



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

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INFORMATION AND COMMUNICATION TECHNOLOGY

0417/13

Paper 1 Theory

October/November 2016

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 Tick whether the following statements are **true** or **false**.

	true (✓)	false (✓)
Tablet computers have touch screens.		
Smartphones will only connect to the internet through WiFi.		
A tablet computer has a separate keyboard.		
Smartphones use a touchpad.		

[2]

2

```

Administrator: Command Prompt - diskpart
Microsoft Windows [Version 6.0.6001]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>diskpart

Microsoft DiskPart version 6.0.6001
Copyright (C) 1999-2007 Microsoft Corporation.
On computer: WIN-D1IMKIGIOS6

DISKPART> list disk

   Disk ###  Status         Size           Free           Dyn  Gpt
   -----  -
   Disk 0    Online            50 GB             0 B

DISKPART>

```

(a) Give the type of interface shown above.

.....[1]

(b) Give a disadvantage of using this type of user interface.

.....
[1]

(c) Another type of interface is a graphical user interface (GUI).

Tick whether the following statements are **true** or **false**.

	true (✓)	false (✓)
A GUI involves the use of windows and menus.		
User interaction with a GUI is intuitive.		
A GUI takes up a lot of memory and resources.		
Users have to learn a list of system commands in order to use a GUI.		

[2]

3

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

	true (✓)	false (✓)
ROM is Real Optical Memory.		
RAM stores the instructions you are currently working on.		
ROM stores the BIOS.		
RAM allows the user to read and write data.		

[2]

4 Different devices connected to the computer have a number of different characteristics.

(a) Name the type of printer that is best suited to operate in harsh conditions.

.....[1]

(b) Name a type of monitor that can reduce the effects of eye strain.

.....[1]

(c) Name the type of printer that produces a solid object.

.....[1]

(d) Name the type of monitor that is an input device on which output can be seen and is found in a public information system.

.....[1]

5 A new system is being implemented in a company. The systems analyst has a number of ways that the system can be implemented.

For each named method, give an advantage of using the implementation over the others.

Parallel running

.....

Direct changeover

.....

Phased implementation

.....[3]

4

6 In many countries, hacking of computer systems is an offence.

(a) Explain, using examples, the term hacking.

.....

.....

.....

.....

.....

.....[3]

(b) Describe the measures that should be taken to help protect data from being hacked.

.....

.....

.....

.....

.....

.....[3]

5

- 7 This email has been received by a bank customer who believes it may be fraudulent.

Give **three** reasons why the customer may be suspicious.

From: no_reply@manger.tawarabank.com
Subject: Account Status

Dear Costumer,

Due to resent activity on account, we have reason to believe that your account has been compromised . For your security, we have temporarily prevented access to your account. Tawara Bank safeguards your account when there is a possibility that someone other than you tried to log in. You may be getting this message because you signed in from a different location or device. If this is the case, your access may be restored when you log in your username and password.. For immediate access, you are required to follow the instruction below to confirm your account in order to secure your personal account information.

Click [here](#) to log In to your Account

If you have any problems trying to log in to your account, please reply to this email giving your username and password and we will check your setting.

Regards, Paige Turner
Chief Customer Officer
CardHolder Services

- 1
- 2
- 3

[3]

- 8 Uniform Resource Locators (URL) are used to locate web addresses and resources. In order to get to the weather forecast for Auckland, New Zealand, you would enter:

<http://www.bbc.com/weather/2193733>

- (a) Describe each of the following elements in the web address.

http://
.....[1]

www.bbc.com
.....[1]

weather
.....[1]

2193733
.....[1]

- (b) The 2016 CIE IGCSE ICT syllabus can either be found using a web browser or a search engine.

Describe **two** advantages of using a web browser rather than a search engine.

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

- 9 You have completed a word processed report for a History project on the First World War. You set the computer to check the grammar and spelling.

Explain why you still need to check the spelling and grammar visually.

.....
.....
.....
.....
.....[3]

- 10** There are several ways in which members of an organisation can organise meetings. These include video-, audio- or web-conferencing.

- (a)** An organisation is planning an important meeting with the Directors of the three main offices. They are going to set up an audio-conference.

Describe the process of setting up this type of conference.

.....

.....

.....

.....

.....

.....

.....

.....

.....[4]

- (b)** The organisation has a computer network which is connected to the internet. The router contains a firewall.

Explain why a firewall is needed.

.....

.....

.....

.....

.....

.....

.....

.....[4]

.....[2]

Discuss the benefits and drawbacks of storing data in the cloud.

.....[6]

- 12** A householder has installed a computer controlled burglar alarm.

Describe the processing involved in a computer controlled burglar alarm.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[5]

- 13** Name **three** components of an expert system.

1

2

3[3]

- 14** Car production lines use robots to manufacture the vehicles. The robots have devices attached to their arms to help in the manufacturing process.

(a) For each of the named devices, describe their use on a car production line.

Video camera[1]

.....

Light sensor[1]

.....

Pressure sensor[1]

.....

10

- (b) Give **three** advantages to the company of using robots rather than humans to manufacture cars.

.....

.....

.....

.....

.....

.....[3]

- (c) Give **three** disadvantages to the company of using robots rather than humans to manufacture cars.

.....

.....

.....

.....

.....

.....[3]

- (d) Cars have to be designed before they can be manufactured. 3D printers can be used to produce models of a car.

Describe the process involved in producing the models.

.....

.....

.....

.....

.....

.....[3]

15 (a) A router is connected to a LAN.

Describe the function of a router.

.....

.....

.....

.....[2]

(b) Different methods can be used to connect computers to networks.

Describe **two** advantages for each of the following methods.

WiFi

.....

.....

.....[2]

Satellite

.....

.....

.....[2]

3G/4G

.....

.....

.....[2]

12

16 The following is part of a household budget spreadsheet. Cells B9 and B14 contain formulas. The owner wishes to test the spreadsheet which must follow the following rules:

- No individual outgoings can be greater than \$100
- The balance can be negative or positive

	A	B	C
1	Household budget		
2			
3	Outgoings		
4	Heating	\$45.00	
5	Food	\$80.00	
6	Travel	\$35.00	
7	Utilities	\$61.00	
8	Clothes	\$40.00	
9		\$261.00	
10	Income		
11	Total Salary	\$280.00	
12			
13			
14	Balance	\$19.00	
15			

(a) Describe **four** testing strategies you could use to test the model.

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

[4]

13

- (b) Describe how you would change the spreadsheet so that it alerts the user if any outgoing is greater than \$100.

.....

.....

.....

.....

.....

.....[3]

- 17 A new toll road that drivers pay to use has just opened. The company that owns the road uses Electronic Number Plate Recognition Systems to collect payments from drivers automatically.

Describe how an Electronic Number Plate Recognition System works.

.....

.....

.....

.....

.....

.....

.....

.....[4]

- 18 For each of the following safety issues suggest a possible strategy for preventing the problem.

Electrocution

.....[1]

Fire

.....[1]

Tripping over trailing leads

.....[1]

Heavy equipment falling

.....[1]

Devices like these need to connect to the internet. Discuss the advantages and disadvantages of connecting them to the internet.

[8]

15

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