Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME	
CENTRE NUMBER	
CANDIDATE NUMBER	

8150802747

INFORMATION AND COMMUNICATION TECHNOLOGY **0417/11**

Paper 1 Theory **October/November 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 on 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 **12** printed pages.

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[Turn over

1 There are many types of printer. Name the printer which best fits the descriptions given below.

(a) A printer that prints by pressing metal pins against an ink ribbon onto the paper

.....[1]

(b) A printer that sprays tiny droplets of ink directly onto the paper

.....[1]

(c) A printer that uses toner to transfer the print image to plain paper

.....[1]

(d) A printer that uses resin to create solid objects

.....[1]

2 Complete each sentence below using the most appropriate item from the list.

a bridge	**a hub**	**a keyboard**	**a microphone**	**a mouse**
a printer	**a router**	**a scanner**	**a sensor**	**a switch**

(a) A network device which broadcasts data passing through it is called

.....[1]

(b) A network device that connects a LAN with the internet is called

.....[1]

(c) A network device that connects a LAN to another LAN using the same protocol is called

.....[1]

(d) A network device that learns which devices are connected to which ports is called

.....[1]

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

	true (✓)	**false (✓)**
Answers to multiple choice examination papers can be read using an Optical Mark Reader.		
MICR reads the information on a credit card.		
The chip on a credit card is read by a PIN reader.		
An RFID chip can be used to track stock.		

[2]

4 Tick whether the following activities are part of the **Design** or the **Implementation** or the **Evaluation** of a system.

	Design (✓)	**Implementation (✓)**	**Evaluation (✓)**
Comparing the outcomes with the original task requirements			
Changing over to the new system			
Identifying any limitations and necessary improvements to the system			
Selecting validation routines			

[4]

5 Laptop computers are often equipped with Solid State Drives (SSD) or Hard Disk Drives (HDD).

(a) Give **four** advantages of SSD compared to HDD.

1 .....

.....

2 .....

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3 .....

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4 .....

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[4]

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[Turn over

(b) People now tend to buy laptops rather than desktop computers. Despite this, desktop computers are still fairly popular.

Describe **three** advantages of using a desktop computer rather than a laptop computer.

1 .....

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2 .....

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3 .....

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[3]

6 Describe the differences between the internet and an intranet.

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.....[4]

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7 A city hospital has decided to use emerging technology to automate its packaging and dispensing of medicines to patients. It has decided to use a robotic system which identifies the medicine using bar codes.

(a) Discuss the advantages and disadvantages to the hospital of using robots within this environment rather than using humans to carry out the task.

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.....[7]

(b) The system currently uses bar codes to read the data on the medicine packets as well as the shelf that the medicine packets are located on. The hospital is considering using embedded RFID chips in the packaging rather than bar codes.

Explain the advantages of using RFID chips in this scenario.

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.....[6]

8 Computers can be subject to hacking.

Explain what is meant by hacking and the effect it can have on the data or the computer.

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.....[2]

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9 A technician has told Moira that her computer might have a virus.

Describe **three** reasons why the technician might think this.

1 .....

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2 .....

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3 .....

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[3]

10 A new employee of a company is required to log on to the company's computer system and will need to create a suitable password.

(a) Give **three** rules that the company would have in place, to help the employee choose a password.

1 .....

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2 .....

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3 .....

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[3]

(b) He changes his password to R4hB5&Fg1

Explain why he has chosen this password.

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.....[3]

(c) When a password is changed it is verified.

Identify the type of verification which is carried out.

.....

.....[1]

11 You have created a spreadsheet to help your teacher to show progress in a series of tests.

	A	B	C	D
1	Student	Test mark	Progress	
2	A	10		
3				
4				

(a) Write a formula to be placed in cell C2 to produce the following:

"Making progress" if the mark is 75 or more
"Satisfactory" if the mark is 50 to 74 marks
"Needs improvement" if the mark is 0 to 49 marks

.....

.....[5]

(b) **(i)** Having created the formula, it needs to be tested to show that it displays the correct comment for each mark. Suggest an item of **test data** that would satisfy each of the following tests.

Each item of test data must be different.

Test data	**Expected output**	**Type of test**
	Making progress	Test using normal data
	Satisfactory	Test using normal data
	Needs improvement	Test using extreme data
	Satisfactory	Test using extreme data

[4]

(ii) Explain why testing is important.

.....

.....

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.....[2]

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(c) You are now asked to enter the marks for an additional 19 students into the spreadsheet and to produce a bar chart showing the student names and their test marks.

Describe how you would create the bar chart.

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.....[3]

12 Brian is creating a website for a sports club.

(a) Tick whether the following statements refer to the **behaviour** layer or the **content** layer or the **presentation** layer of this website.

	behaviour (✓)	**content (✓)**	**presentation (✓)**
To format whole web pages			
Consists of navigation pointers			
Defined by the CSS			
To enter scripting language to a web page			

[4]

(b) Define the following internet terms.

HTTPS .....

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URL .....

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[4]

13 For each of the statements below, identify the health problem most likely to be associated with them and a possible solution to the problem. Your answers should be different in each case.

	Health problem	**Possible solution**
Prolonged use of the keyboard		
Looking at a monitor for a long period of time		
Sitting too long in one position		

[6]

14 A library has a relational database consisting of two tables – one containing information about its books and the other containing information about borrowers. Below are two lists showing the field names for each table. A borrower can borrow several books at a time.

Book table

Book_ID
Book_title
Book_author
Year_published
Cost_of_book
Borrower_ID
Date_due_back

Borrowers table

Borrower_ID
Borrower_name
Telephone_contact
Borrower_address
Borrower_email

(a) Identify the primary key in the Book table.

.....[1]

(b) Identify the foreign key in the Book table.

.....[1]

(c) Identify the type of relationship that exists between the tables.

.....[1]

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(d) Describe **two** advantages of using a relational database rather than a flat file database.

1 .....

.....

2 .....

.....

[2]

(e) When the systems analyst was creating the new system she had to produce appropriate data types for each field.

Write down the most appropriate **data type** for each field.

Field name	Data type
Cost_of_book	
Borrower_name	
Telephone_contact	
Date_due_back	

[4]

15 Many people think there should be greater control of the use of the internet.

Describe the advantages and disadvantages of policing the internet.

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.....[5]

16 Discuss the benefits and drawbacks of using the cloud for storing data rather than other methods.

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.....[8]

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