Cambridge IGCSE

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

INFORMATION AND COMMUNICATION TECHNOLOGY 0417/13

Paper 1 May/June 2015

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 **15** printed pages and **1** blank page.

CAMBRIDGE
International Examinations

[Turn over

1 This diagram shows a smart phone.

(a) Name **two** input devices shown on the phone diagram.

1 ....

2 ....

[2]

(b) Name **one** storage **device** which would be available in the phone shown above.

.... [1]

(c) Identify **three** ways the phone shown above could be used to contact a bank apart from making a phone call to the bank.

1 ....

....

2 ....

....

3 ....

....

[3]

2 Tick the **most** appropriate method of inputting data for the following uses.

Use	MICR ✓	Bar code reader ✓	OMR ✓
Inputting exam answers from a multiple choice test paper			
Inputting the account number from the bottom of a cheque			
Inputting the ISBN from the back cover of a book			
Inputting pencil marks from a school register			

[4]

3 Explain what is meant by computer hardware and computer software, giving an example of each.

Hardware ....

....

....

....

Software ....

....

....

.... [4]

4 Tick whether the following statements apply to verification, validation or neither.

	Verification ✓	Validation ✓	Neither verification nor validation ✓
Data is entered by two different operators			
Data is checked to see if it is present			
Data is checked to make sure it is correct			
Data entered is checked to see if it matches data on the source document			

[4]

5 Complete each sentence using a word from the list below.

    (a) The type of processing used for updating bank
    accounts at ATMs is called   .... [1]

    (b) The type of access used on a magnetic tape is called   .... [1]

    (c) The type of software used to create printed magazines
    is called   .... [1]

batch	**sensor**	**spreadsheet**
online	**direct**	**random**
serial	**DTP**	

6 Describe **two** recent developments in ICT which have improved the quality and speed of communication using the internet.

1 ....

....

2 ....

....
[2]

7 There are many causes of health and safety issues related to the use of computers in the workplace.

Explain, giving examples, the differences between the causes of each issue.

....

....

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.... [6]

6

8   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

Each shape
has equal sides

72°

90°

50 mm   80 mm   60 mm

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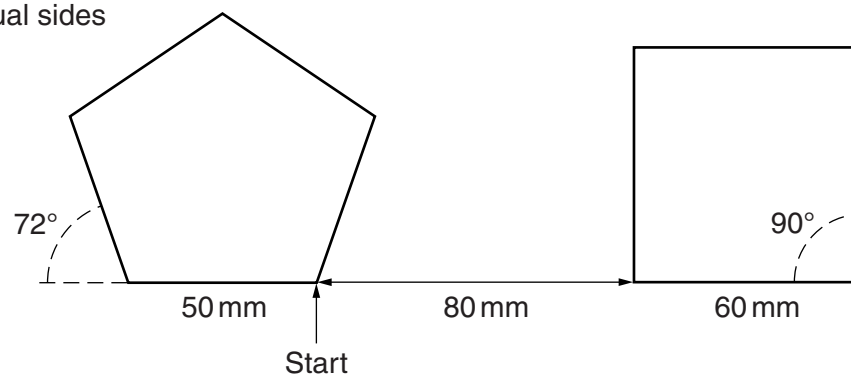
The turtle is facing up the page and the pen is up.

A student has written the following set of instructions to make the floor turtle draw the above shapes.

1. PENDOWN

2. LEFT 90

3. REPEAT 6

4. FORWARD 50

5. RIGHT 72

6. BACKWARD 80

7. RIGHT 90

8. FORWARD 60

9. END REPEAT

Although the first **two** instructions are correct, this set of instructions would not draw the shapes exactly as shown. **Four** instructions have been missed out and **one** is incorrect.

(a) Identify the incorrect instruction and state the correct instruction to be used.

....

....[1]

(b) Write down the **four** missing instructions and indicate where they should be positioned in the list of instructions provided.

1 ....

....

2 ....

....

3 ....

....

4 ....

....
[4]

9 An office has a microprocessor controlled central heating system.

(a) Name and describe, in detail, the use of **two** input devices in such a system.

Name 1 ....

....

Use 1 ....

....

Name 2 ....

....

Use 2 ....

....
[4]

(b) Describe how the microprocessor would keep the temperature of the office at a constant 19°C.

....

....

....

....

....

....

....

.... [4]

10 Apart from security aspects, describe the role of a proxy server.

....

....

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....

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.... [3]

11 A headteacher keeps all details of students in a database.

(a) Describe what is meant by the following terms, using examples of student data.

Field ....

....

....

....

File ....

....

....

....

Record ....

....

....

....
[6]

(b) Describe what is meant by a key field, using examples of student data.

....

....

....

....

....

.... [3]

12 An airline keeps a database of all the flights it operates. A short extract is shown below.

Flight_ number	Departure_ Airport_Code	Number_of_ passengers	Destination_Airport_code	Ticket_prices
EK236	JNB	135	LHR	$1200
EK080	DXB	256	DEL	$500
EK029	LHR	375	DXB	$650

(a) Explain fully, what is meant by the following validation checks using the extract above.

Range check ....

....

....

....

Format check ....

....

....

....

Length check ....

....

....

....
                                                                                                                      [6]

(b) Using the extract above, give an example of **one** field which would contain:

Text data
(alphanumeric) ....

Numeric data ....
                                                                                                                      [2]

13 (a) Explain how a SUMIF function works, using the example of SUMIF(A1:A6, ">29", B1:B6).

....

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.... [4]

(b) A spreadsheet contains the following data and formula.

◢	D	E	F	G
1	**Months in employment**		**Days holiday due**	
2	31		10	=SUMIF(D2:D10,">31<35",F2:F10)
3	33		10	
4	39		20	
5	33		10	
6	42		30	
7	35		10	
8	38		20	
9	33		10	
10	41		30	

Explain why the cell G2 does not produce the expected value of 30.
Write down a formula which would total the Days holiday due to those workers who had worked for the company for more than 31 months but less than 35 months.

....

....

....

....

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.... [4]

14 Biometric methods are increasingly being used to authorise user access to computer systems.

   (a) Explain, giving examples, why biometric methods are considered to be a more secure method of authorising access to a network than using id and passwords.

   ....

   ....

   ....

   ....

   ....

   ....

   ....

   ....

   ....

   ....

   .... [6]

   (b) Give **three** disadvantages of using biometric methods compared to user id and passwords.

   1...

   ....

   2 ....

   ....

   3 ....

   ....

   [3]

15 Many computer networks are connected using cables but some are now connected using wireless technology.

Discuss the advantages and disadvantages of using wireless networks compared to using cabled networks.

....

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.... [6]

16 A travel company uses an online booking system to book flights for its customers.

   (a) The travel agent will type in the departure date, departure airport and destination airport. The system does not allow invalid airport names.

   Describe the processing and outputs involved in such a system.

   ....

   ....

   ....

   ....

   ....

   ....

   ....

   ....

   ....

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   ....

   .... [6]

   (b) Give **three** other organisations which make use of online booking systems.

   1 ....

   2 ....

   3 ....
                                                                                                                          [3]

17 A headteacher has decided that the school newsletter will no longer be printed out for parents but, instead, will appear on the school website.

Name **three** features available on a website not available in a hard copy version of the newsletter. For each one describe how it could be used on the school website.

Feature 1 ....

Use ....

....

Feature 2 ....

Use ....

....

Feature 3 ....

Use ....

....

[6]

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