption.

Explain what is meant by encryption.

.....  
.....  
.....  
.....  
.....  
..... [3]

17 Johann Schmidt owns several book shops. He wants to keep details of each book on a computer database. He needs to collect data about each of his books on paper.

Describe **five** features of a well-designed paper based data capture form.

1 .....  
.....  
2 .....  
.....  
3 .....  
.....  
4 .....  
.....  
5 .....  
..... [5]

**18** When sending documents to each other, companies use email, fax and ordinary post.

Discuss the advantages and disadvantages of each method.

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..... [6]

**19** Discuss the benefits and drawbacks to teachers and students of using the Internet to carry out research.

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..... [6]

20 Give **two** advantages and **two** disadvantages to a company of using a website to advertise, compared with using flyers and posters.

Advantage 1 .....

.....

Advantage 2 .....

.....

Disadvantage 1 .....

.....

Disadvantage 2 .....

.....

[4]



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