



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education

CANDIDATE  
NAME

CENTRE  
NUMBER

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**INFORMATION AND COMMUNICATION TECHNOLOGY**

**0417/11**

Paper 1 Theory

**May/June 2017**

**2 hours**

Candidates answer on the Question Paper.

No Additional Materials are required.

**MODIFIED LANGUAGE**

**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 **16** printed pages.



1 Complete the following sentences using the most appropriate words from the list below.

hard disk drive      hardware      microphone      OCR      printer  
 scanner      screen      software      speaker      virus

(a) The physical components of a computer are called..... [1]

(b) The programs and data of a computer are called..... [1]

(c) The device used to input sound is called a..... [1]

(d) The device used to store data is called a..... [1]

2 Tick whether the following are examples of **impact** printers or **non-impact** printers.

	<b>impact</b> (✓)	<b>non-impact</b> (✓)
Dot matrix printer		
Inkjet printer		
Laser printer		
3D printer		

[2]

3 Tick whether the following statements about internal and external memory are **true** or **false**.

	<b>true</b> (✓)	<b>false</b> (✓)
A portable hard drive is an example of internal memory.		
Magnetic tape is used to store backups of data.		
RAM is internal memory.		
ROM loses its data when the power is turned off.		

[2]

- 4 A new system has to be tested before it can be implemented. A variety of test data is used.

Name the following types of test data.

- (a) Data that is outside the boundaries of acceptability.

..... [1]

- (b) Data that is on the boundary of acceptability.

..... [1]

- (c) Data that is not on the boundary but is within the range of acceptability.

..... [1]

- (d) Data that has been used before and has known outcomes.

..... [1]

- 5 There are a number of health and safety issues associated with the use of computers.

Draw arrows from the terms **Health** or **Safety** to the matching issue. Use a maximum of four arrows.

Health

Safety

Tripping over loose wires.

Heavy equipment falling off tables and injuring people.

Clicking a mouse repetitively causing RSI.

Overloading sockets causing fire.

[4]

6 Validation is a way of checking data in a database.

Name the most appropriate validation check that matches each description below.

Makes sure that the data entered into a field is exactly 10 characters.....

.....

Makes sure that a number lies between 10 and 100.....

.....

Makes sure that the data entered is numeric.....

.....

Makes sure that the date is entered as DD/MM/YYYY.....

.....

[4]

7 Explain the meaning of the following terms used in document production.

Gutter.....

.....

Header.....

.....

Widow.....

.....

Wrapping.....

.....

[4]

8 A company is setting up a video-conference.

(a) Name **three** computer hardware devices they would need.

1.....

.....

2.....

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3.....

.....

[3]

(b) The company could have set up a web-conference rather than a video-conference.

Describe what is meant by a web-conference.

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.....  
.....  
.....  
.....  
.....  
.....

[4]

9 An automatic washing machine contains a device to read RFID chips sewn into clothing. When an item of clothing is placed in the washing machine it is scanned.

(a) Describe how the data is read from the RFID chip.

.....  
.....  
.....  
.....

[2]

(b) Explain the benefits of using RFID technology in a washing machine.

.....  
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.....  
.....

[2]

10 The city of Venice is in danger of being damaged due to rising sea levels. A new computer controlled flood defence system is being planned. The developers of the system are using a spreadsheet to model the plan.

(a) Give **three** reasons why computer models are used to simulate the flood defence system.

1.....  
.....  
2.....  
.....  
3.....  
.....

[3]

(b) The city uses a manual system for detecting flood waters. This relies on people watching for the rising levels of water.

Explain why creating a computerised system is better than using the manual system.

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[4]

- (c) The developers have used the results from the model to choose a computer controlled flood defence system. It will have a barrier which can open or close.

Describe the role of the microprocessor in such a system.

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[5]

- 11 Below is part of a spreadsheet of candidates' examination grades. A teacher needs to create formulae to analyse these grades. There are 64 grades in the full list, in cells B6 to B69.

	A	B	C	D	E	F	G
1	Results for Centre XX123						
2							
3	Qualification: IGCSE						
4							
5	Cand. No	ICT		Totals			
6	3001	E		A*			% A* - C
7	3002	C		A			% A* - G
8	3008	C		B			
9	3012	D		C			
10	3015	C		D			
11	3017	C		E			
12	3021	A		F			
13	3024	E		G			
14	3025	C		U			
15	3026	E		X			
16	3027	C					
17	3028	D					

- (a) Write the most efficient formula that could be entered in cell E6 to display the number of A\* grades for ICT in the full list. The formula must be easy to replicate for the other grades.

.....

..... [4]



(b) The teacher wants to copy the formula down to E15 without having to re-type any of the cells.

Describe how he could achieve this.

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[3]

(c) The teacher needs to calculate the percentage of students gaining A\* to C grades.

Write the most efficient formula to achieve this.

.....

[4]

- (d) The teacher wishes to create an appropriate chart or graph to be placed on a separate sheet. It will show the grades and the corresponding total number of students gaining those grades.

Describe how the teacher could achieve this.

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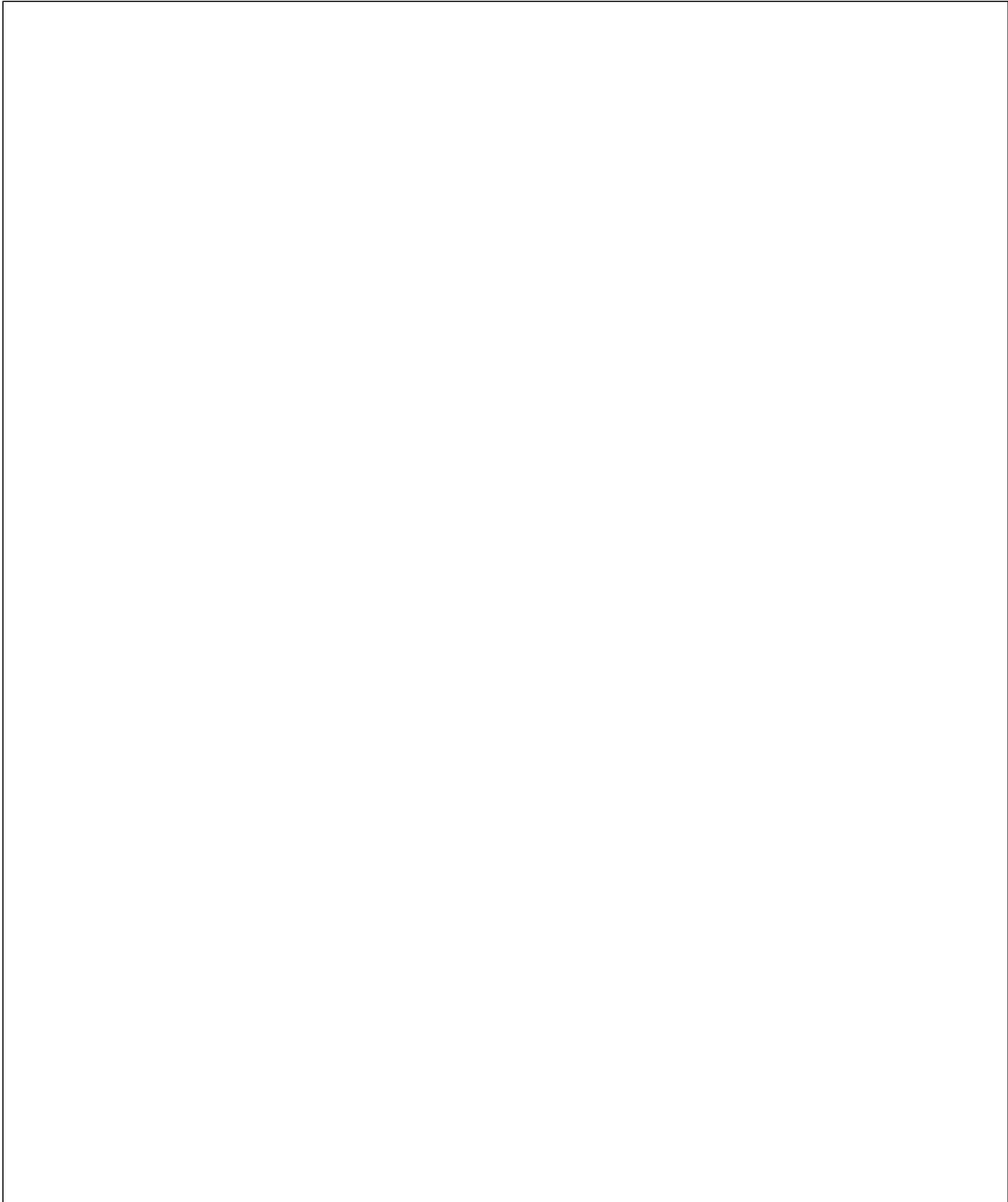
.....

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[5]

- 12** The Staywell Community Centre has created a new database which stores the details of each of its members. Each member can choose either swimming or tennis as an activity. The fields in the database are name, address, contact number, gender and activity.
- (a)** When new members arrive at the centre they need to complete a paper-based form. Design a suitable paper-based form to collect the member's details and the activity they wish to book for.



[5]

(b) Describe **four** changes which could be made to this paper-based form to make it into an online screen form.

- 1.....  
.....
- 2.....  
.....
- 3.....  
.....
- 4.....  
.....

[4]

13 (a) A picture is an element of a web page. Name **three** other elements that could be used in a web page.

- 1.....
- 2.....
- 3.....

[3]

A student is designing a web page about herself which she plans to publish on the internet. The web page will contain a picture of herself as well as other details.

(b) She wants to place a picture “sport.jpg” on it.

Write the line of HTML markup to display the picture or to display the words “play sport” if the browser cannot locate the picture.

.....  
 .....  
 .....  
 .....

[2]

(c) She has been advised by her teacher that she needs to be aware of e-safety.

Describe the e-safety issues that she should be aware of before she publishes this web page.

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[4]



- 15 You use a computer to do your homework. You are concerned about the health issues of using a computer.

Discuss the advantages and disadvantages of different methods you could use to help minimise the health problems of using the computer.

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[6]

16 Robots are being used in the mining industry to dig up minerals from under the surface of the Earth.

(a) Give **three advantages** of using robots rather than humans to do this task.

- 1.....  
.....
- 2.....  
.....
- 3.....  
.....

[3]

(b) Give **two disadvantages** of using robots rather than humans.

- 1.....  
.....
- 2.....  
.....

[2]

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