



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

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**INFORMATION AND COMMUNICATION TECHNOLOGY**

**0417/11**

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 **15** printed pages and **1** blank page.



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

- A 3D printer    An ADC                    A compiler    An interpreter    A microphone**  
**A monitor        A numeric keypad    A speaker    A switch        A USB**

- (a) ..... is a device used to input a PIN. [1]  
 (b) ..... analyses and executes a program line by line. [1]  
 (c) .....produces output in the form of solid objects. [1]  
 (d) .....produces output in the form of sound. [1]

2 Tick whether the following are examples of **Magnetic tape**, **Blu-ray** or **DVD RAM**.

	<b>Magnetic tape</b> (✓)	<b>Blu-ray</b> (✓)	<b>DVD RAM</b> (✓)
Does not require a laser to read the data.			
Uses serial access only.			
Used to store and play HD movies.			
Can store and read data at the same time.			

[4]

3 A media company with branches around the world has recently opened a new branch in London. The branch includes a number of different computer networks. Identify the most appropriate type of network to answer each of the questions.

- (a) The type of network used to connect the branch to its head office in New York is called a ..... [1]  
 (b) The type of cabled network used to connect computers together in one of the offices is called a ..... [1]

4 Circle the names of **three** devices which are used for input.

- CD writer                    Laser printer                    Pen drive                    Mouse  
 Speaker                    Touch screen                    Remote control                    Wide format printer

[3]

5 A geyser is a hot spring in which water occasionally boils, sending a tall column of water and steam into the air. A temperature sensor is used to monitor the temperature near the geyser. The data from the sensor is sent to a microprocessor.

(a) Explain why the data from the sensor has to be changed before it is read by the microprocessor.

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

[3]

(b) Describe **five** advantages of using sensors and microprocessors to monitor the temperature in geysers rather than using manual methods.

1 .....

2 .....

3 .....

4 .....

5 .....

[5]

6 Tick whether the following refer to **moderated** or **un-moderated** forums

	<b>moderated</b> (✓)	<b>un-moderated</b> (✓)
All posts are held in a queue.		
Posts are not policed.		
This forum reduces the chance of offensive messages.		
This forum stops several postings of the same topic.		

[2]

7 A student is producing a website for his history course. He has produced the following CSS. However, he has made some mistakes in the coding.

```
h1 {color: #ff0000;  
    font-family: "Times New Roman", Times, serif  
    font-size: 30pt;  
    text-weight: bold;  
    text-align: centre;}
```

```
h2 {color: #000000;  
    font-family: Courier, Times, serif;  
    font-size: 14pt;  
    text-decoration: underlined;  
    text-align: justify;}
```

```
body [background-color: #ad88e6;]
```

```
table {border-color: #000000;  
        border-style: dot;  
        border width: 3px;}
```

```
tbody {background-color: #c6dde8;}
```

Write down **six** mistakes that have been made in the CSS and for each, give the correction. Your answers should be different in each case.

1 .....

.....

2 .....

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3 .....

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4 .....

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5 .....

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6 .....

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[6]

8 A large organisation is introducing a new computer system.

Compare and contrast pilot implementation with phased implementation of the new system.

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[6]

- 9 A farmer has purchased a computerised milking system for her cows. She has asked a systems analyst to create a database to store details of the cows being milked.

Examples of the details of the cows which will be stored are:

Breed_of_cow	Date_of_birth	Weight_of_cow	Average_milk_yield	Animal_passport_number
Holstein	25/02/2017	725.9	24.5	998/2017
Ayrshire	15/03/2016	715.0	20.1	972/2016
Jersey	25/02/2017	732.7	25.0	971/2016
Holstein	10/10/2016	715.0	25.0	765/2016

- (a) Complete the following table by entering the most appropriate data type for each field.

For any numeric field, specify the type of number.

Field name	Data type
Breed_of_cow	
Date_of_birth	
Weight_of_cow	
Average_milk_yield	
Animal_passport_number	

[5]

- (b) State which field would be the most appropriate for the primary key.

..... [1]

- (c) A validation check is used when entering the animal passport number into the database.

Name and describe the most appropriate validation check that could be applied to this field.

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

(d) The amount of milk each cow produces is currently recorded daily in a spreadsheet.

This is part of the spreadsheet.

	A	B	C	D
1	Daily Milk Yield			
2				
3	Animal Passport Number		971/2016	
4				
5	Date of milking	Amount produced		
6		Litres		
7	26/04/2018	24.5		
8	27/04/2018	23.2		
9	28/04/2018	22.1		
10	29/04/2018	25.1		
11	30/04/2018	24.9		
12	01/05/2018	24.7		
13	02/05/2018	24.6		
14	03/05/2018	23.9		
15	04/05/2018	23.9		
16	05/05/2018	23.8		

You have been asked to produce a graph or chart to show the amounts of milk for the cow with Animal Passport Number 971/2016.

Describe the steps you would use to produce a graph or chart of this data as a separate sheet. Include in your answer the name of the new sheet.

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[6]



10 Carlos is designing a new computer system to replace an existing system.

(a) Tick **four** items which will need to be designed.

	Tick (✓)
Inputs to the current system.	
Data capture forms.	
Report layouts.	
Limitations of the system.	
Observation methods.	
Improvements to the system.	
User and information requirements.	
Validation routines.	
Problems with the current system.	
File structure.	

[4]

(b) Before the system is implemented it needs to be tested. Different types of test data are used to test the system. An example of test data is live data.

Describe what is meant by live data.

.....

.....

.....

.....

[2]

(c) Following the implementation of the system, technical documentation needs to be written.

Identify **three** components of technical documentation which are not found in user documentation.

1 .....

2 .....

3 .....

[3]

11 Expert systems are used by doctors.

(a) Describe how an expert system can be used to diagnose illnesses.

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.....  
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[5]

(b) Name **two** other applications of expert systems.

1 .....

2 .....

[2]

12 A motor car company has some designers based in London and some in Beijing. The cost of travel between the two cities is very high, so when they wish to meet to discuss new products they use video-conferencing.

(a) The designers all have PCs with a keyboard and a mouse in order to take part in video-conferencing.

Name **three** other devices used to input or output data which would be needed to take part in the video-conference.

1 .....

2 .....

3 .....

[3]

(b) Describe **three** potential problems of the designers using video-conferencing systems rather than meeting in either London or Beijing.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

(c) Documents that are sent between the two cities are encrypted.

Explain what encryption is and why it is used.

.....

.....

.....

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.....

.....

.....

[3]

13 Using computers can lead to a number of physical safety issues.

Describe **four** of these types of issue.

1 .....

.....

2 .....

.....

3 .....

.....

4 .....

.....

[4]

14 Many computer systems use virtual reality.

(a) Explain what is meant by virtual reality.

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

[2]

(b) Name **two** pieces of hardware used in virtual reality systems.

1.....  
2.....

[2]

15 A new electronic cricket scoreboard is being tested. It stores the number of runs scored by each player during a cricket match. The designer of the scoreboard assumes that no player will score more than 400 runs.

Describe each type of test data shown below giving an appropriate example.

(a) Normal

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

[2]

(b) Abnormal

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

[2]

(c) Extreme

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

[2]

16 Describe the features of the following:

(a) Blog

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

[2]

(b) Wiki

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



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