

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

**INFORMATION TECHNOLOGY**

**0418/01**

Paper 1

Specimen Paper 2007

**2 Hours**

Candidates answer on the Question Paper.  
No additional materials are required.

**READ THESE INSTRUCTIONS FIRST**

Write in dark blue or black pen in the spaces provided on the Question Paper.  
You may use a soft pencil for any diagrams, graphs, music or rough working.  
Do not use staples, paper clips, highlighters, glue or correction fluid.

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.

SPECIMEN

This document consists of **16** printed pages.



1 Name the devices **A, B, C, D** and **E** using the words from the list.



**A**



**B**



**C**



**D**



**E**

**Bar Code Reader**

**CD Rom Drive**

**Digital Camera**

**DVD**

**Floppy Disk**

**Joystick**

**Keyboard**

**Memory Stick**

**Modem**

**Mouse**

**Touchpad**

**Trackerball**

A \_\_\_\_\_

B \_\_\_\_\_

C \_\_\_\_\_

D \_\_\_\_\_

E \_\_\_\_\_

[5]

2 Tick **true** or **false** next to each of these statements.

	True	False
A control program is used to produce a business letter		
Spreadsheets can be used to produce business accounts		
Using computers for long periods of time is good for your back		
Magnetic stripe readers are used for reading data from bank cheques		
CD ROMs hold more data than DVD ROMs		

[5]

3 Give **three** features of a graphical user interface.

Feature 1 \_\_\_\_\_

\_\_\_\_\_

Feature 2 \_\_\_\_\_

\_\_\_\_\_

Feature 3 \_\_\_\_\_

\_\_\_\_\_

[3]

4 Ring **two** items which are used to store data.

**Buzzer**

**CD ROM**

**Monitor**

**Mouse**

**Floppy disc**

**Scanner**

[2]

5 Complete each sentence below using **one** item from the list.

**bar code**

**DVD ROM**

**floppy disc**

**keyboard**

**magnetic stripe**

**magnetic tape**

**monitor**

**laser printer**

**zip disc**

(a) Data about the details of a tin of beans is stored on the tin using a \_\_\_\_\_

(b) Data about a bank account is stored on a credit card on a \_\_\_\_\_

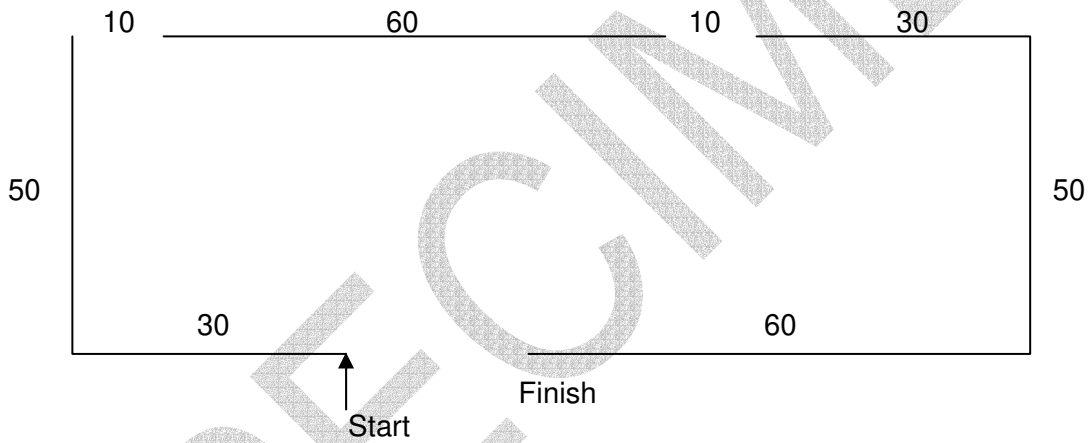
(c) A full system backup of 40GB would be made using a \_\_\_\_\_

(d) High quality permanent output can be produced using a \_\_\_\_\_

[4]

6 A floor turtle can use the following instructions:

INSTRUCTION	MEANING
FORWARD $n$	Move $n$ mm forward
BACKWARD $n$	Move $n$ mm backward
LEFT $t$	Turn left $t$ degrees
RIGHT $t$	Turn right $t$ degrees
PENUP	Lift the pen
PENDOWN	Lower the pen
REPEAT $n$	Repeat the following instructions $n$ times
END REPEAT	Finish the REPEAT loop



Complete the set of instructions to draw these shapes by filling in the blank lines.

PEN DOWN		
LEFT 90		
FORWARD 30		

[5]

7 RAM and ROM are types of storage.

(a) Describe what is meant by RAM and ROM.

1 RAM \_\_\_\_\_

\_\_\_\_\_ [2]

2 ROM \_\_\_\_\_

\_\_\_\_\_ [2]

(b) Give **one** way a computer uses RAM.

\_\_\_\_\_

\_\_\_\_\_ [1]

8 Michael wishes to make a copy of his Geography coursework which is stored on the school computer system. He wants to take it home to finish it for homework.

He can borrow a CD RW from school but he has a 128 Mb memory stick of his own.

(a) Give **two** advantages of using the CD RW.

1 \_\_\_\_\_

\_\_\_\_\_

2 \_\_\_\_\_

\_\_\_\_\_ [2]

(b) Give **two** advantages of using the memory stick.

1 \_\_\_\_\_

\_\_\_\_\_

2 \_\_\_\_\_

\_\_\_\_\_ [2]

9 Complete the following sentences using the output devices listed below.

**Graph plotter**

**Laser printer**

**Dot matrix printer**

(a) A garage using multi-part stationery with carbon copies would need a

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(b) An architect's office producing house plans using A0 size paper would use a

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(c) A student printing out coursework needing high quality printouts would use a

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[3]

10 A manager of the head office of a large company has decided to spend money on linking all its computers into an intranet.

(a) What is an intranet and what would be the benefits to the head office of having one?

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[3]

(b) The manager would like her workers to have access to the Internet. She is told that she will need a modem. What does a modem do and why is it needed?

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[3]

(c) Give **two** items the workers will need to type into a computer in order to log on to the network.

1 \_\_\_\_\_

\_\_\_\_\_

2 \_\_\_\_\_

\_\_\_\_\_

[2]

(d) The benefit of being connected to the Internet is that information can be sent from head office to the different branches. Some of this information will need to be encrypted.

1. What is meant by encryption?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

[2]

2. Explain why encryption is needed.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

[2]

SPECIMEN

- 11 A company has asked a customer to sign and send a confidential document immediately. The customer decides not to use post but can't decide whether to send the document by fax or email attachment.

(a) Give **one** advantage of using a fax.

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[1]

(b) Give **two** disadvantages of using a fax.

1 

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2 

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[2]

- 12 The manager of a car showroom uses a database to store data about cars he sells. This is part of the database.

Make	Model	Size of engine	Registration	Price (€)
Opel	Vectra	1.8	VSE 648	19000
Opel	Zafira	2.0	BFK 297	29000
Volkswagen	Golf	1.4	SB A5526	15000
Volkswagen	Polo	1.2	DD B4978	11000
Volkswagen	Jetta	1.6	B G8347	19000
Renault	Megane	1.4	1233 CD 33	17000
Renault	Clio	1.2	6289 XF 54	11000

(a) How many records are there in this part of the database?

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[1]

(b) How many fields are there in this part of the database?

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[1]

(c) The records shown are to be sorted in descending order of size of engine. What will be the registration of the first record in the database after it has been sorted?

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[1]



(d) Give the name of a field that contains numeric data.

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[1]

(e) Identify the field type of the 'model' field.

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[1]

(f) Which field would be the key field?

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[1]

13 Many hackers have tried to infect other people's computers with viruses.

(a) Describe what is meant by hacking.

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[2]

(b) Describe what is meant by a virus.

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[2]

(c) Describe how viruses can be prevented.

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[2]

- 14 Put a tick in the column which best describes the type of processing used in the following applications.

	On-line	Batch	Real time
Robots on a car assembly line			
Producing credit card bills.			
Booking a cinema seat using a computerised booking system.			
Launching a rocket to the moon			

[4]

SPECIMEN

15 A systems analyst has been asked by a doctor to computerise the records she keeps about her patients. He must first of all collect information about the existing system.

(a) Name **three** methods he could use to collect this information.

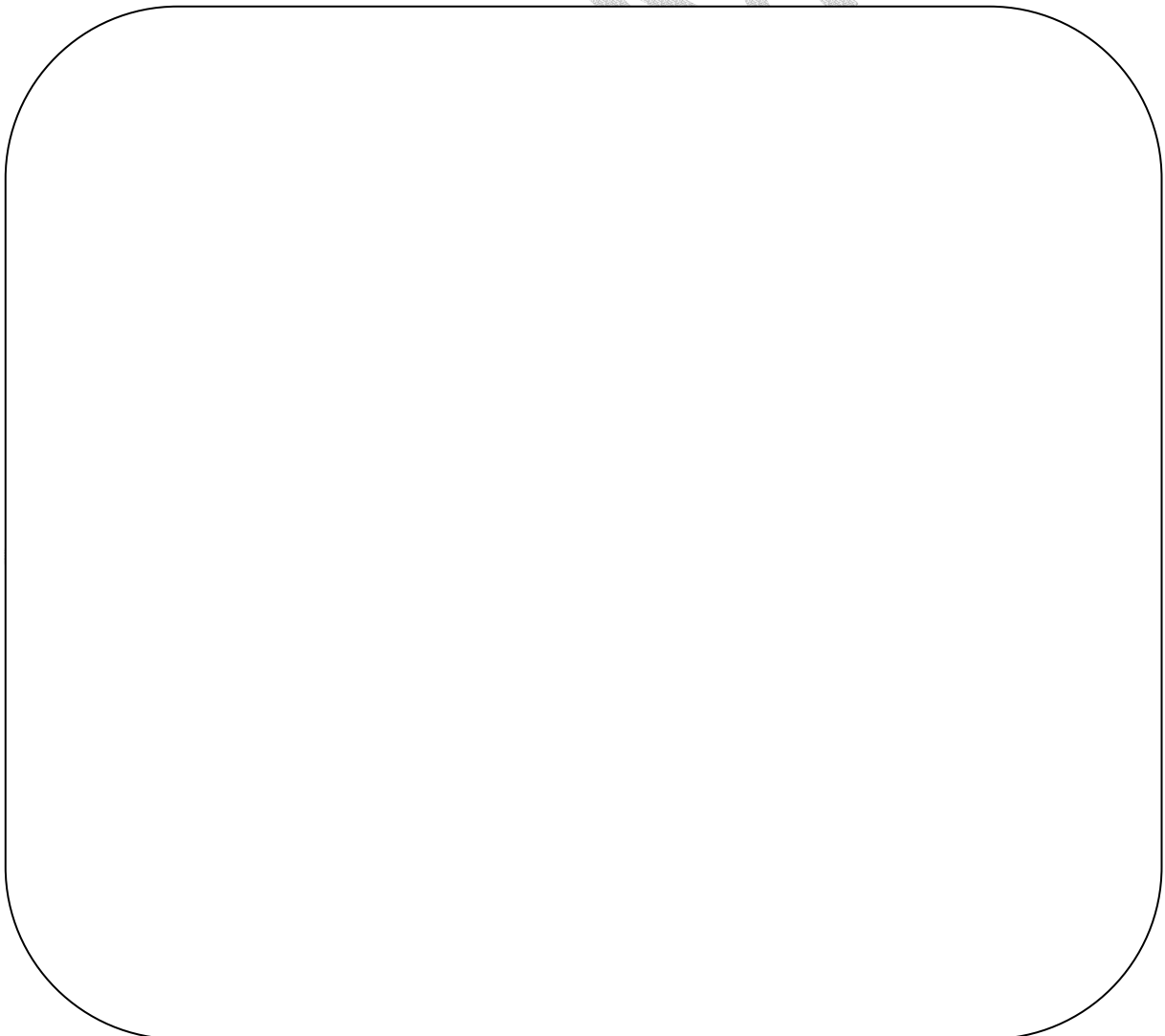
1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

[3]

(b) Having collected this information the systems analyst must now produce a screen input form which the doctor's assistant could use for typing in each patient's details. Design a suitable screen input form for inputting the details of **one** patient.



[5]

- (c) After the assistant has typed in the data it will need to be verified. Describe **two** methods of verifying data.

1 \_\_\_\_\_

\_\_\_\_\_

2 \_\_\_\_\_

\_\_\_\_\_

[2]

- (d) This data needs to be stored in a database. Describe **three** features of the structure of the database that the systems analyst will need to design.

1 \_\_\_\_\_

\_\_\_\_\_

2 \_\_\_\_\_

\_\_\_\_\_

3 \_\_\_\_\_

\_\_\_\_\_

[3]

- (e) Once the whole system has been designed it will need to be implemented. Describe **two** methods of implementation.

1 \_\_\_\_\_

\_\_\_\_\_

2 \_\_\_\_\_

\_\_\_\_\_

[2]

- (f) Write down **two** reasons why one of the methods you gave in (e) is better than the other.

1 \_\_\_\_\_

\_\_\_\_\_

2 \_\_\_\_\_

\_\_\_\_\_

[2]

(g) After a system is implemented, it is evaluated. Give **two** reasons why a system should be evaluated.

1 \_\_\_\_\_  
 \_\_\_\_\_

2 \_\_\_\_\_  
 \_\_\_\_\_

[2]

16 Workers in a car factory are paid weekly. Their pay is calculated by multiplying the number of hours worked by the rate of pay. Tax is then deducted. Below is **one** record from the transaction file which tells the computer the worker's payroll number and how many hours they have worked.

Payroll number	Hours worked
432175	42

Here is part of the master file.

Payroll number	Name	Rate per hour (€)	Tax rate
361453	Me Te Loan	18.50	27%
295685	Mohammed Ali	15.35	27%
198564	Alan Smith	17.35	27%
432175	Jaswinder Dhillon	17.35	27%
671235	Francois Millard	16.85	27%

(a) Using these examples, describe the computer processing which will take place in order to produce this worker's payslip.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

[5]

(b) Before the transaction file is processed the data must be validated. Name and describe a suitable validation check for the:

1 Payroll number \_\_\_\_\_

2 Hours worked \_\_\_\_\_

[4]

(c) The processing of the transaction file involves reading one record at a time. What type of access is this called?

[1]

(d) Certain types of processing of the master file involves accessing individual records quickly.

1. Which would be the most suitable magnetic medium for storing the master file?

[1]

2. What type of access is this called?

[1]

(e) The workers also have personal information stored about them on a computer database. Give examples of when the company would need to:

1 amend a record \_\_\_\_\_

2 insert a record \_\_\_\_\_

3 delete a record \_\_\_\_\_

[3]

17 A burglar alarm system is used to detect when a burglar has entered a house. Name **two** sensors which could be used to detect the burglar's presence. For each one say how it is used to do this.

1 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

[2]

2 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

[2]

18 Environmentalists plan to test a fast flowing river for pollution. Give **three** advantages of using a computer to do this rather than doing it manually.

1 \_\_\_\_\_  
\_\_\_\_\_

2 \_\_\_\_\_  
\_\_\_\_\_

3 \_\_\_\_\_  
\_\_\_\_\_

[3]

19 Expert systems are used in mineral exploration.

(a) Name **two** other uses of expert systems.

1 \_\_\_\_\_  
\_\_\_\_\_

2 \_\_\_\_\_  
\_\_\_\_\_

[2]

