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 2012**

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 devices **A**, **B**, **C** and **D** using the words from the list.
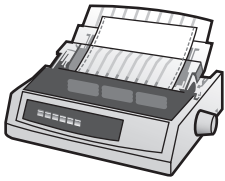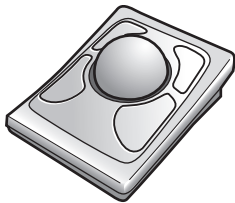
| A | B | C | D |
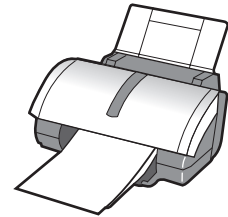
bar code   dot matrix printer   flash memory card   inkjet printer

monitor   multimedia projector   scanner   trackerball

A .... B ....

C .... D ....

[4]

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

light pen   magnetic disc   motor

mouse   OCR   ROM

[2]

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

	True	False
A chip reader is an example of software.		
A hard disc drive is an example of hardware.		
DTP is a form of operating system.		
A blu-ray disc has a greater storage capacity than a DVD.		
Flash memory cards are used in digital cameras.		

[5]

For
iner's

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

Input Device   Use

Mouse   **to input voiceovers for a presentation**

Joystick   **to input a PIN**

Optical Mark Reader   **to select options from a menu**

Microphone   **to operate a flight simulator**

Number pad   **to input candidate responses on examination papers**

[5]

5   Tick **True** or **False** for the following statements.

	True	**False**
ROM is volatile.		
ROM 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]

6   Name **three** items of hardware, other than a PC, needed to conduct a video conference.

1 ....

2 ....

3 .... [3]

7   A floor turtle can use the following instructions:

INSTRUCTION	MEANING
FORWARD *n*	Move *n* forward
BACKWARD *n*	Move *n* 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
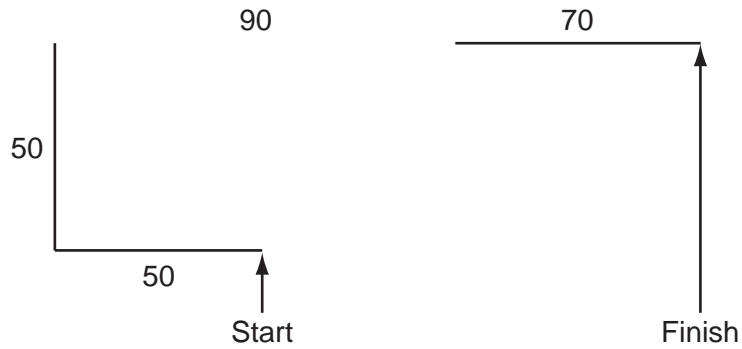
Complete the set of instructions to draw this shape by filling in the blank lines.

PENDOWN   ....

LEFT   90   ....

REPEAT   ....

....

....

[8]

For
iner's

8 A geography teacher wants to build a weather station. She wants to use a comp
collect the results.

(a) Describe **three** physical variables which would be measured.

1 ....

....

2 ....

....

3 ....

.... [3]

(b) The geography teacher wants to create a model to demonstrate basic weather
forecasting to her students.
Describe **three** features of a spreadsheet which make it suitable for modelling
purposes.

1 ....

....

2 ....

....

3 ....

.... [3]

(c) Describe **three** other uses of modelling.

1 ....

....

2 ....

....

3 ....

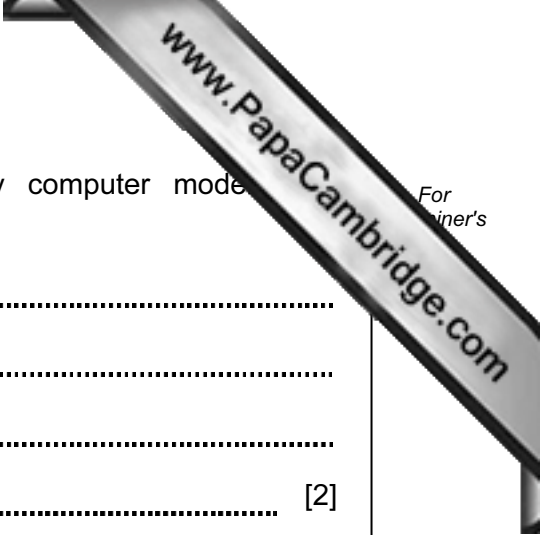.. [3]

For
iner's

(d) Give **two** reasons, other than reducing timescale, why computer mode
sometimes used rather than the real thing.

1 ....

....

2 ....

.... [2]

9 Aftab owns a company which has a small number of computers. He wants to connect the computers into a network. He does not wish to connect the computers to the internet but he does want the workers to be able to communicate within the company.

(a) Name a network device used to connect the computers together.

.... [1]

(b) Name an item of software used to send messages between the computers.

.... [1]

(c) What is the name given to this type of network?

.... [1]

(d) Give **three** reasons why Aftab may not want his workers to access the internet.

1 ....

....

2 ....

....

3 ....

.... [3]

For
iner's

10 A company owns several stores which offer internet shopping to customers.

(a) Give **three** advantages to the company of internet shopping.

1 ....

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2 ....

....

3 ....

.... [3]

(b) Give **three** disadvantages to the company of internet shopping.

1 ....

....

2 ....

....

3 ....

.... [3]

11 The head teacher wants to replace the current printed school magazine with one slide show available on a number of machines in a computer room at parents' evenings.
Name **three** features available in a slideshow not available in a hard copy magazine. For each one say how it could be used in the school's slideshow.

Feature 1 ....

Use ....

....

Feature 2 ....

Use ....

....

Feature 3 ....

Use ....

.... [6]

12 Describe **two** methods of verification and explain why verification is needed.

....

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....

....

.... [4]

13 Computers are used in supermarkets at point of sales terminals.

(a) Tick **three** input devices which could be used to enter data about an item when it is purchased.

	✓
Optical character reader	
Electronic scales	
Sound sensor	
Bar code reader	
Number pad	
Trackerball	

[3]

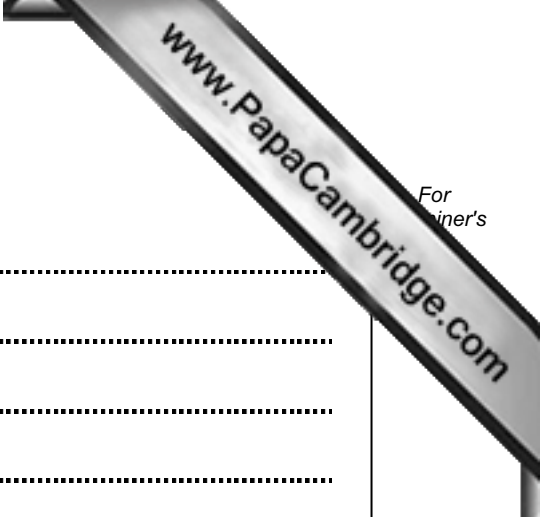(b) Describe how the supermarket's computer uses a check digit to check that data has been entered correctly.

....

....

.... [2]

This is part of the supermarket's database of items:

Product name	Number in Stock	Re-order level	Re-order quantity	Supplier code
Kollege Corn Flakes	152	150	50	L93512
Crikey Orange Juice	121	100	40	G63824
Nice Café Coffee	321	170	60	L93512

This is part of the supermarket's database of suppliers:

Supplier code	Name of supplier	Address of supplier	Supplier phone number
L93512	Lu Chen	14, Kinshasa Highway Box 41324	72 34 45 67
G63824	Hameen	2351, Avenue Rios Box 31496	24 17 39 81

(c) The supermarket computer can automatically re-order items when the supermarket is running low on stock.

Describe this process, using the example databases above when two more packets of Kollege Corn Flakes pass through the checkout.

....

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....

....

....

....

....

....

....

.... [5]

14 Describe what is meant by phishing.

....

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....

....

....

.... [3]

15 Paul is the headteacher of a school. He has employed Mary, a systems analyst, to create a new database system to store records of his students.

Here are some of the questions that Paul might want to answer using the new database system:

Which class is Steven Jones in?
What are the first names of male students in class 11S?
How many IGCSEs is Sara Patel taking?

No student takes more than 10 IGCSEs.

Typical records would be:

Peter Ngong, 11S, 10, M
Joan Murugo, 11R, 9, F
Francis Uhuru, 11S, 9, M
Susan Mathu, 11T, 10, F

(a) Complete the design table below, filling in the field names and **most** appropriate validation rule which could be applied to each field.

Field name	Validation rule
First_name	
	none
class	

[7]

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

1 ....

....

2 ....

....

3 ....

.... [3]

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

	✓
Interview users about the current system	
Design the new system	
Compare the solution with the original task requirements	
Decide on the method of implementation	
Identify any limitations of the system	
Identify any necessary improvements to the system	

[3]

16 Students at a school use the internet to research their work.
Discuss the reliability of information found on the internet.

[6]

17 Give **four** benefits of using social networking sites.

1

2

3

4

[4]