London Examinations IGCSE

Information and Communication Technology

Paper 2H

Higher Tier

Tuesday 19 May 2009 – Afternoon

Time: 1 hour 30 minutes

Examiner's use only

Team Leader's use only

Question Number	Leave Blank
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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 15 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.

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Turn over

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Answer ALL questions

1. Backing up data means taking a copy of the data so that it can be restored if required. A zip drive is a device that is suitable for backing up data.

(a) State **two** other devices that could be used for this purpose.

Device 1 ....

Device 2 ....

(2)

Several factors need to be carefully considered when a backup procedure is designed. One factor is the management of the backup process, such as who will label the backups.

(b) State **three** other factors that should be considered when backing up data. Give a reason in each case.

Factor 1 ....

Reason 1 ....

....

Factor 2 ....

Reason 2 ....

....

Factor 3 ....

Reason 3 ....

....
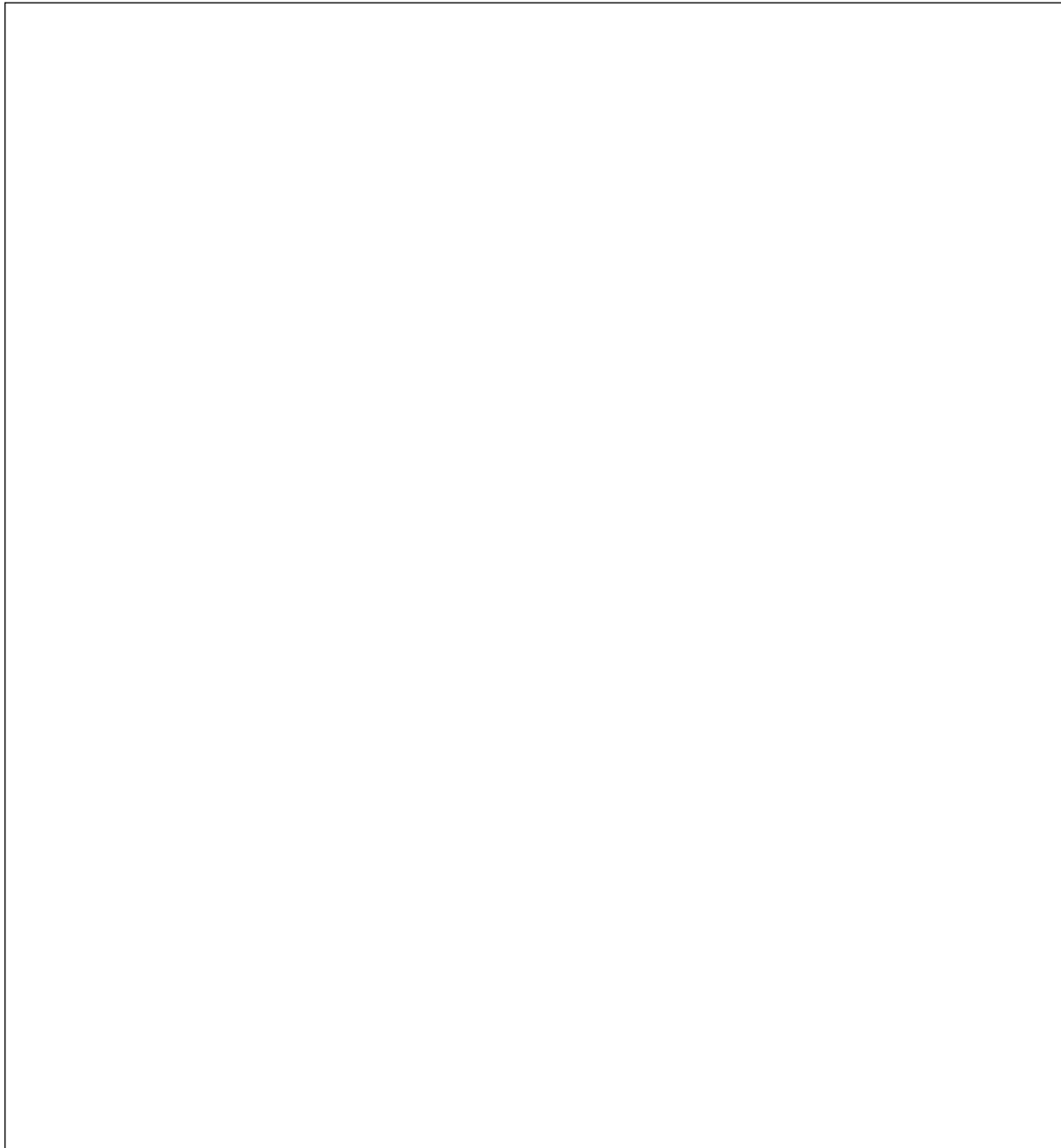
(6)

(Total 8 marks)

2. WorldTravel.net accepts holiday bookings to all parts of the world via the Internet. Customers must enter the data, some of which is shown below. A screen is then displayed so that the data can be accepted or amended.

- Customer name

- Customer telephone number

- Destination

- Number of people travelling.

Design a suitable user friendly screen for this purpose. Include **three** other data items that would be needed.

(Total 7 marks)

N 3 4 0 1 9 A 0 3 1 6

3. The widespread use of ICT has resulted in changes to the way people work.

(a) (i) Give **one** example of where the location of work has changed through the use of ICT.

....

(1)

(ii) Describe **one** effect that this has had on **employers**.

....

....

(2)

(b) (i) Give **one** example of where a job role has changed through the use of ICT.

....

(1)

(ii) Describe **one** effect that this has had on **employees**.

....

....

(2) Q3

(Total 6 marks)

4. (a) Explain how a computer simulation is created.

....

....

....

(2)

(b) Virtual reality is a form of computer simulation. Give an example of where virtual reality is used.

....

....

(1)

(c) Explain how virtual reality simulations differ from other computer simulations.

....

....

....

(2) Q4

(Total 5 marks)

5. All students at a college have to pay a fee of up to £150.00. The table forms part of the college's new administration system.

Student ID	Surname	Initials	Date of Birth	Fee (£)
AHM04025	Ahmed	S	21/09/93	35.00
FAC08036	Facciuto	L	01/08/91	129.00
LAN06031	Lanfear	MR	25/06/92	29.39
LAN06031	Langston	P	04/02/91	51.67
WIL08051	Wilson	JIF	30/07/92	119.25

(a) Suggest a suitable field type and size for each of the following.

   (i) Student ID ....

   (1)

   (ii) Date of Birth ....

   (1)

   (iii) Fee (£) ....

   (1)

(b) The designer wishes to test the system with typical data, extreme data, and invalid data. Give **one** example of each form of test data for the Fee field.

   Typical data ....

   Extreme data ....

   Invalid data ....

   (3)

   (Total 6 marks)

6. After logging onto a computer, a graphical user interface (GUI) appears. Describe **three** features of the GUI that make it an effective human/computer interface.

Feature 1 ....

Explanation ....

....

....

Feature 2 ....

Explanation ....

....

....

Feature 3 ....

Explanation ....

....

....

(Total 6 marks)

Q6

7. A college wishes to show parents how examination results have improved over the previous five years. The Principal has suggested using tables, charts, or multi-media to present this information. Each of these methods has advantages over the others.

Describe the advantages of each method in this context.

Tables ....

....

....

Charts ....

....

....

Multi-media ....

....

....

(Total 6 marks)

Q7

8. E-mail has improved communication within organisations. Describe the steps used to carry out each of the following tasks efficiently.

(a) Pass on to the sales manager an e-mail message that you have received from a customer.

Step 1 ....

Step 2 ....

(2)

(b) Inform all managers in the organisation about the time and date of a meeting.

Step 1 ....

Step 2 ....

(2)

(c) Send the photograph of a new product to the publicity department.

Step 1 ....

Step 2 ....

(2)

(Total 6 marks)

9. State **two** automatic scanning methods for capturing alphanumeric data. For each method give an example of its use.

Method 1 ....

Use 1 ....

Method 2 ....

Use 2 ....

(Total 4 marks)

Q8

Q9

10. Letters can be delivered via e-mail or via the postal service.

(a) Describe **one** example of where it would be better to use the postal service than e-mail.

....

....

(2)

It is possible to set up a video conference call where more than two people in different countries can hold a discussion using a video link.

(b) (i) A computer has a video camera and network operating system. State **one** other input device and **one** other software item to enable the computer to be used for video conferencing.

Input device ....

Software item ....

(2)

(ii) Describe the type of network connection required, giving a reason for your answer.

....

....

(2)

(iii) Explain why **two** people might prefer to use a video conference rather than an ordinary telephone call.

....

....

(2)

(Total 8 marks)

Q10

11. A college uses a computer-based batch processing system for keeping the students' records. The students provide their details on enrolment forms. The completed forms are collected into batches to update the master files. This occurs every night during enrolment week, and once a week following enrolment week to update the student record system.

(a) (i) Explain the term 'batch processing' in this context.

....

....

....

....

....

(3)

(ii) Explain how batch processing methods could produce errors in student data.

....

....

....

(2)

(b) (i) Explain why batch processing is more appropriate than transaction processing during enrolment week.

....

....

....

(2)

(ii) Explain why transaction processing is more appropriate than batch processing outside enrolment week.

....

....

....

(2)

(Total 9 marks)

Q11

12. A school library uses an information system to store details of books borrowed by students. Part of the student table is shown.

Stud_num	Name	Date due	ISBN	Tutor
OXZ3564	Hawkins	21/09/2008	0-7487-6367-8	PA
WRT1458	Singh	23/02/2008	0-7847-5747-3	DB
ASD5689	Smith	05/06/2008	0-6581-2543-9	MT
QWE1234	Ibell	14/05/2008	0-2591-2215-7	VG

Each book in the library has a bar code containing its ISBN for that volume.

(a) The bar code contains a check digit. Explain how the check digit is used to validate data entry in this context.

....

....

....

(2)

(b) Data must also be verified. One manual method is by proofreading.

(i) State **one** other manual method of verification.

....

(1)

(ii) For the data shown, suggest a field other than the ISBN that could be verified electronically. Give a reason for your choice and describe how this verification would be done.

Field ....

Reason ....

Description ....

....

(4)

(Total 7 marks)

Q12

13. Verna is using the Internet to research information for an ICT project. Verna does not know of any suitable web sites. She enters the word 'processors' in the search engine and obtains many pages of results. Most of the results are not related to ICT.

(a) Describe how Verna might narrow her search to find more suitable information for her project.

....

....

....

(2)

(b) Explain why Verna should be cautious about using information obtained from the Internet in her research work.

....

....

....

(2)

(c) Shortly after completing the research Verna starts to receive unwanted e-mail related to the project topic. Explain how this could happen.

....

....

....

(2)

Q13

(Total 6 marks)

14. The manager of a small hotel uses a stand-alone computer to administer the booking and billing systems. The manager is considering setting up a small wireless area network. Workstations will be used in reception, the manager's office and in the dining room.

(a) Describe the additional hardware and software that would be required in the stand-alone computers to enable them to be networked in this way.

....

....

....

....

(3)

(b) Explain how the manager could prevent reception and dining room staff from accessing confidential customer information on the network.

....

....

....

....

(3)

(c) Explain how the dining room staff can use this system to ensure that only guests registered in the hotel eat in the dining room.

....

....

....

(2)

(Total 8 marks)

Q14

15. Peter runs a wholesale garden business. Peter uses a spreadsheet to help with the business accounts. Part of the spreadsheet he uses is shown.

	A	B	C	D	E
1	**Sales – May 2009**				
2					
3					
4	**Customer**	**Total Sales**	**Discount**	**Amount Due**	
5	Flowers R Us	£4,392.00	£65.88	£4,326.12	
6	Red Roses Nursery	£8,752.00	£131.28	£8,620.72	
7	Bloomsbury	£3,325.00	£0.00	£3,325.00	
8	Garden Delights	£11,569.00	£173.54	£11,395.46	
9	Valley Gardening Services	£23,698.00	£355.47	£23,342.53	
10	Sensational Blooms	£5,000.00	£75.00	£4,925.00	
11	Flowers for All	£12,345.00	£185.18	£12,159.82	
12					

Peter awards a discount of 1.5% to all customers who spend over £4,000 on a single purchase.

(a) Give a suitable formula, using the IF function, that can be placed in cell C5 to calculate the discount.

....

(3)

Peter is so pleased with the increase in business as a result of the discount scheme that he decides to offer different levels of discount. Sales over £8,000 will now earn a 2% discount.

(b) Give a formula that must be placed in cell C5 to calculate any new discount entitlement.

....

(4)

Users of the spreadsheet now need to know that it calculates the new discounts.

(c) Amend the spreadsheet diagram above to show users that the spreadsheet now calculates additional discounts on sales over £8,000.

(1)

(Total 8 marks)

TOTAL FOR PAPER: 100 MARKS

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