Centre No.						Paper Reference							Surname	Initial(s)
Candidate No.						4	3	8	5	/	1	F	Signature	

Paper Reference(s)

4385/1F

Examiner's use only

Team Leader's use only

London Examinations IGCSE

Information and Communication Technology

Paper 1F

Foundation Tier

Monday 21 June 2010 – Morning

Time: 1 hour 30 minutes

Materials required for examination
Nil

Items included with question papers
Nil

Question Number	Leave Blank
1	
2	
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4	
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7	
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9	
10	
11	
Total	

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initial(s) 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 11 questions in this question paper. The total mark for this paper is 100.
There are 20 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.

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Answer ALL questions

1. (a) Software may be used to perform validation checks.

Match each of these validation checks with its description by drawing a line to connect them. The first one has been done for you.

Validation check	Description
Type check	Rejects data items with more than a set number of characters
Format check	Rejects data items where the data type is not the same as a set type
Length check	Rejects data items that do not match a particular pattern
Check digit	Rejects data items that have been left blank
Presence check	Rejects data items where a calculation using the data does not give the final digit of the data as a result
Range check	Rejects data items that are larger or smaller than set values

(5)

(b) When a person checks data to see that it is correct this is called verification.
State **one** method of verification.

.....

(1)

Q1

(Total 6 marks)

Leave blank

2. Table 1 shows seven types of software, labelled A to G.

Table 1

Type of software	Letter
Database	A
Spreadsheet	B
Word processor	C
Desk top publisher	D
Web site writer	E
Art package	F
Multi-media presentation package	G

Table 2 shows seven tasks that may be performed by using the software in Table 1. Match each task with the most appropriate type of software by writing the letter of the software in Table 2. Each letter should only be used once.

The first one has been done for you.

Table 2

Task	Letter
Advertise a computer game using text, graphics, sound and video	G
Store and search the personal details of all the students in a school	
Make a brochure to advertise a new housing development	
Repair damage on an old photograph	
Calculate pay and print pay slips	
Produce a template for a business letter	
Create an interactive screen to let people send messages to each other	

Q2

(Total 6 marks)

Leave blank

3. Oliver owns a business that supplies paper to offices. He uses a database to help him to keep track of his stock. The table shows part of the database.

Product name	Product code	Paper weight	Price	Paper quality	Recommended use
President white A4	PRW412	120 gsm	£27.99	premium	laser, inkjet
Executive white A4	EXW410	100 gsm	£23.99	premium	inkjet, copier
Sovereign white A4	SOW409	90 gsm	£15.99	standard	laser, inkjet, copier
Imperial white A4	IMW408	80 gsm	£12.99	standard	inkjet, copier
Embassy white A4	EMW408	80 gsm	£6.99	budget	inkjet, copier
Embassy green A4	EMG408	80 gsm	£7.99	budget	inkjet, copier

(a) State which **one** of the following three fields, Product name, Product code, and Price would be the best to use as a key field. Explain why it is the most suitable one to use.

Key field .....

Explanation .....

.....

(3)

(b) Database tables may be changed by adding, deleting or amending a record. Give an example of when Oliver would need to:

Add a record .....

.....

Delete a record.....

.....

Amend a record .....

.....

(3)

(c) Complete the table below to show the data types and field lengths that would be most suitable for the Product name, Product code, and Price fields.

Field name	Data type	Field length
Product name		
Product code		
Price		

(6)

Q3

(Total 12 marks)

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4. Lyndy's Lunches sells meals to companies. Workers can choose a meal from one of six menus and companies place orders during the morning. Lyndy's Lunches prepares and delivers the meals by lunchtime.
Lyndy uses a spreadsheet to record the orders. Each company has an account number.
This is today's page of the spreadsheet.

	A	B	C	D	E	F	G	H
1		Meals ordered today						
2	Account No.	Menu 1	Menu 2	Menu 3	Menu 4	Menu 5	Menu 6	
3	BC0109	2	2	5	4	1	5	
4	TW0045	1	5	2	4	3	7	
5	BA2231	2	3	6	3	3	6	
6	SW0025	3	3	5	6	2	7	
7	ED1107	2	4	4	4	2	5	
8	AD0224	3	7	8	5	3	9	
9								
10	Total meals ordered from each menu	13	24	30	26	14	39	
11	Profit on each meal	£2.60	£2.16	£2.26	£2.10	£2.65	£2.30	Total profit
12	Total profit per menu	£33.80	£51.84	£67.80	£54.60	£37.10	£89.70	£334.84

Each cell is named by a column letter and a row number. For example, the cell named A2 contains the words Account No.

Each cell in the spreadsheet is formatted as text or number or currency and may also contain a formula or a function.

(a) Name a cell that contains a formula. .....
(1)

(b) Name a cell that contains a function .....
(1)

(c) State the format of the following cells.

cell B6 .....

cell C11 .....

cell E2 .....
(3)

Leave blank

(d) The spreadsheet tells Lyndy the total meals ordered from each menu.
Lyndy wants the spreadsheet to tell her which menu has the most orders.
Lyndy puts a function in cell H9 to show the answer.

(i) Give the name of the function that she should use in cell H9 .....
(1)

(ii) State which cell or cells the function in cell H9 should use. .....
(1)

(e) Lyndy is given two more lunch orders. There are not enough empty rows in the spreadsheet to enter the orders. Describe what Lyndy must do to make the extra space, while keeping the functions and formulae correct.

.....

.....

.....
(3)

Q4

(Total 10 marks)

Leave blank

5. (a) (i) State what is meant by a bit.

.....

(1)

(ii) State what is meant by a byte.

.....

(1)

(b) A hard drive can store recorded television programmes. Each recorded programme is given a number. The number is held in a single byte of storage.

State the highest value of this number.

Highest value .....

(1)

(c) The hard drive uses 500 kilobytes of storage for each second of recording.
State what is meant by a kilobyte.

.....

(1)

(d) Data on the hard drive is compressed.

(i) State what is meant by the term compressed.

.....

(1)

(ii) One type of compressed file is a zip file. Name a different type of compressed file that could be used.

.....

(1) **Q5**

(Total 6 marks)

BLANK PAGE

Leave blank

6. An employment agency uses a local area network (LAN) in its head office building. The LAN uses cables to connect 10 computers and a server.

(a) State **two** other items of hardware which will be needed to connect these computers to the server.

Item 1 .....

Item 2 .....

(2)

(b) The agency has offices in other towns. These are connected by a wide area network (WAN). A WAN covers a greater area than a LAN. Describe **one** other difference between a LAN and a WAN.

.....

.....

(2)

(c) Each of the agency's offices has its own LAN with three PCs and a networked printer. A new office is to be set up. The agency's manager thinks that money can be saved by installing stand-alone computers instead of a LAN.

(i) Give **two** reasons why the cost of installing stand-alone computers would be **lower** than that of installing a LAN.

Reason 1 .....

Reason 2 .....

(2)

(ii) Give **two** reasons why the cost of running stand-alone computers would be **higher** than that of running a LAN.

Reason 1 .....

Reason 2 .....

(2)

Leave blank

(d) The agency's manager is also concerned about security.

(i) Give **one** security advantage of a stand-alone computer compared with a networked computer.

.....

.....

(1)

(ii) Give **one** security advantage of a networked computer compared with a stand-alone computer.

.....

.....

(1)

Q6

(Total 10 marks)

Leave blank

7. The 'Electric Music Company' sells music downloads over the Internet. People who wish to purchase a music download must first complete an on-line registration form.

The form contains input fields for:

- the person's identity and email address
- details about the method of payment to be used
- the person to give a password for the account
- the person to repeat the password to confirm it.

(a) Use the box to design a suitable on-line form for this application.

(8)

(b) (i) Explain why the person must give a password.

.....

(1)

(ii) Explain why the person must confirm the password.

.....

(1)

Q7

(Total 10 marks)

Leave blank

8. Mr Brown wants to have a broadband Internet connection and home network in his house. He has a choice of three methods of connection:

- copper cable
- fibre-optic cable
- WiFi.

(a) State which of these:

(i) has the greatest bandwidth.

.....

(1)

(ii) is least prone to interference.

.....

(1)

(iii) will be the easiest to adapt when expanding the home network at a later date.

.....

(1)

(b) Mr Brown's Internet Service Provider (ISP) gives him a free email account and 5 gigabytes of web storage space.

State **three** other services that the ISP is likely to provide for Mr Brown.

Service 1 .....

Service 2 .....

Service 3 .....

(3)

(c) Mr Brown signed up for a fibre-optic connection. His ISP gave him a simple modem which converts between electrical and optical signals. The ISP has said that Mr Brown will have to purchase a router if he wants to connect more than one computer to the modem.

A router allows two or more computers to connect to the Internet at the same time.

Describe **one** other function of a router.

.....

.....

.....

(2)

Q8

(Total 8 marks)

Leave blank

9. An insurance company keeps the records of 100,000 customers in a database. You are the company's database manager and responsible for backup and security.

(a) You need to plan a new backup system for the database. You should consider several factors when creating the plan.

The table shows the storage requirement and how you take account of it. Complete the table to show **three** other factors that you should consider and state how you would take account of them.

Factor	How you take account of the factor
Storage requirement	If each customer entry uses 1 Kb of storage space, 100,000 customers will need about 100 Mb of space.

(6)

(b) The customer records are confidential.

(i) Describe **two** methods for preventing unauthorised employees from viewing customer information.

Method 1.....

.....

Method 2.....

.....

(4)

Leave blank

(ii) Describe **one** method of preventing unauthorised people from viewing customer information via the company's Internet connection.

.....

.....

.....

.....

(2)

Q9

(Total 12 marks)

Leave blank

10. A researcher for a TV quiz show needs to compile a set of questions about 1960's British pop music. She puts

1960's music

into a search engine which returns over two million responses.

(a) Explain **three** methods by which the researcher could refine her search to produce fewer and more relevant responses.

Method 1 .....

.....

Method 2 .....

.....

Method 3 .....

.....

(6)

(b) The researcher also looks at a music wiki, where anyone may write articles about music and display them on a specialist web site.

(i) State **two** other sources of on-line information that the researcher could use.

Source 1 .....

Source 2 .....

(2)

(ii) Explain why the researcher should be cautious about the information she finds in the music wiki.

.....

.....

.....

.....

(2)

Q10

(Total 10 marks)

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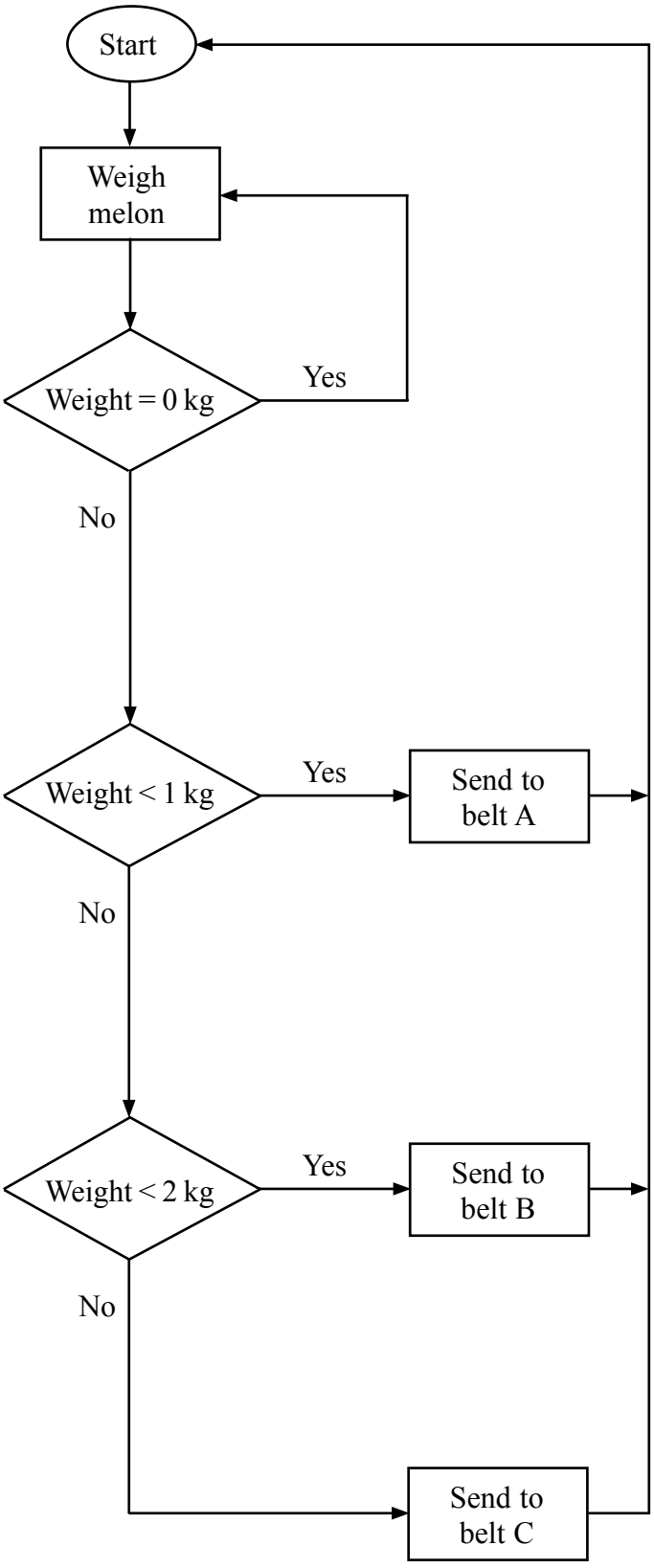
11. The flowchart shows part of a control program that operates a machine that weighs melons. The melons pass over a weight sensor and are sent to one of three conveyer belts, depending on their weight.



Leave blank

The system needs to be tested. Known weights can be placed on the weight sensor to see which belt they will be sent to. The system will be tested with five weights, representing typical and extreme data.

(a) State, with reasons, which five weights you would use for this purpose.

Weight 1 .....

Weight 2 .....

Weight 3 .....

Weight 4 .....

Weight 5 .....

(5)

(b) Explain why the use of invalid test data would not be appropriate for this application.

.....

.....

.....

.....

(2)

(c) The machine may be stopped in an emergency by pulling a lever. This causes the weight sensor to register a weight of more than 10 kg.

Insert additional lines, words, and symbols to amend the flowchart to show the emergency stop system.

(3)

Q11

(Total 10 marks)

TOTAL FOR PAPER: 100 MARKS

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