| Paper Reference |
| **4 3 8 5 / 1 F** |

Paper Reference(s)

4385/1F

London Examinations IGCSE

Information and Communication Technology

Paper 1F

Foundation Tier

Monday 12 May 2008 – Morning

Time: 1 hour 30 minutes

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
Do not use pencil. Use blue or black ink.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 12 questions in this question paper. The total mark for this paper is 100.
There are 16 pages in this question paper. Any blank pages are indicated.

Advice to Candidates

You are reminded of the importance of clear English and careful presentation in your answers.
Include diagrams in your answers where these are helpful.

Turn over

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Answer ALL the questions

1. The following images are of input or output devices.

A

B

C

D

Complete the table below for each device. The first one has been done for you.

	Name	Input	Output	Function
A	Scanner	✔		To copy documents into a computer
B				
C				
D				

(Total 9 marks)

Q1

H 3 0 3 4 0 A 0 2 1 6

2. Teachers in a college use mark sheets to enter students' marks. An input device reads the mark sheets. Part of the mark sheet is shown:

0213 4001 Singh Gurjit	46	[0] [10] [20] [30] [40] [50] [60] [70] [80] [90] [100] [0] [1] [2] [3] [4] [5] [6] [7] [8] [9]
0213 4002 Harding Mark	53	[0] [10] [20] [30] [40] [50] [60] [70] [80] [90] [100] [0] [1] [2] [3] [4] [5] [6] [7] [8] [9]
0213 4003 Miah Nia	82	[0] [10] [20] [30] [40] [50] [60] [70] [80] [90] [100] [0] [1] [2] [3] [4] [5] [6] [7] [8] [9]

(a) State a device suitable for reading the mark sheets directly into the computer.

Device ....

(1)

(b) Give **two** reasons why each mark is entered twice on the mark sheet by the teacher.

Reason 1 ....

....

Reason 2 ....

....

(2)

(c) Give **two** reasons why the college uses this method of data entry in preference to a keyboard input.

Reason 1 ....

....

Reason 2 ....

....

(2)

Q2

(Total 5 marks)

3. Five doctors work together in a hospital department.

The department has five separate consulting rooms and a reception area all in one building.

There is a computer in each consulting room and one for the receptionist in the reception area.

The computers are networked but they do not have access to the Internet.

(a) State the term used to describe this type of network.

....

(1)

(b) The doctors use the computers to look at patients' records. The receptionist uses the computer to make appointments.

For this application describe **three** benefits of having a networked system rather than standalone computers.

Benefit 1 ....

Benefit 2 ....

Benefit 3 ....

(3)

(c) Bus and Star are types of network topology.

This table lists some features of these topologies.

Complete the table by ticking the boxes to show which feature matches which topology.

Feature	Bus	Star
A break in the network stops all computers		
All computers can be linked directly to the server or a hub		
It is expensive because more cable is used		

(3)

(Total 7 marks)

Q3

4. Students who enjoy playing computer games often download demonstration versions from the World Wide Web.

After one such download a student's computer starts to produce error messages and several important files are deleted. The computer has a virus.

(a) Explain what a computer virus is.

....

....

....

(2)

(b) Suggest how the virus might have infected the student's computer system.

....

....

....

(2)

(c) (i) State how the student can remove this virus.

....

(1)

(ii) Explain how the student can prevent further viruses entering the system.

....

....

....

(2)

(Total 7 marks)

Q4

5. A mail order company uses a database to record details of its customers. The table shows part of this information:

Customer ID	Surname	Forename	Address	Postcode
0120	Singh	Gurjit	5 Belgrave Road	SA4 2RD
1135	Williams	Anne	7 Belgrave Road	SA4 2RD
0890	Evans	Glyn	190 High Holborn	W1CV 7ED
1078	Jones	Peter	9 Blundell Street	W7 9JK
0898	Miah	Mamun	32 Russell Square	W1GH 3TY
0139	Kahn	Imogen	1 Hales Road	BR51 9QR

(a) Identify the key field and give a reason for its use.

Key field ....

Reason ....

....

(2)

(b) A format check is made when postcodes are entered.
Explain why this check is made.

....

....

(2)

(c) The mail order company must keep customers' details secure.

Explain how the following methods help the company to keep the data secure.

Encryption ....

....

Firewalls ....

....

Passwords ....

....

(6)

(Total 10 marks)

6. Students must enter the correct User ID and a password to access their college computer network. If after three attempts the information is not entered correctly, the student's network account is locked. The following diagram shows an incomplete flowchart for this system.

(a) The missing steps are listed below but are not in the correct order.
Write the letters A to E into the correct boxes to complete the flowchart.

Steps
A. Account locked
B. Enter password
C. Set counter to 1
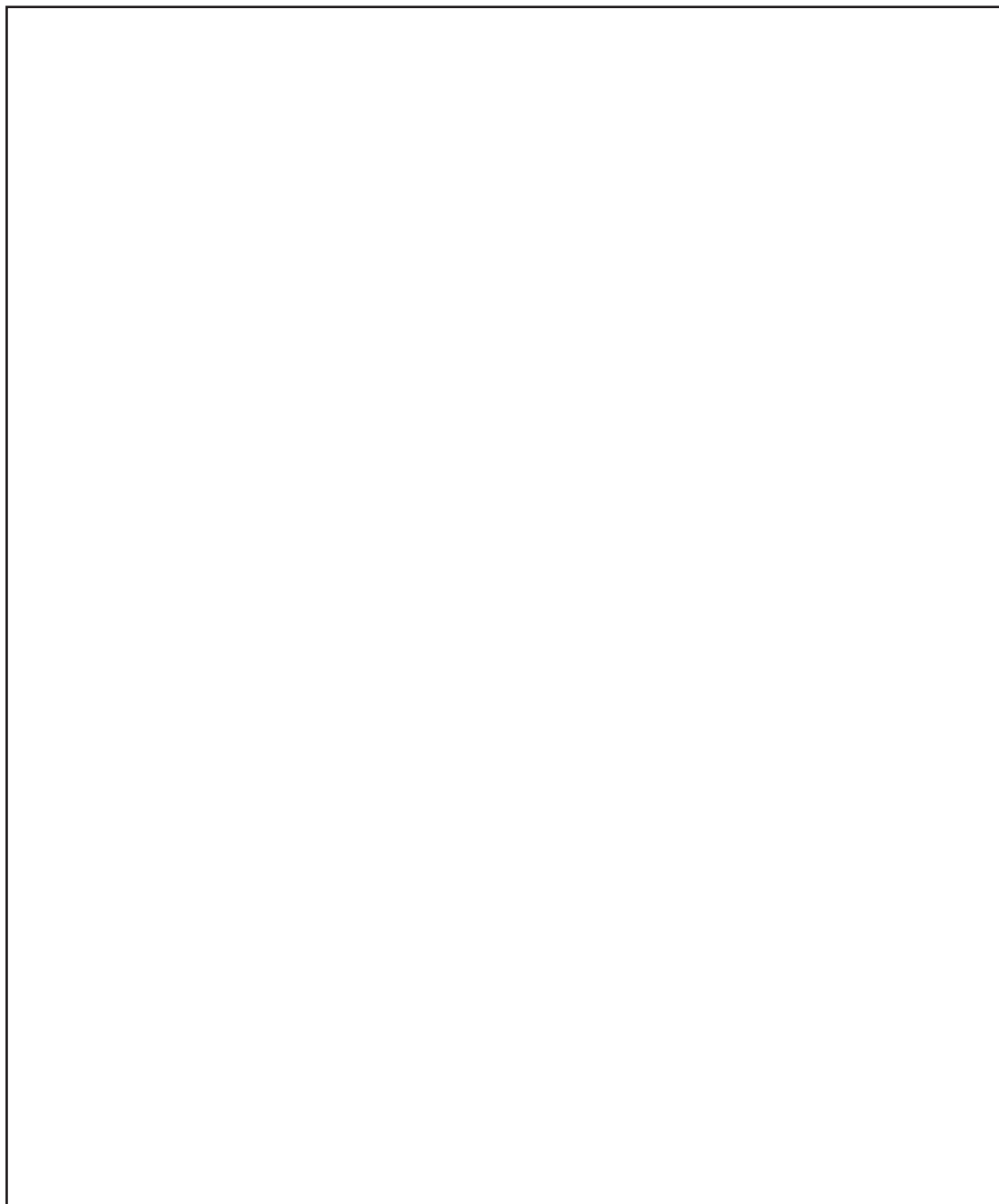D. Enter User ID
E. Access granted

(5)

Turn over
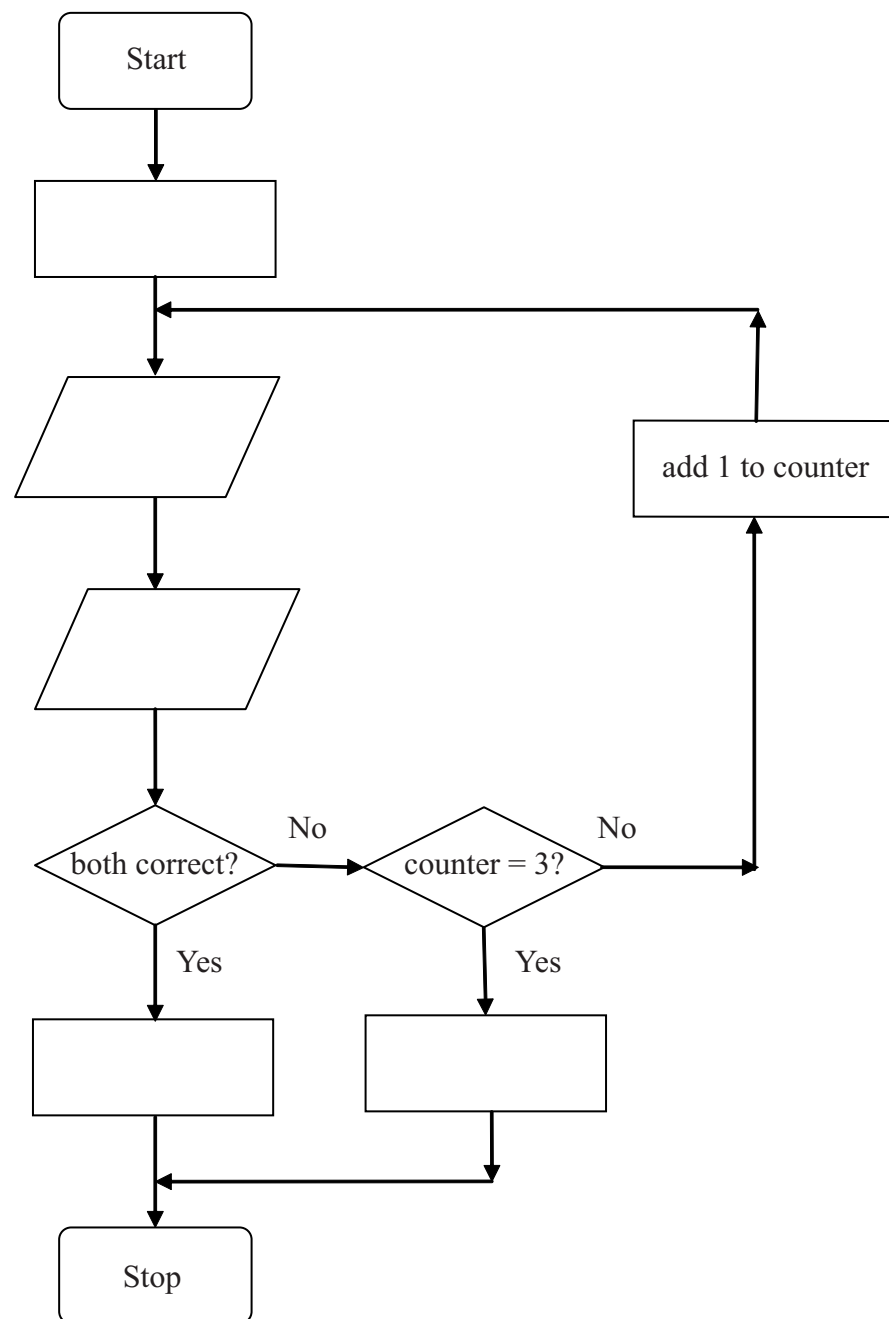
(b) Students' details are entered into the computer system by data entry staff. Some of the information entered is:

- Student name
- Date of birth
- Student address
- Contact details
- Credit card details
- Course to be taken

In the box below, design a suitable screen for a data capture form that the staff could use to enter this data. Your design should include features that make data entry easier for the staff.

(4)

(c) Give an example of typical, extreme, and invalid data to test the date of birth entry on your form.

Typical ....

Extreme ....

Invalid ....

(3)

(Total 12 marks)

7. An operating system is a program that controls the operation of the computer. One task performed by an operating system is to allocate system resources such as memory and CPU time.

Give **three** other tasks performed by the operating system. Support your answer with an example in each case.

Task 1 ....

Example ....

....

Task 2 ....

Example ....

....

Task 3 ....

Example ....

....

(Total 6 marks)

8. A manager of an insurance company wants to update the computer system. The manager employs a systems analyst to manage the introduction of the new system.

(a) Give **two** reasons why the computer system might need updating.

Reason 1 ....

Reason 2 ....

(2)

(b) The analyst decides to identify the problems with the current system. One method is an interview.

Give **two** other methods the analyst could use to identify the problems at this stage.

Method 1 ....

Method 2 ....

(2)

(c) The analyst produces a **user's guide** for the new system.
Give **two** pieces of information that should be included in the user's guide.

1 ....

2 ....

(2)

(d) The analyst produces a **technical guide** for the new system.
Give **two** pieces of information that should be included in the technical guide.

1 ....

2 ....

(2)

(e) The analyst decides to run the new system in parallel with the old system for one month.

Explain why the analyst decides to run the systems in this way.

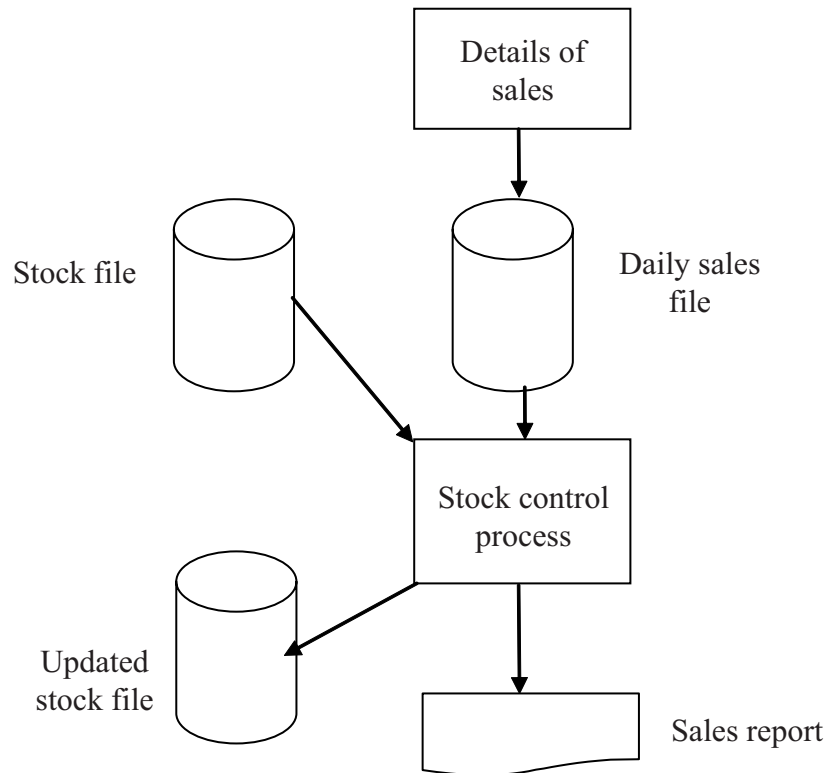...

....

....

....

(2)

Q8

(Total 10 marks)

9. The diagram shows a possible supermarket stock control system.

In the diagram above, the daily sales file is the **transaction file**, and the stock file is the **master file**.

(a) State what is meant by:

(i) Transaction File ....

....

(1)

(ii) Master File ....

....

(1)

(b) Show on the diagram how a backup file could be added to this system.

(2)

(c) Explain, with reference to the stock file, how the management of the supermarket would make sure it does not run out of stock.

....

....

....

(3)

(Total 7 marks)

Turn over

10. 'Toys with Chips' is a shop that sells a range of microprocessor-controlled toys. The shop owner has decided to create a web site that allows customers to buy these toys on-line.

(a) Other than a computer, state **two** items of software or hardware that 'Toys with Chips' must have to allow connection to the Internet.

Item 1 ....

Item 2 ....

(2)

(b) Describe how 'Toys with Chips' would benefit from this web site.

....

....

....

(3)

(c) Give **two** disadvantages to customers of using the web site to purchase goods.

Disadvantage 1 ....

....

Disadvantage 2 ....

....

(2)

(d) The shop owner is concerned about credit card fraud when customers buy toys on-line.

Describe the steps that the shop owner can take to reduce the risk of fraud.

....

....

....

(3)

(e) Give **three** features of web sites that allow easy navigation.

Feature 1 ....

Feature 2 ....

Feature 3 ....

(3)

(Total 13 marks)

Q10

11. Residents of a small village are worried about the amount of traffic passing through their village at certain times of the day and night.

The council decides to count the number of vehicles passing through the village.

(a) The council uses a computer data logging system for this purpose.

One benefit of this data logging system is that it can operate 24 hours a day, 7 days a week, without stopping.

Describe **three** other benefits of this data logging system.

Benefit 1 ....

....

Benefit 2 ....

....

Benefit 3 ....

....

(3)

(b) Data collected is stored in a computer file. One field in the record is the time the vehicle is detected.

Explain why it is necessary to record the time when a vehicle is detected.

....

....

(2)

(c) (i) The council wishes to produce graphs or charts to analyse the data collected.

State the type of software package that could be used to analyse the data in this way.

....

(1)

(ii) Give **one** feature, other than graphs or charts, that this software provides for the analyst.

....

(1)

(d) (i) Suggest a sensor that could be used to detect vehicles.

....
(1)

(ii) State how the system obtains the time that the vehicle is detected.

....
(1)   **Q11**

(Total 9 marks)

12. In a college, each student submits **one** project and takes **one** examination.

The results are one of:

- Pass
- Fail
- Borderline.

The following algorithm is used to give a result for a student

1   input project-mark
2   input exam-mark
3   if (project-mark $\geqslant$ 40 and exam-mark $\geqslant$ 40) then result = "Pass"
4   Else if (project-mark < 20 or exam-mark < 20) then result = "Fail"
5   Else result = "Borderline"

Complete the table to show the result in each case.

Project Mark	Exam Mark	Result (Pass/Fail/Borderline)
50	45	
70	18	
38	38	
15	19	
38	50	

Q12

(Total 5 marks)

TOTAL FOR PAPER: 100 MARKS

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