Paper Reference(s)

4385/2H

London Examinations IGCSE

Information and Communication Technology

Paper 2H

Higher Tier

Friday 16 November 2007 – Morning

Time: 1 hour 30 minutes

Materials required for examination	Items included with question papers
Nil	Nil

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 14 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 questions

1. State, giving a reason in **each** case, the most suitable storage medium for **each** of the following applications.

    (a) A secondary school teacher giving a copy of a 30-kilobyte computer program to all members of her computing class.

    Storage medium ....

    Reason ....

    ....

    ....

    (3)

    (b) A publisher distributing a 500-megabyte electronic encyclopaedia.

    Storage medium ....

    Reason ....

    ....

    ....

    (3)

    (c) A school computer technician backing up a 100-gigabyte hard disk on a network file server.

    Storage medium ....

    Reason ....

    ....

    ....

    (3)

(Total 9 marks)

M 2 9 8 8 9 A 0 2 1 6

2. A company provides all new employees with a booklet giving guidelines for working with computers.

(a) State, giving a reason in each case, **three** health and safety guidelines for PC users.

Guideline 1 ....

Reason 1 ....

....

Guideline 2 ....

Reason 2 ....

....

Guideline 3 ....

Reason 3 ....

....

(6)

(b) State, giving a reason in each case, **two** guidelines for protecting company data held on computers from deliberate theft.

Guideline 1 ....

Reason 1 ....

....

Guideline 2 ....

Reason 2 ....

....

(4)

(Total 10 marks)

Q2

M 2 9 8 8 9 A 0 3 1 6

3. The diagram shows part of a supermarket stock control system.
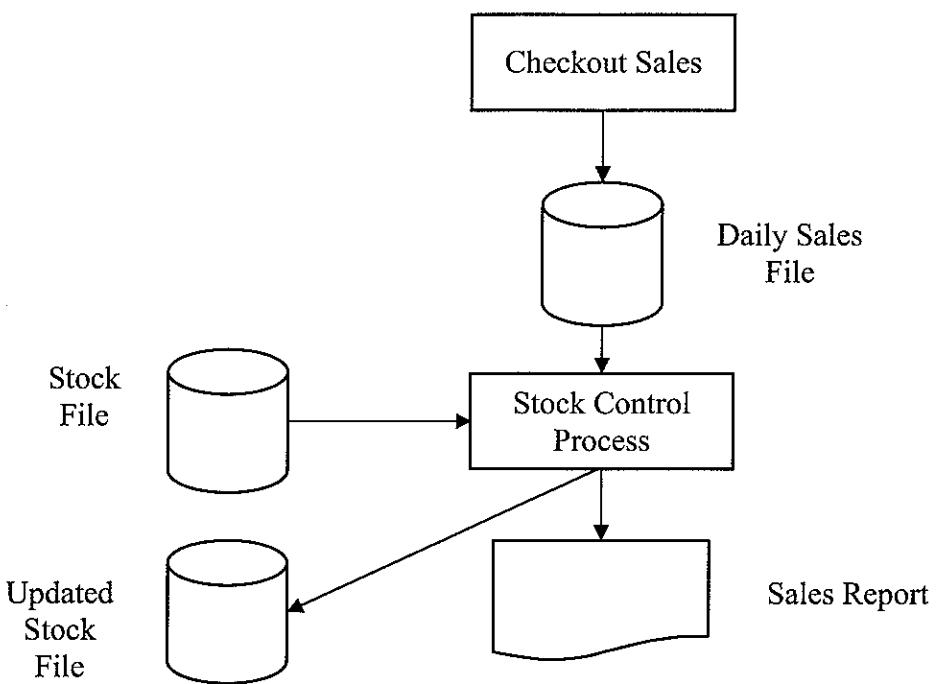
(a) In the diagram, the Daily Sales File is the **transaction file** and the Stock File is the **master file**. Explain what is meant by the terms:

(i) transaction file ....

....

....

(2)

(ii) master file ....

....

....

(2)

(b) The stock control system uses a generation backup system.

(i) State which file in the diagram is the father file.

....

(1)

(ii) State which file in the diagram is the son file.

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(1)

(iii) Describe how the father file would be regenerated if it becomes corrupted.

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(2)

(c) Explain how the sales report is generated.

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(3)

(Total 11 marks)

4. The head gardener looks after a large greenhouse and its control system. A computer controls the temperature and humidity in the greenhouse.

   The temperature and humidity in the greenhouse can be controlled by heaters, cooling fans, misters that spray water and ventilators.

Thermometer		Heater		Ventilator
		Computer		
Misters		Fan		Humidity sensor
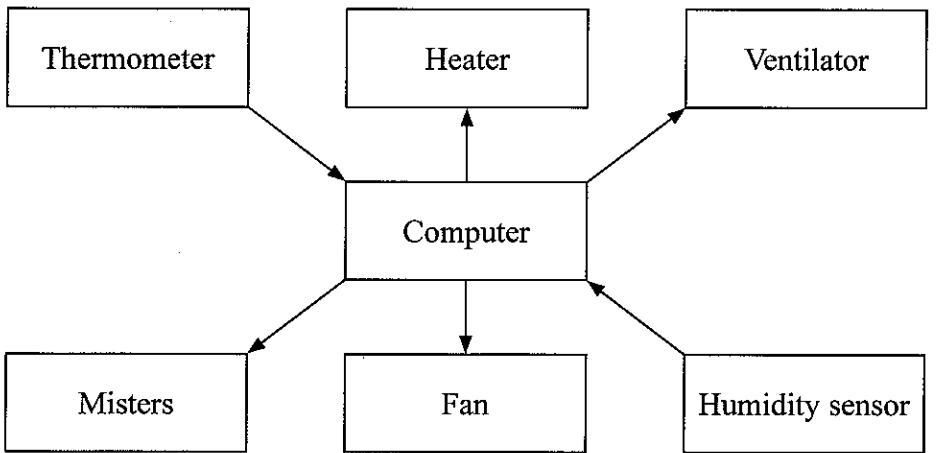
(a) Complete the table below.

	Temperature	Humidity
Too high	Switch off heaters. Switch on cooling fans.	Switch off misters. Switch on ventilators.
Too low		Switch on misters. Switch off ventilators.

(2)

The computer controls the equipment by sending a digital signal. A **1** turns the equipment on and a **0** turns it off.

(b) Complete the table below to show the digital signal sent to the equipment if the temperature and humidity in the greenhouse are too high.

Heater	
Cooling fan	
Mister	
Ventilator	

(2)

(c) Explain why the head gardener would be worried if each item of equipment were sent a **1** at the same time.

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(2)

(d) Explain how the computer would use feedback to maintain a temperature of 25°C in the greenhouse.

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(5)

(Total 11 marks)

Q4

Turn over
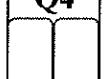
5. The college librarian has called in a systems analyst to advise on a new computer system for the library. Describe **three** activities the analyst would carry out at each of the following stages.

(a) Analysing the current system.

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(3)

(b) Designing the new system.

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(3)

(c) Implementing the new system.

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(3)

(Total 9 marks)

Q5

6. (a) Standard keyboards include function keys. Give **two** examples of their use.

Example 1 ....

....

....

Example 2 ....

....

....

(2)

(b) Computer mice detect their position in several ways.

Name **two** different types of mouse. Describe the main differences in the way they detect their position.

Mouse 1 ....   Mouse 2 ....

(1)

Differences ....

....

....

....

(2)

Q6

(Total 5 marks)

7. A student uses software to help with several tasks for school plays.

(a) Explain how the features of a desktop publishing package can be used to create a poster to advertise a play.

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(2)

The costume manager uses a database to store information about costumes used for the plays.

(b) Explain how this database would be used by the costume manager.

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(3)

(Total 5 marks)

8. A company uses a database to keep information about its customers. The database contains **fields, records** and **tables**.

(a) Use the terms **fields, records** and **tables** to describe how customer data is held in this database.

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(3)

A customer number is part of the database.

(b) Explain the purpose of the customer number in this context.

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....

....

(2)

(c) Give **three** reasons why some of the data in this database might be in a coded format.

Reason 1 ....

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Reason 2 ....

....

Reason 3 ....

....

(3)

Q8

(Total 8 marks)

M 2 9 8 8 9 A 0 1 1 1 6

9. A school uses a spreadsheet to work out the profit from food sold in the snack bar. Part of the spreadsheet is shown below.

	A	B	C	D	E	F	G
1	Snack	Cost per item	Number sold	Total Cost	Selling price	Total income	Profit
2	Toast	£0.10	200	£20.00	£0.20	£40.00	£20.00
3	Pizza	£0.42	125	£52.50	£0.75	£93.75	£41.25
4	Burger	£0.86	70	£60.20	£1.20	£84.00	£23.80
5	Crisps	£0.45	60	£27.00	£0.54	£32.40	£5.40
6	Apple	£0.12	20	£2.40	£0.18	£3.60	£1.20
7	Biscuit	£0.15	80	£12.00	£0.20	£16.00	£4.00
8							
9						Total profit	£95.65
10						Target profit	£100.00
11							

(a) State a suitable formula that could be used in G2 if this cell were to show profit as a percentage of total income.

....

....

(2)

The canteen manager can set a target profit in cell G10. When the total profit reaches or exceeds the target profit, the words "Target met" appear in cell G11.

(b) Describe how this could be done.

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(3)

(Total 5 marks)

Q9

10. A company uses a computer system to calculate its payroll. One type of error that could be made when data is typed into the system is a transcription error.

(a) A **transcription error** can be detected by a **verification check**. Explain what is meant by:

(i) a transcription error,

....

....

....

(2)

(ii) a verification check.

....

....

....

(1)

(b) Dates are input to this system using the format dd-mmm-yyyy e.g. 21-SEP-2007. Describe **two** validation checks that could be carried out on dates in this format.

Check 1 ....

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....

....

Check 2 ....

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....

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(4)

(Total 7 marks)

M 2 9 8 8 9 A 0 1 3 1 6

11. One of the functions of a computer operating system is input-output control.
Describe, using an example, how input-output control works.

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<div align="right">Q11</div>

(Total 3 marks)

12. A school monitors the weather. There is a range of sensors on the roof. The sensors send data to a PC in a classroom, where it is displayed on a screen.

Explain how the data from a sensor arrives at the PC and is displayed.

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<div align="right">Q12</div>

(Total 4 marks)

13. A business has three offices in the same building. Each office has a peer-to-peer network of three PCs and a printer. The manager has been advised that it would be more efficient if the nine computers were formed into a server-controlled network with a single printer.

(a) Draw a labelled diagram showing the components of the server-controlled network.

(3)

(b) In addition to the existing hardware and the server, other items of hardware are needed to create the network. Name **two** of these items, giving a reason why each is needed.

Item 1 ....

Reason ....

....

Item 2 ....

Reason ....

....

(4) Q13

(Total 7 marks)

PLEASE TURN OVER FOR QUESTION 14

14. Ben and Shazzia own a business selling ICT equipment. They use a computer at the checkout. All equipment for sale is bar coded and entered in the main stock file. A bar code is shown below.

5 060037 749018

(a) Explain how the computer knows that the bar code has been input correctly.

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(3)

Ben and Shazzia sometimes have special offers when customers can buy three items for the price of two.

(b) Explain how the computer system determines the price in this case.

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(3)

Q14

(Total 6 marks)

TOTAL FOR PAPER: 100 MARKS

END