



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

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INFORMATION AND COMMUNICATION TECHNOLOGY

0417/13

Paper 1 Theory

May/June 2018

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.

Any businesses described in this paper are entirely fictitious.

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.

This 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.



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1 A computer contains internal hardware.

Write down the item of internal hardware from the list to match the descriptions.

CD ROM Internal hard disk Network card RAM ROM
Sound card Touch screen Trackerball Video card Wide format printer

(a) Stores the start-up instructions for the computer.

..... [1]

(b) A magnetic medium that stores applications when they are not in use.

..... [1]

(c) Memory where data is lost when the computer is turned off.

..... [1]

(d) Generates images to display on the monitor.

..... [1]

2 For each application tick the most appropriate type of computer to match the description.

	Desktop (✓)	Laptop (✓)	Smartphone (✓)
A computer that is only used in one place.			
Must always be connected to an external power source to work.			
Small enough to fit into a pocket.			
A mobile device with a large keyboard and display.			

[4]

- 3** Data can be input into computers using direct data entry.
Tick the most appropriate method of direct data entry for each statement.

	MICR (✓)	OMR (✓)	OCR (✓)
Used to read magnetic data on cheques.			
Used to read car number plates.			
Used when entering handwritten text.			
Used to read multiple-choice examination responses.			

[4]

- 4** Circle **two** items which are used as output devices.

3D printer

Magnetic tape

Microphone

Monitor

Sensor

Web cam

[2]

- 5** A fish farm has a computer system that constantly monitors the quality of the water in its fish ponds. The system uses sensors to carry out the monitoring.

(a) Name **two** sensors that could be used to monitor the quality of the water in the fish ponds.

1

2

[2]

(b) Name the device that is used to convert the data from the sensor into a form that could be read by the computer.

.....

[1]

(c) Describe the role of the computer in monitoring the quality of the water in the fish ponds.

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[3]

6 Describe the following security issues.

(a) Phishing

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..... [2]

(b) Pharming

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..... [2]

(c) Smishing

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..... [2]

- 7 Peta is designing a new logo for his computer club. It must fit into a space 15 mm square on the club's headed note paper. The logo must look like this:



He is using a graphics package and has started by producing a white 10 mm square with a black border like this:



Describe, in detail, how he can complete the logo.

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[6]

- 8 A large farm uses a robotic system to milk and feed animals. Until recently this would have been carried out by farm workers.

Discuss the advantages and disadvantages of using robotics in automated farms.

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[6]

- 9** A teacher is creating a web page in HTML to display on the school's intranet.

All colour codes must be in hexadecimal. It has the following style sheet attached:

```
h1      {color: #ff0000;
        font-family: Times, serif;
        font-size: 30pt;
        text-align: center;}

h2      {color: #0000ff;
        font-family: Times, Helvetica, serif;
        font-size: 24pt;
        text-align: center;}

h3      {color: #00ff00;
        font-family: Times, Helvetica, serif;
        font-size: 14pt;
        text-align: justify;}

body    {background-color: #ad88e6;}

table   {border-color: #000000;}
```

Having tested the web page the teacher needs to make some changes to the style sheet.

Write down the CSS to:

- (a)** edit style h1 so that the font is Comic Sans or, if not available, Arial or, if this is not available, the browser's default sans-serif font.

font-family:
 [3]

- (b)** add markup to the table style to set a 3 pixel wide, dashed external border.

table {border-color: #000000;
 } [4]

- (c)** edit style h3 so that the colour is set to black.

h3 {color:
 [1]

(d) add markup to the start of style h2 to display the text as bold.

h2 {.....
..... [2]

- 10 Magnetic tapes are traditionally used for backing up data on large computer systems. Liu works from home and is considering either backing up her data on to magnetic tape or a pen drive.

Give **three** reasons why she may prefer to use a pen drive.

1
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2
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3
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[3]

- 11** When a system has been developed, two types of documentation are produced, technical and user documentation.

(a) Explain why user documentation is needed.

.....
..... [2]

(b) Explain why technical documentation is needed.

.....
..... [2]

(c) Identify **four** components that are only found in user documentation but not found in technical documentation.

- 1
- 2
- 3
- 4

[4]

- (d) Tick **three** evaluation strategies that need to be carried out following implementation of the new system.

	Tick (✓)
Observe users operating the old system.	
Compare the final solution with the original requirements.	
Design the report layout.	
Check user documentation to see if it is correct.	
Interview users to gather responses about how well the new system works.	
Test the system works correctly.	
Identify any necessary improvements that need to be made.	
Design error handling.	

[3]

- 12 There are two types of verification, visual and double data entry.

Explain the differences between visual verification and double data entry.

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[2]

13 An organisation is planning to train all staff online rather than by video-conference.

(a) Describe what is meant by a web-conference.

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[3]

(b) Explain the differences between video- and web-conferencing.

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[3]

14 Continuous use of computers can lead to a number of health issues.

In the table there are some recommended ways to minimise specific health issues. For each way, identify the most appropriate health issue it is trying to minimise.

Identified health issues must be different in each case.

Ways of minimising the health issue	Health issue
Use ergonomic keyboards.	
Use fully adjustable chairs to give correct posture.	
Change to LCD screens from CRT screens.	
Have the monitor at the correct height.	

[4]

- 15** Drones are unmanned flying vehicles that are used for commercial and leisure activities. Drones are fitted with cameras to monitor situations.

A river has burst its banks following prolonged heavy rainfall. Explain why drones are used to help monitor the situation.

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[4]

- 16** The manager of a large company wants to replace the company's cabled LAN with a WLAN.

Describe the features of a WLAN.

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[6]

17 A small company makes toys and then delivers them to shops.

Throughout the day orders are received by the company from its customers. The office workers in the finance department create and store an invoice for each order. They are too busy to be disturbed from their work.

Delivery drivers receive copies of the invoices which they will pass on to their customers. The drivers make a large number of deliveries per day and do not return to the office.

A systems analyst will research the current system and suggest improvements to be made.

- (a)** For each type of employee identified above, describe the most suitable method of collecting information from them, giving a reason for your choice.

Office workers.....

.....

Reason.....

.....

Delivery drivers.....

.....

Reason.....

.....

[4]

- (b) The factory is based on one site and only has space for one production line. The company has decided to computerise its production line. It will use direct changeover as the method of implementing the new system.

Explain why the company would use this method rather than other methods of implementation.

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[4]

- 18** As more and more people use the internet at home to carry out transactions they are at risk of downloading software that could corrupt files or copy credit card details.

Discuss the effectiveness, or otherwise, of using different methods of increasing the security of a home computer.

This image shows a full page of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

[8]

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