Centre No.						Surname	Initial(s)
Candidate No.						Signature	

Paper Reference(s)

4385/2H

Examiner's use only

Team Leader's use only

London Examinations IGCSE

Information and Communication Technology

Paper 2H

Higher Tier

Friday 11 November 2005 – Morning

Time: 1 hour 30 minutes

Materials required for examination
Nil

Items included with question papers
Nil

Question Number	Leave Blank
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
Total	

Instructions to Candidates

In the boxes above, write your centre number and candidate number, your surname, initial(s) and signature.
The paper reference is shown at the top of this page. Check that you have the correct question paper.
Answer **ALL** the questions in the spaces provided in this question paper.

Information for Candidates

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

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 student makes a website for a school chess club. The site has several pages of text and pictures, joined by hyperlinks. There are no interactive features such as forms or searches.

(a) The student wishes to test the site before it is published. State **three** tests for the site. Give a reason for each test.

Test 1 .....

Reason .....

Test 2 .....

Reason .....

Test 3 .....

Reason .....

(6)

(b) After the site has been published, the student wishes to monitor and evaluate its performance. Briefly describe **two** features which the student could add to the site that would help to monitor or evaluate it.

Feature 1 .....

.....

Feature 2 .....

.....

(4)

(Total 10 marks)

Q1

Leave blank

2. (a) A taxi company uses a database to hold details of its drivers and vehicles. Complete the following table about some of the fields within a driver's record. The first one has been done for you.

Field name	Example data	Type	Size	Reason
Driver I.D.	24	Numeric	2	Example data shows a number and there are unlikely to be more than 99 drivers.
Vehicle colour	BLK			
Next service date for the vehicle	241205			
Telephone number for the driver	0207 758 5656			

(9)

(b) When data is entered into the database, it is validated by software.
Choose two fields from the table above. For each field, name a validation technique which would be suitable and describe how the named validation would work.

Choice 1

Field name .....

Validation technique .....

Description .....

Choice 2

Field name .....

Validation technique .....

Description .....

(4)

(Total 13 marks)

Q2

Leave blank

3. A mail order company receives customers' orders written on printed slips. An example is shown in the diagram.

Customer name Mr. J. Smith			Customer reference number JS3216		
Item description	Item code	Quantity	Office use only		
			Date in	In stock	Checked
C D Storage Rack	TF6651	1			
Shelf unit	HU7217	2			
Keyboard cover	TK5350	1			

(a) The slips are batch processed daily. Explain the term **batch processing**.

.....

.....

(2)

(b) Instead of batch processing, transaction processing could be used. Give **one** advantage to the company of using transaction processing rather than batch processing.

.....

(1)

(c) The item code is used instead of the item description when processing the order. Give **three** reasons why this is beneficial to the company.

Reason 1 .....

Reason 2 .....

Reason 3 .....

(3)

(d) The data on the slip is entered by a data entry clerk. A second clerk checks the entry and, if it is correct, signs the "Checked" column on the slip. State the name of this process and give the reason why the company requires it.

Name .....

Reason .....

(2)

Q3

(Total 8 marks)

Leave blank

4. (a) A computer manufacturing company has a website which offers a wide range of services to its customers. Two of these services are

- the facility to obtain information about products
- the facility to purchase a product on-line.

State **two** other services which the company website could offer. For each service, state **one** advantage for the company and **one** advantage for its customers.

Service 1 .....

Advantage to company .....

Advantage to customers .....

Service 2 .....

Advantage to company .....

Advantage to customers .....

(6)

(b) The company joins a web ring. State the function of a web ring and give **one** advantage of it for the company and **one** advantage for the customers.

Function .....

Advantage to company .....

Advantage to customers .....

(3)

Q4

(Total 9 marks)

Leave blank

5. A town council wishes to improve traffic flow through a town. The planners run computer simulations of the proposed improvements and report the results to the council.

(a) Explain what is meant by a computer simulation.

.....

.....

(2)

(b) State **three** benefits to the town of running the simulations.

Benefit 1 .....

Benefit 2 .....

Benefit 3 .....

(3)

(c) State **one** limitation of the simulations.

.....

(1)

(d) The results of the simulations must be presented to the town council before further development takes place. The report must present cost and traffic flow predictions. Describe a suitable method of presenting this type of information. Justify your answer.

.....

.....

(2)

(e) The council wishes to present the final plan to the residents for their approval. Describe a suitable method of presenting this information. Justify your answer.

.....

.....

(2)

Q5

(Total 10 marks)

Leave blank

6. Spam and viruses are common problems with e-mail on the Internet. State what spam and viruses are and explain how their effects may be reduced.

Spam is .....

.....

The effects of spam may be reduced by .....

.....

Viruses are .....

.....

The effects of viruses may be reduced by .....

.....

Q6

(Total 6 marks)

Leave blank

7. A school has several staff offices linked by a local area network (LAN). Each office is equipped with a standard PC which is connected to the LAN.

(a) State **three** additional items of hardware or software which would be required if the staff were to be given a video conferencing facility. Explain the purpose of each item.

Item 1 .....

Purpose .....

Item 2 .....

Purpose .....

Item 3 .....

Purpose .....

(3)

Staff can talk to each other using the school's internal telephone network and are also able to send internal e-mail through the LAN.

(b) Give **two** advantages of the internal e-mail over the internal telephone system.

Advantage 1 .....

Advantage 2 .....

(2)

(c) Give **one** advantage of the internal telephone system over internal e-mail.

.....

(1)

Q7

(Total 6 marks)

Leave blank

8. A temperature sensor is placed into a container of hot water. The temperature is logged by a computer for 30 minutes as the water cools.

The temperature readings are recorded on a spreadsheet and are to be displayed as a graph on a poster. Describe the processes involved in transferring the temperature readings from the sensor to the graph on the poster. You may use a diagram or flowchart.

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Q8

(Total 8 marks)

9. A student takes some photographs with a digital camera. Each picture is one megapixel (1,000,000 pixels) in size and each pixel needs two bytes of memory. The camera uses a 64 Megabyte flash card for storage. The student expects the camera to hold 32 pictures but finds that it actually holds 33. Explain why this is so.

.....

.....

.....

.....

Q9

(Total 4 marks)

Leave blank

10. The flowchart is intended to show how file generations can be used for backing up a file. Identify the files or processes represented by boxes A to G.

A .....

B .....

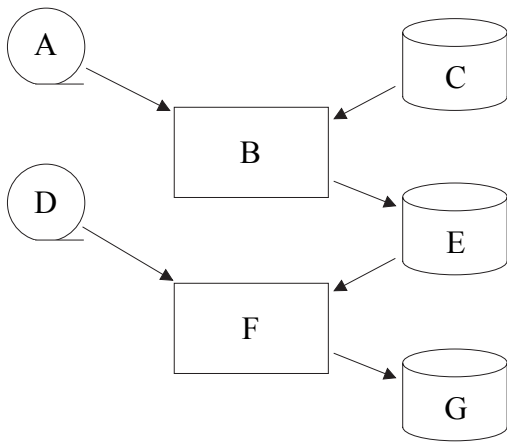
C .....

D .....

E .....

F .....

G .....



Q10

(Total 7 marks)

11. A school provides a laptop computer for each teacher. The laptops connect to the school's local area network (LAN). Teachers can use their laptops in several locations, including the school playground. The LAN uses radio network connections rather than cables.

(a) The school chose radio because it was easier to set up and was more versatile than a cable network. State **two** disadvantages of using radio rather than cables for this purpose.

Disadvantage 1 .....

Disadvantage 2 .....

(2)

(b) Explain how **one** of these disadvantages may be overcome.

.....

(1)

(c) The LAN is connected to the Internet through a network hub and a digital telephone line. State **two** other pieces of hardware that are needed and describe the function of each.

Hardware 1 .....

Function .....

Hardware 2 .....

Function .....

(4)

Q11

(Total 7 marks)

Leave blank

12. This spreadsheet is used to work out the pay for employees of a small company.
Each employee is paid an hourly rate for working up to 40 hours a week. Extra hours are called overtime and earn a higher rate of pay called overtime rate which is calculated by multiplying the hourly rate by one and a half.

	A	B	C	D	E	F	G
1	**Name**	**Hourly rate**	**Overtime rate**	**Hours worked**	**Overtime**	**Total pay**	
2	Jones	£5.50	£8.25	43	3	£244.75	
3	Singh	£5.50	£8.25	38	0	£209.00	
4	Cohen	£6.00	£9.00	46	6	£294.00	
5	Kumar	£5.00	£7.50	40	0	£200.00	
6	Stone	£6.50	£9.75	36	0	£234.00	
7							
8						£1,181.75	**Total payroll**

(a) State the function which will be in cell F8 .....

(2)

(b) State the formula which will be in cell C2 .....

(2)

(c) Complete the formula which will be in cell F3.

B3*(D3-E3).....

(3)

(d) If Mr. Jones works more than 48 hours in a week, the spreadsheet displays the message "over" in cell G2.

(i) Give the function statement in G2.

.....

(4)

(ii) Explain how the function could most easily be put into cells G3 to G6.

.....

(1)

Q12

(Total 12 marks)

TOTAL FOR PAPER: 100 MARKS

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