



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

CANDIDATE  
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**INFORMATION AND COMMUNICATION TECHNOLOGY**

**0417/13**

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**

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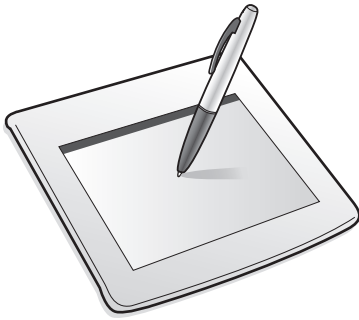
This document consists of **12** printed pages.



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

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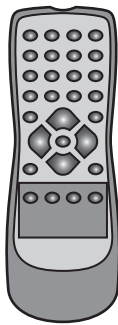
**A**



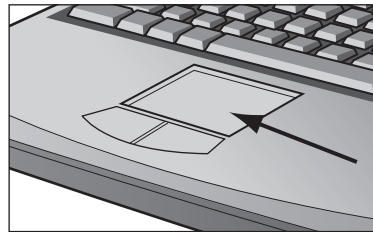
**B**



**C**



**D**



**Buzzer**

**Digital camera**

**Graphics tablet**

**Laser printer**

**Magnetic Stripe Reader**

**Pen drive**

**Remote control**

**Touch pad**

A .....

B .....

C .....

D .....

[4]

2 Ring **two** items which are used for data storage.

**CD RW**

**Plotter**

**Hard disc**

**Keyboard**

**Mouse**

**PIN**

[2]

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

	TRUE	FALSE
Direct changeover needs two sets of workers to be employed		
Parallel running means that the original system is still available		
Phased implementation is implementing the system in parts		
Parallel running is the cheapest form of implementation		

[4]

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

**bar code reader**

**chip**

**DVD RW**

**keyboard**

**laser printer**

**magnetic tape**

(a) The **most suitable** storage medium for making backups of data held on a network server is a

.....

(b) The part of a bank card that stores data about the PIN is a

.....

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

.....

(d) Details of a product are scanned at a POS using a

.....

[4]

5 Draw **five** lines on the diagram to match the software to how it could be used in a school.

Software

Use

**Word processing software**

**finding specific web sites**

**Measuring program**

**storing student records**

**Presentation software**

**writing a letter to parents**

**Search engine**

**monitoring temperature in a science experiment**

**Database**

**producing a multimedia slide show**

[5]

6 Describe **two** uses of optical media and for each one give a reason why optical media are preferred to magnetic tapes for that use.

Use 1 .....

Reason 1 .....

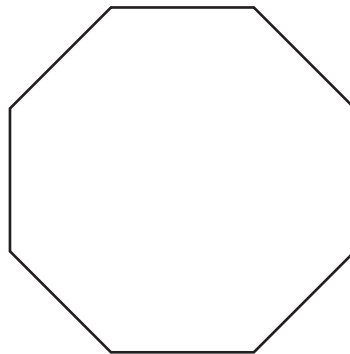
Use 2 .....

Reason 2 .....

[4]

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

Name and explain the meaning of **three** instructions that the turtle graphics software would need to contain in order to draw the shape.



Instruction 1 .....

Meaning .....

Instruction 2 .....

Meaning .....

Instruction 3 .....

Meaning .....

[6]

8 Other than a phone call, list **three** uses of mobile telephones for communication.

- 1 .....
- 2 .....
- 3 ..... [3]

9 A hospital monitors each patient's condition using a computer.

(a) Tick **three** physical variables that would be monitored.

	✓
Pulse rate	
Room temperature	
Humidity	
Body temperature	
Light	
Blood pressure	

[3]

(b) Explain why computers cannot read physical variables directly.

- .....
- .....
- .....
- ..... [2]

(c) Give **three** advantages of using a computer rather than a nurse to monitor a patient's condition.

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

- 10 The manageress of a supermarket uses a database to store data about the products she sells. This is part of the database.

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Use

Product Id	Producer	Food type	Number in stock	Re-order level
0049179000794	Herbot	Frozen Carrots	112	50
0027200190653	Caeser	Baking Powder	125	70
0010029000016	Brutus	Margarine	78	75
0014569021017	Malin	Garlic paste	206	100
0010479001213	Holly	Chicken	113	70
0048168310121	Vitriol	Tinned peas	87	50
0035465710111	Almanac	Frozen sweetcorn	79	45

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

..... [1]

- (b) How many fields 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 **Food type** of the first record in the database after it has been sorted?

..... [1]

- (d) Identify the field type of the **Product Id** field.

..... [1]



12 John and his family have three computers in their home. He wants to connect the computers into a network which will also connect to the internet.

(a) Give **two** advantages of doing this.

1 .....

.....

2 .....

..... [2]

(b) Give **two** disadvantages of doing this.

1 .....

.....

2 .....

..... [2]

13 The use of computer networks can lead to problems of keeping data secure and confidential. Two methods of overcoming this are the use of authentication techniques and data encryption.

(a) Describe **two** authentication techniques.

1 .....

.....

2 .....

..... [2]

(b) Describe data encryption.

.....

.....

.....

..... [2]



14 Sarbjit owns a small company with little money to spare. He wishes to replace the existing computerised system with a new one. He has already made backups of the existing system. He has employed a systems analyst, Tom, to plan the new system.

(a) Tom wishes to collect information about the existing system.  
Give **four** methods he could use and for each give a reason why it would be used.

Method 1 .....

Reason .....

.....

Method 2 .....

Reason .....

.....

Method 3 .....

Reason .....

.....

Method 4 .....

Reason .....

..... [8]

(b) Tom will need to design the file structure of the new system. List **four** items which would need to be included in this design.

1 .....

2 .....

3 .....

4 ..... [4]

(c) After the system is developed it will be implemented. Describe the most appropriate method Sarbjit should choose giving **two** reasons.

*For  
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Method .....

.....

Reason 1 .....

.....

Reason 2 .....

..... [3]

15 Explain the differences between a command line interface and a graphical user interface.

.....

.....

.....

.....

.....

.....

.....

..... [4]

16 Marie has purchased a laptop computer. She wants to use it for internet shopping.

(a) Identify **two** additional items she would need to purchase in order to do this.

1 .....

.....

2 .....

.....

..... [2]

(b) Give **four** advantages to Marie of using internet shopping.

1 .....

.....

2 .....

.....

3 .....

.....

4 .....

..... [4]

(c) Give **four** disadvantages to Marie of using internet shopping.

1 .....

.....

2 .....

.....

3 .....

.....

4 .....

..... [4]

17 Chip and pin systems are used at ATMs. A customer wishing to withdraw cash inserts their card. The ATM checks to see if the card is valid and, if so, asks the customer to type their PIN. Describe the computer processing which takes place from this point.

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
..... [4]

18 Pilot training is often carried out using simulators. Give **two** reasons why these are used to train pilots.

1 .....

2 .....

..... [2]

19 Hackers try to defraud online banking customers by pretending to be their bank. Name and describe **two** methods by which they do this.

1 .....

2 .....

..... [4]

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