CANDIDATE
NAME

CENTRE
NUMBER

CANDIDATE
NUMBER

INFORMATION AND COMMUNICATION TECHNOLOGY

0417/11

Paper 1

May/June 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.
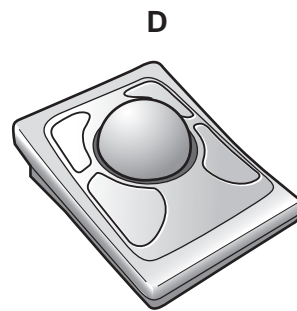
Answer **all** questions.

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.

For Examiner's Use

This document consists of **16** printed pages.

IB14 06_0417_11/3RP
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CAMBRIDGE
International Examinations

[Turn over

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

A

B

C

D
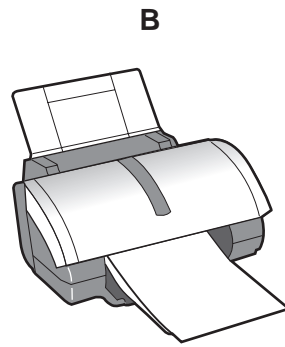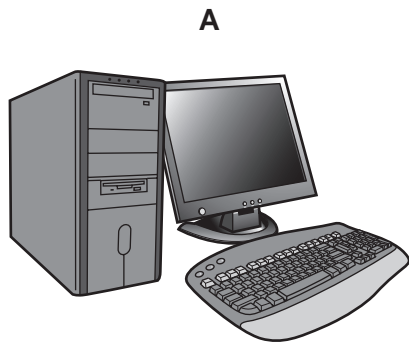
Desktop computer	**Dot matrix printer**	**Graph plotter**	**Hard disc**
Inkjet printer	**Laptop computer**	**Optical disc**	**Trackerball**

A .... B ....

C .... D ....

[4]

2 Identify **two** devices which are used in control systems to output data.

1 ....

2 .... [2]

3 Give **two** advantages of a fixed magnetic hard disc compared to an optical disc to store data.

1 ....

....

2 ....

.... [2]

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

	True	False
OMR is used to read data from multi choice question papers.		
OCR is used to read data from word processed documents.		
DTP is used to create financial models.		
Regular use of computers improves your eyesight.		

[4]

5   Tick **two** changes which have occurred in libraries due to the introduction of computers.

	✓
Fewer books can be borrowed.	
Libraries can stay open longer.	
Information about books is more easily available to borrowers.	
More people work at the library.	
Nobody borrows books any more.	
The librarian is automatically notified when books are late.	

[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

15 mm   50 mm   15 mm

NOT TO
SCALE

65 mm   65 mm

15 mm

Start   Finish
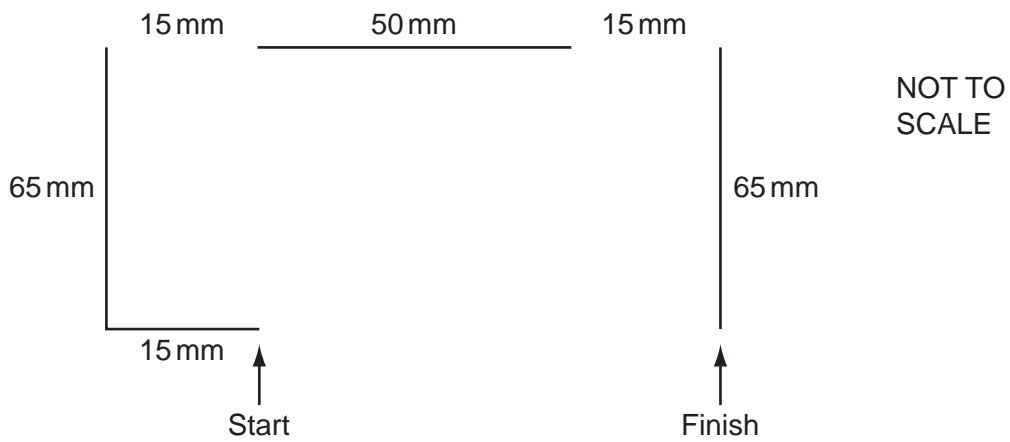
Complete the set of instructions to draw this shape by filling in the blank lines. The turtle is facing up at the start.

PENDOWN   ....

LEFT 90   ....

FORWARD 15   ....

....

....

[6]

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7 A History teacher uses a spreadsheet to record the exam scores of her students. The spreadsheet below shows the exam scores of some of those pupils.

	A	B	C	D	E	F
1		Exam 1	Exam 2	Exam 3	Total	
2						
3	Joanne	62	61	70	193	
4	Iqbal	57	72	65	194	
5	Rajvinder	48	67	56	171	
6	Sven	64	55	62	181	
7						
8	Highest mark	64	72	70		

(a) Write down the formula which should go in cell E3.

= .... [1]

(b) Write down the formula which should go in cell B8.

= .... [1]

8 Many homes in cold climate areas use microprocessor controlled central heating systems.

(a) Name **two** input devices used in such a system.

Input device 1 ....

Input device 2 .... [2]

(b) Describe the processing which takes place.

....

....

....

....

....

.... [3]

9 Students are using questionnaires to find information about workers at a company. They are going to construct a database to store the results.

Each worker at the company has an individual works number which starts with a letter and has 6 digits e.g. A123456.

Below is part of a questionnaire which some students have created to collect the results.

Company survey

1.   What is your works number?   ☐☐☐☐☐☐☐

2.   Do you use a car to drive to work?   YES/NO

3.   How many hours per week do you work?   ☐☐

(a) Name a suitable data type for the answer to:

(i) Question 1

....

(ii) Question 2

....

(iii) Question 3

.... [3]

(b) Name the validation check which would be **most** suitable to ensure that data entered for question 1 of the questionnaire is acceptable.

.... [1]

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10 The Geography teacher in a school has set up an automatic weather station connected to a computer.

(a) Name **three** physical variables which will be measured by sensors.

1 ....

2 ....

3 .... [3]

(b) (i) Explain why the computer is unable to read the data directly from the sensors.

....

....

....

.... [2]

(ii) Name the device that is needed to enable it to do so.

.... [1]

(c) Give **three** advantages to the Geography department of having a computerised weather system rather than a manual weather system.

1 ....

....

2 ....

....

3 ....

.... [3]

11 A company is going to replace its existing computer system with a new one.

Put the following steps into the correct order that the systems analyst would follow.

    Implement the new system.

    Develop the new system.

    Collect information about the existing system.

    Evaluate the new system.

    Design a file structure.

1 ....

2 ....

3 ....

4 ....

5 .... [5]

12 Some students at a school want to produce a multimedia presentation to advertise a school play.

(a) Tick **two** types of data which can be used in a multimedia presentation that cannot be used in a hard copy document.

	✓
Text	
Integers	
Sound	
Decimal numbers	
Video	
Graphics	

[2]

(b) The pupils want to record themselves speaking. Their voices will be added to the presentation. They will need to listen to their voices to make sure the presentation is of good quality.

Name **two** devices which they will need to use to do this.

1 ....

2 .... [2]

(c) Another group of students are producing a hard copy brochure for the event. These students will need to prepare material to include in this document.

Name **two** types of software they might use and for each, write down what they would use it for.

Software 1 ....

....

Use ....

....

Software 2 ....

....

Use ....

[4]
....

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13 Most school computer networks have a router and switches.

(a) Explain what is meant by a switch.

1 ....

....

2 ....

.... [2]

(b) Describe the purpose of a router.

1 ....

....

2 ....

.... [2]

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14 Banks keep their customer account records on their file servers.

(a) Describe **three** ways in which hackers could misuse this data.

1 ....

....

2 ....

....

3 ....

.... [3]

(b) Describe the purpose of **three** different authentication techniques.

1 ....

....

2 ....

....

3 ....

.... [3]

15 A school wants to buy some new computers. Some of the computers they buy will be networked and others will be standalone computers which will not be networked.

(a) Describe **two** advantages of using networked computers.

1 ....

....

2 ....

.... [2]

(b) Describe **three** disadvantages of using networked computers.

1 ....

....

2 ....

....

3 ....

.... [3]

Eventually the school will use sets of networked Wifi laptops and cabled desktop computers which will also be networked.

(c) Discuss the advantages and disadvantages of using these laptop computers compared with using cabled desktop computers.

....

....

....

....

....

....

....

....

....

....

.... [6]

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16 Discuss the advantages and disadvantages to customers of Internet shopping compared to visiting stores to do their shopping.

....

....

....

....

....

....

....

....

....

....

.... [6]

17 A car company has decided to develop an expert system to help mechanics with their diagnoses of car faults.

(a) Describe steps required in the analysis and design of such a system.

....

....

....

....

....

....

....

....

....

.... [5]

(b) Name **two** other applications which involve the use of expert systems.

1 ....

2 .... [2]

18 Many workers now use computers a lot in their work and this can cause them to suffer from RSI.

Name **two** other possible health problems and for each one describe a different precaution which could be taken to help prevent it.

Health problem 1 ....

....

Precaution ....

....

Health problem 2 ....

....

Precaution ....

.... [4]

19 Paula, a systems analyst, has created a computer system to keep records in a small pharmacy.

(a) Identify **three** types of test data she could use to test the system.

1 ....

....

2 ....

....

3 ....

.... [3]

(b) The system will now be implemented.

Apart from speed of implementation, describe **one** benefit and **one** drawback of using the direct changeover method for the pharmacy.

Benefit ....

....

Drawback ....

.... [2]

(c) The pharmacist will be able to search for details of medicines using the database software.

Describe **four** other database features which will help the pharmacist.

1 ....

....

2 ....

....

3 ....

....

4 ....

.... [4]

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