



LINIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

CANDIDATE NAME			
CENTRE NUMBER		CANDIDATE NUMBER	
INFORMATIO	N AND COMMUNICATION TECHNOLOGY		0417/13
Paper 1			May/June 2012
			2 hours
Candidates an	swer on the Question Paper.		
No Additional N	Materials are required.		
READ THESE	INSTRUCTIONS FIRST		
Write your Cen	tre number, candidate number and name on all th	e work you hand in.	
	lue or black pen.		
•	soft pencil for any diagrams, graphs or rough wor	•	
Do not use sta	ples, paper clips, highlighters, glue or correction flu	uiu.	

No marks will be awarded for using brand names of software packages or hardware.

Answer all questions.

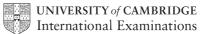
DO **NOT** WRITE IN ANY BARCODES.

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.

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This document consists of 13 printed pages and 3 blank pages.



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

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A	A	i i	3
(ı)
Roter to mount for Authoritists Stowartists Authoritists Stowartists 100 100 100	27.210 BANK		
digital camera	flash memory card	joystick	magnetic disc
magnetic stripe	scanner	touch pa	ad web cam
A		B	
Ring two items which a	re output devices.		
CRT monitor	DVD ROM		magnetic tape

plotter

[2]

trackerball

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2

number pad

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

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	True	False
Control software is used to create slide shows.		
Palmtop computers do not have internal DVD drives.		
Presentation software can be used to produce databases.		
An internet browser uses an inference engine.		
Motors are output devices.		

[5]

	4	Complete	each se	entence	below	using	one	item	from	the	list
--	---	----------	---------	---------	-------	-------	-----	------	------	-----	------

A bar code reader	A dot matrix printer	A graphics tablet
A laser printer	A microphone	A multimedia projector
A presence check	A speaker	A temperature sensor
A manuatic tone		

A magnetic tape

(a)	produces hard copy in harsh conditions.
(b)	inputs sounds.
(c)	is used to show slideshows.
(d)	is a validation rule.
(e)	is used to create backups from a server's hard disc.

[5]

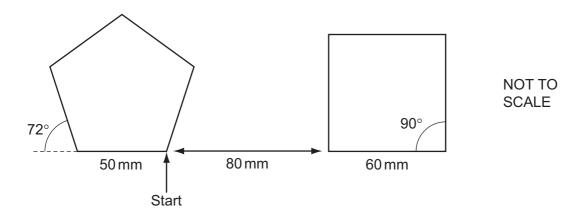
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5	The head teacher of a school wants to build computer to collect the results.	a weather station.	She wants to use	; a
	List three sensors that would be needed.			
	1			
	2			
	3			[3]
6	Draw four lines on the diagram to match the use	to its most appropri	ate input device.	
	Use	Inpu	it device	
	to select options from a list	key	board	
	to type data into a database	opti	cal mark reader	
	to input candidate examination answers	chij	reader	
	to input data directly from a bank card	mo		[4]

7 A floor turtle can use the following instructions:

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INSTRUCTION	MEANING
FORWARD n	Move <i>n</i> 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 <i>n</i> times
END REPEAT	Finish the REPEAT loop



Complete the set of instructions to draw this shape by filling in the blank lines.

PENDOWN		BACKWARD
	90	PENDOWN
REPEAT		4
	50	FORWARD
RIGHT		90
PENUP		

[8]

8 Tick **True** or **False** next to each statement describing encryption.

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	True	False
Encryption prevents hackers from understanding the data.		
Encryption destroys viruses.		
Encryption prevents unauthorised access to computer systems.		
Encryption is the scrambling of data.		

[4]

9	A group of car mechanics wants to have an expert system to help them with their work in diagnosing car engine faults. Describe how such a system would be created.
	re.

10	Describe online processing of data, using the booking of airline tickets as an example.
	[4]
11	A manager of a new company has just purchased some computers. She wishes to connect
	these computers together to form a LAN. Name and describe three network devices she might need to have in order to achieve this.
	Device 1
	Description
	Device 2
	Description
	Device 3
	Description [6]
	[o]

For Examiner's Use 12 Chi has asked Toby, a systems analyst, to create a new database system for his property agency in France. He only deals with apartments and houses. Here are some of the questions customers ask:

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Have you got a house for less than €500000? Have you got an apartment with three bedrooms? Have you got a house with more than 160 square metres floor space?

(a) Complete the design table below filling in the field names and the **most** appropriate data types to create a database which would answer these questions.

Field name	Data type
	Integer
Price	

[6]

(b)	Compare and contrast parallel running and direct changeover as ways of implementing the new database system.	g
		••
		••
		••
		 51

13 A teacher has developed a new system for keeping a record of student examination marks on her laptop and wishes to test it. Each examination is marked out of 50. Identify **three** types of test data she could use and describe each type using an example. Type 1 Description Type 2 Description Type 3 Description 14 Schools are concerned with the possibility that students are using the schools' internet connections to access undesirable sites. Name and describe two security methods the schools could use to prevent this from happening. Method 1 Description Method 2 Description

For Examiner's Use **15** Paul, a manufacturer of goods, offers discounts. The discounts are coded D, N or P. Paul keeps the details on this spreadsheet.

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(Commas are used as delimiters in the formulae shown below.)

	Α	В	С	D
1	Code	Rate		
2	D	10%		
3	N	15%		
4	Р	20%		
5				
6	Code	Price	Discount	Discounted Price
7	D	\$4.00	=IF(A7="D",B7*\$B\$2,IF(A7="N",B7*\$B\$3,IF(A7="P",B7*\$B\$4)))	
8	Р	\$2.85	=IF(A8="D",B8*\$B\$2,IF(A8="N",B8*\$B\$3,IF(A8="P",B8*\$B\$4)))	
9	D	\$1.55	=IF(A9="D",B9*\$B\$2,IF(A9="N",B9*\$B\$3,IF(A9="P",B9*\$B\$4)))	
10	Ν	\$0.98	=IF(A10="D",B10*\$B\$2,IF(A10="N",B10*\$B\$3,IF(A10="P",B10*\$B\$4)))	
11	D	\$4.05	=IF(A11="D",B11*\$B\$2,IF(A11="N",B11*\$B\$3,IF(A11="P",B11*\$B\$4)))	
12	D	\$10.00	=IF(A12="D",B12*\$B\$2,IF(A12="N",B12*\$B\$3,IF(A12="P",B12*\$B\$4)))	
13	Р	\$11.95	=IF(A13="D",B13*\$B\$2,IF(A13="N",B13*\$B\$3,IF(A13="P",B13*\$B\$4)))	
14	D	\$5.15	=IF(A14="D",B14*\$B\$2,IF(A14="N",B14*\$B\$3,IF(A14="P",B14*\$B\$4)))	
15	D	\$5.25	=IF(A15="D",B15*\$B\$2,IF(A15="N",B15*\$B\$3,IF(A15="P",B15*\$B\$4)))	
16	N	\$4.50	=IF(A16="D",B16*\$B\$2,IF(A16="N",B16*\$B\$3,IF(A16="P",B16*\$B\$4)))	
17	N	\$7.25	=IF(A17="D",B17*\$B\$2,IF(A17="N",B17*\$B\$3,IF(A17="P",B17*\$B\$4)))	
18	N	\$14.50	=IF(A18="D",B18*\$B\$2,IF(A18="N",B18*\$B\$3,IF(A18="P",B18*\$B\$4)))	

(a)	Explain what the formula in cell C7 does.
	[6]
	(b) What value would you expect to see in cell C12?
	[1]

(c)	The formula was entered into cell C7 using a keyboard. Explain how to make this formula appear in cells C8 to C18 by just using a mouse.	For Examiner's Use
	[3]	
(d)	What formula should be typed into cell D7 to calculate the discounted price?	
	[1]	
(e)	Paul could extend this spreadsheet to calculate his total profit. He could then use it as a model. Give two reasons why financial models are used.	
	1	
	2	
	[2]	
Des	scribe four features of a graphical user interface (GUI).	
1		
2		
3		
4		
	[4]	

16

17	A head teacher wishes to publicise school activities to make his school better known in the neighbourhood. He could do this by using the school's website or producing a magazine using DTP to be delivered by hand. Discuss the advantages and disadvantages of each method.	
	[6]	

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18	Robots are now used on many car production lines. Describe how their use has affected the nature of employment in the car industry.	For Examiner's Use
	[6]	

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