



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

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INFORMATION AND COMMUNICATION TECHNOLOGY

0417/12

Paper 1

February/March 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.

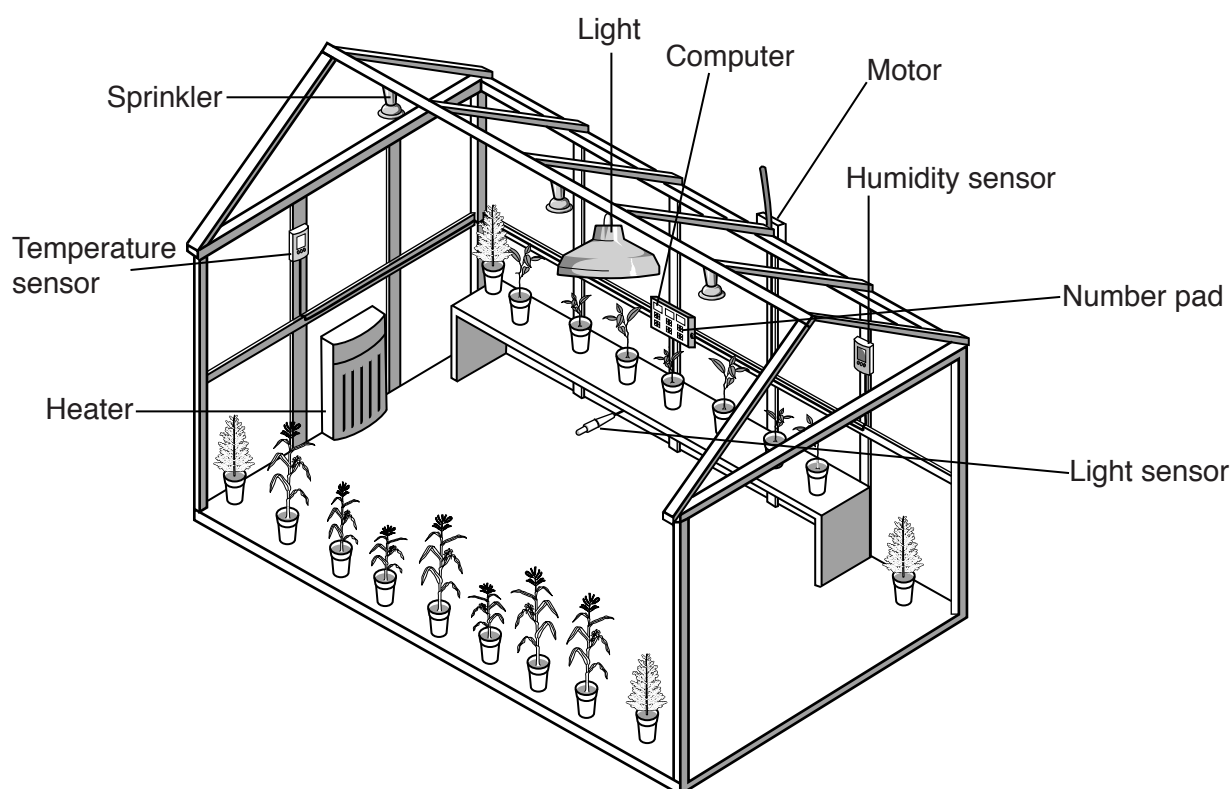
For Examiner's Use

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This document consists of **15** printed pages and **1** blank page.

2

- 1 This diagram shows a computer controlled greenhouse.



- (a) Identify **three** input devices which are shown in the diagram above.

1

2

3

[3]

- (b) Identify **three** output devices which are shown in the diagram above.

1

2

3

[3]

3

- 2 Tick the **most** appropriate method of storing data for each of the following uses.

Use	Memory card ✓	Magnetic Tape ✓	Blu-ray Disc ✓
Storing photos in a camera			
Storing file server backups			
Storing high definition movies			
Storing large numbers of payroll records			

[4]

- 3 Complete the table by identifying the **most** appropriate input device for each type of application.

Application	Device
Inputting diagrams as they are being drawn	
Inputting printed text to a computer to be processed by another software package	
Inputting moving pictures, often pre-recorded, into a computer	
Used by a pilot to control a flight simulator	

[4]

- 4 There are a number of different types of area networks.
Tick whether the following statements apply to a WAN, LAN, or a WLAN.

	WAN ✓	LAN ✓	WLAN ✓
This type of network usually requires the use of WiFi			
Usually is cabled and often housed in a single building			
Covers a large area and is often connected using a router			
Requires the use of Wireless Access Points (WAPs)			

[4]

4**5** Complete the sentences using words from the list below.

- (a)** The device used for switching channels on a television is called

.....
[1]

- (b)** A method of inputting answers from a candidate's exam paper is called

.....
[1]

- (c)** A printer which is suitable for producing large volumes of high quality printout is called

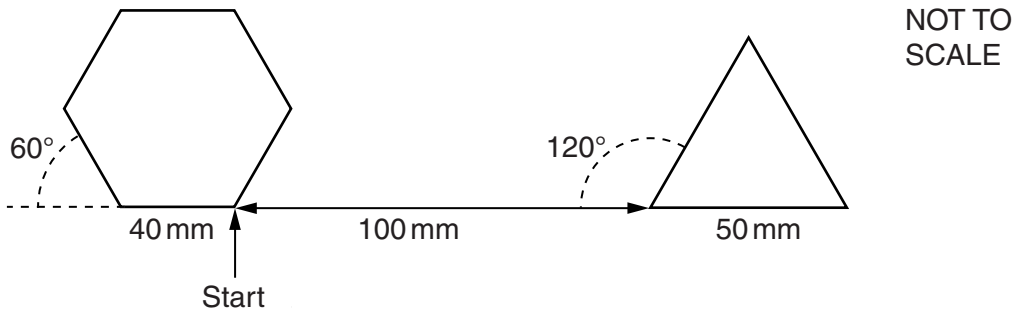
.....
[1]

ROM**a remote control****RAM****a dot matrix printer****a trackerball****OMR****a laser printer****an inkjet printer**

.....[6]

7 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



A student has written the following set of instructions to make the floor turtle draw these shapes. The turtle is facing up at the start.

1. PENDOWN
2. LEFT 90
3. REPEAT 5
4. FORWARD 50
5. RIGHT 60
6. PENUP
7. PENDOWN
8. RIGHT 120
9. FORWARD 50
10. END REPEAT

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

7

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

1.

.....

2.

.....

3.

.....

[3]

- (b) Identify the **two** incorrect instructions and for each, state the correct instruction to be used.

1.

.....

2.

.....

[2]

- 8 (a)** Identify **five different** items of data that are input at an ATM when cash is withdrawn by a customer or read from the card.

1

2

3

4

5

[5]

- (b)** Discuss the advantages and disadvantages of the use of a local ATM to withdraw cash rather than travelling to a bank.

.....

.....

.....

.....

.....

.....

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.....

.....[b]

[6]

- 9** WBA is a company that makes little profit. Its newly commissioned ICT system is ready to be implemented. It needs the new system to be in use as soon as possible.

Describe the advantages and disadvantages of using parallel running compared with direct changeover as a method of implementing the system. Choose which of these two methods of implementation WBA should use, giving reasons for your choice.

.....[8

.....[7

[7].

- (a)** Explain why backing storage is needed.

.....[4

[4]

11

(b) Describe why main/internal memory is needed.

.....

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.....

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.....

.....[4]

12 A headteacher has decided to arrange delivery of hard copy versions of the school magazine as well as placing it on the school website.

(a) Give **two** reasons why he has chosen to do this.

1

.....

2

.....

[2]

(b) Give **three** disadvantages of producing the hard copies.

1

.....

2

.....

3

.....

[3]

12

- 13 (a)** Using the example of `COUNTIF(A2:A10,"<31")`, explain how the `COUNTIF` function works.

.....

.....

.....

.....

.....

.....

.....

.....[4]

- (b)** Rupinder has created a spreadsheet showing the following data and formula.

	D	E	F	G
1	Name	Months in employment		
2	Avtar Kholi	31		=COUNTIF(E2:E10,"<=33")
3	Surjeet Singh	33		
4	Jawahar Nehru	39		
5	Sunil Kapoor	33		
6	Jasvir Shergill	42		
7	Ishita Dutta			
8	Nikhil Banerjee	38		
9	Anita Merchant	33		
10	Sanjive Kumar			

- (i)** Write down the value that would be contained in cell G2.

.....[1]

- (ii)** Rupinder subtracts the value in part (i) from 9 (the number of workers). He thinks this will tell him the number of workers who have been in employment for more than 33 months. Explain why his reasoning does **not** work.

.....

.....

.....

.....[2]

- 14** The doctors at the Mumbai Clinic have commissioned a knowledge engineer to create an expert system to help them with their diagnoses of patient illnesses.

(a) Describe how such a system would be created.

[5]

(b) Give **two** other applications apart from diagnostic systems which make use of expert systems.

1
2 [2]

14

15 Recaud Inc. stock many CDs. Below is a small selection of CDs stored on their database.

ID number	Artist_name	CD_title	Price (Rs)	Year_released	Number_of_tracks
1	Nayan Pancholi	Maa Na Nayan	249.00	2012	29
2	Nayan Pancholi, Gargi Vora	Maa Amba	145.00	2013	7
3	Lakshmi Shankar	Ecstasy	120.00	2012	2
4	Anindo Chatterjee	Anindo and His Tabla	230.00	1991	7
5	Jagjit Singh	Greatest Hits	255.00	2011	24

(a) Write down the **most** suitable data type for the following fields.

CD_title
 Price (Rs)
 Year_released
 Number_of_tracks

[4]

(b) Describe the range check which could be carried out on the Price (Rs) field. The maximum price and the minimum price are shown in the table above.

.....

[2]

15

- (c) The owner of the shop, Alam, receives requests from customers about the CDs he has in stock. He makes a note of these requests using comparison and Boolean operators. For example, a customer might ask for a CD which was released after 2002 and has at least 7 tracks. Alam would write this down as:

Year_released > 2002 AND Number_of_tracks >= 7

- (i) Write down a request for a customer who wants a list of all the CDs which were released before 2007. This list must also contain all the CDs which cost at least 145 rupees.

.....[5]

- (ii) Write down the ID numbers of those records which would match your criteria in (i).

.....[2]

16 Explain what is meant by copyright.

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.....[2]

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