



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

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INFORMATION AND COMMUNICATION TECHNOLOGY

0417/12

Paper 1 Theory

February/March 2017

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 in the spaces at the top of this page and any additional pages you use.

Write in dark blue or black pen.

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.

The syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

This document consists of **14** printed pages and **2** blank pages.

2

1 Complete the following sentences, using items from the list below.

a bar code reader a chip reader a laser printer a magnetic ink character reader
a microphone a PIN pad a retina scanner a touch pad

(a) A device that reads black and white lines on a product is called
[1]

(b) A device that inputs the sound made by a human voice is called
[1]

(c) A device which is used to read the data from the bottom of bank cheques is called
[1]

(d) An input device used to input the biometric details of the eye is called
[1]

2 Tick whether the following are examples of **internal memory** or **backing storage**.

	internal memory (✓)	backing storage (✓)
Random Access Memory		
Portable hard disk		
Pen drive		
Magnetic tape		

[2]

3 Tick whether the following statements about networks are **true** or **false**.

	true (✓)	false (✓)
A hub is a central computer.		
A router connects a LAN to the internet.		
A bridge connects a WAN to a LAN.		
A switch connects computers in a network.		

[2]

3

- 4 The manager of a restaurant uses a database to store data about the food the restaurant uses. Part of the database is shown below.

Food_type	Packs_in_stock	Last_order_received	Re-order
Lentils	68	06/03/2017	N
Rice	54	10/03/2017	Y
Flour	19	01/02/2017	Y
Ghee	34	05/03/2017	Y

Below is a list of data types. Next to each one write down the field name which most closely matches that data type. Each answer must be different.

Date

Text

Boolean

Numeric

[4]

- 5 Describe how security can be improved in a WiFi network.

.....

 [2]

- 6 Sukhjit has just discovered a large amount of spam emails in her inbox and is worried it may be a phishing attempt.

(a) Explain some other dangers of opening spam emails.

.....

 [3]

4

Spam is sometimes associated with phishing emails.

(b) Describe how Sukhjit would recognise a phishing email.

.....

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.....

.....

.....

.....

.....[4]

7 Explain the purpose of an intranet.

.....

.....

.....

.....

.....

.....[3]

8 Describe how an expert system can be used to suggest car engine fault diagnoses.

[5]

9 Dhanesh has accidentally downloaded a file containing a virus.

(a) Describe the possible effects on Dhanesh's computer system if he opens the file.

.....[2]

(b) Describe how Dhanesh can help prevent his computer from downloading viruses from the internet.

[3]

10 Bank cheques are sometimes used to pay bills.

(a) Name **four** pieces of information that the bank's computer may read from the bank cheque.

1

2

3

4

[4]

(b) Describe what is involved in the clearing of bank cheques which the bank has collected in the course of the day.

.....

.....

.....

.....

.....

.....

[3]

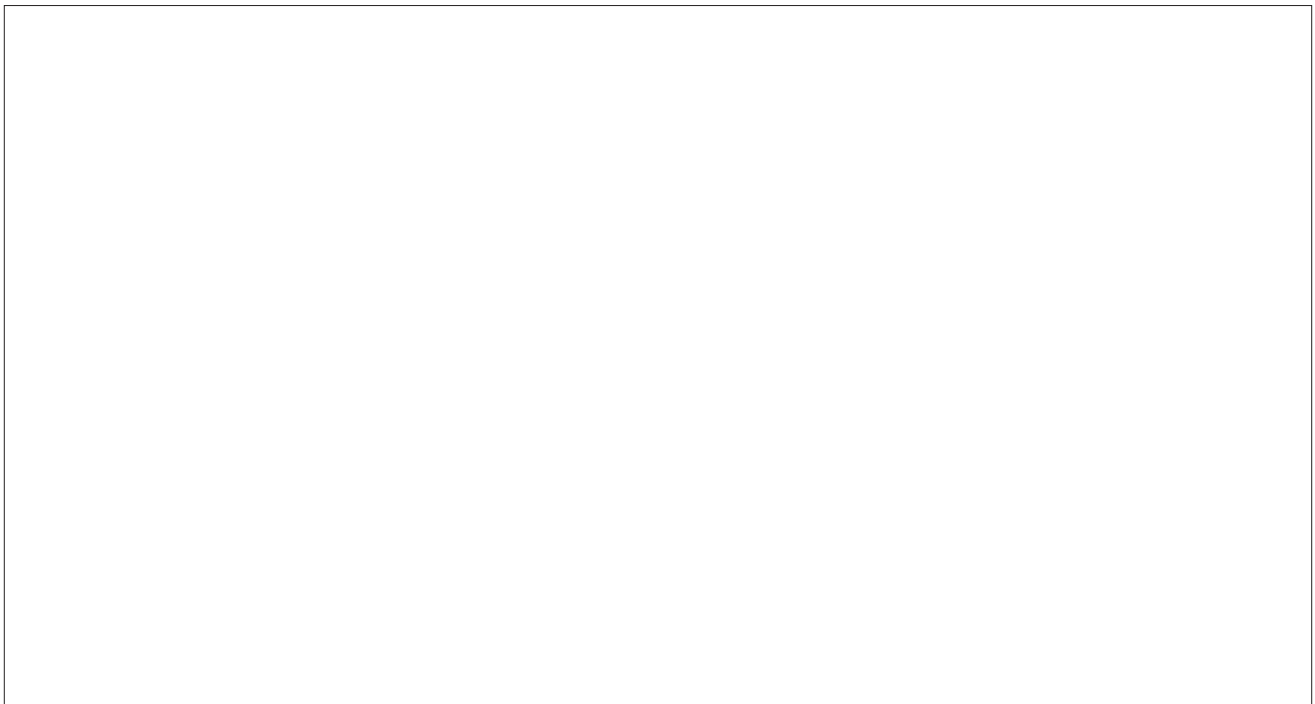
12 Hot House Design require a new multimedia presentation for training sessions to be held in Hyderabad.

(a) You have been asked to design a master slide for the presentation.

The slide must include the following details:

- a labelled rectangular box to represent the Hot House Design logo;
- a heading: Hot House Design Training;
- a subheading with the name of the venue city;
- the name of the trainer – Ranjit Desai;
- slide number and date of meeting.

Use the space below to design a master slide for the presentation.



[5]

(b) The trainers will need to show the presentation and produce handouts for participants. Name **three** output devices they would need.

- 1
- 2
- 3

[3]

- 13** A teacher wants to record the results of tests for each student in a spreadsheet. He sets test papers for both the theory (T) and practical (P) aspects of the ICT course.

Part of the spreadsheet is shown below.

	A	B	C	D	E	F	G	H	I	J	K
2											
3	Student	T	P	P	T	T	P	P	Average mark	Grade	Total theory mark
4	Rajesh Patel	23	45	44	78	34	129	124			
5											
6											
7											
8											
9											
10											
11	Max marks	50	90	90	90	100	140	130			

- (a) Write down a formula you would use in cell K4 which makes use of the labels in row 3, where appropriate, to add up the marks for the theory tests only.

.....[4]

- (b) Write down a formula that you would enter in cell I4 to calculate the average of Rajesh's results.

.....[2]

- (c) Describe how the teacher could format the average mark to 2 decimal places.

.....

.....

.....

.....[2]

10

	G	H	I	J	K	L	M	N	O
2									
3	P	P	Average mark	Grade	Total theory mark				
4	129	124	68.14					0	U
5								20	G
6								30	F
7								40	E
8								50	D
9								60	C
10								70	B
11	140	130						80	A

- (d) The teacher wants the spreadsheet to calculate a student's grade automatically. He needs to calculate this from the average mark of all the results for the student.

Write down below a formula which should be entered into cell **J4**.

It should use the calculated average mark.

It will search for Rajesh's average mark in column N and return the corresponding grade.

It should be easily replicated for other students.

.....[4]

- 14 When a system has been created documentation needs to be produced.

- (a) Explain why technical documentation is needed.

.....

[2]

- (b) Explain why user documentation is needed.

.....

[2]

- 15** Part of a database report showing August temperatures in several cities in India is shown below.

Name of City	Max_temp	Min_temp
Kolkata	33	26
Chennai	34	26
Mumbai	31	26
Hyderabad	31	24
Allahabad	35	26

Describe how you would create a calculated field called temp_diff to show the difference between the maximum and minimum temperatures.

.....

.....

.....

.....

.....

.....[3]

- 16** 3D printers are being used for producing personalised prescription drugs.

(a) Give **two** advantages of using 3D printers for this purpose.

1

.....

2

.....

[2]

(b) Give **two** disadvantages of using 3D printers for this purpose.

1

.....

2

.....

[2]

-[6

- Give **two** examples of personal data.

1

2

[2]

13

(c) Describe ways of protecting your personal data when using the internet.

.....

.....

.....

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.....

.....

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.....

.....

.....

.....[5]

18 Many devices in the home can now connect directly to the internet.

Smartphones and computers used in the home can connect to the internet.

Discuss the benefits and drawbacks of using other devices that connect to the internet in the home.

[8]

15

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