Paper Reference(s)

4385/2H

London Examinations IGCSE

Information and Communication Technology

Paper 2H

Higher Tier

Wednesday 18 May 2005 – Morning

Time: 1 hour 30 minutes

Materials required for examination
Nil

Items included with question papers
Nil

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 16 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.

Turn over

edexcel
INTERNATIONAL

Answer ALL questions

1. A college uses an information system that holds large amounts of data about students and staff.

    (a) *Validation* and *verification* are carried out on the data.

         (i) Describe the validation process.

         ....

         ....

         (2)

         (ii) Describe the verification process.

         ....

         ....

         (2)

    (b) Describe **two** measures that could be taken to protect the data against deliberate theft or corruption.

         (i) ....

         (ii) ....

         (2)

    (c) Describe **two** measures that could be taken to protect the data against accidental loss.

         (i) ....

         (ii) ....

         (2)

    (Total 8 marks)

Q1

2. Shops often use computerised systems to add up sales, produce receipts and control the level of stock. When goods are purchased they are taken to the checkout or point of sale (POS) terminal.

(a) A bar code scanner is part of a point of sale terminal. List **three** other devices that belong to a point of sale terminal.

(i) ....

(ii) ....

(iii) ....

(3)

(b) Some goods have bar codes similar to this.

50   12345   12345   9

State **two** items of data encoded in a bar code.

(i) ....

(ii) ....

(2)

(c) Point of sale systems have brought advantages to shops and customers.

(i) State **one** advantage for the customer.

....

....

(1)

(ii) State **two** advantages for shops.

Advantage 1 ....

....

Advantage 2 ....

....

(2)

Q2

(Total 8 marks)

3. Serina is organising a disco to raise money. She wishes to know the minimum number of tickets that must be sold to make a profit of $120.

Serina has created this spreadsheet to help her.

	A	B	C	D	E	F	G
1	No. of tickets sold	Selling price ($)	Total sales ($)	Cost of disco ($)	Cost of printing ($)	Total cost ($)	Profit ($)
2	0	5.00	0.00	60.00	0.00	60.00	−60.00
3	10	5.00	50.00	60.00	5.00	65.00	−15.00
4	20	5.00	100.00	60.00	10.00	70.00	30.00
5	30	5.00	150.00	60.00	15.00	75.00	75.00
6	40	5.00	200.00	60.00	20.00	80.00	120.00
7	50	5.00	250.00	60.00	25.00	85.00	165.00

(a) Choose words from the list to complete the sentences.

number
text
spreadsheet
formula
model

(i) In the spreadsheet, CELL C1 contains ....

(ii) In the spreadsheet, CELL B7 contains a ....

(iii) In the spreadsheet, CELL C3 contains a ....

(3)

(b) State how many tickets Serina must sell to make a profit of $120.

....

(1)

(c) Serina used a formula to work out the total cost in column F.

Select from the following formulae the one that could be used to calculate the total cost of 10 tickets.

1   D3 + E3
2   E2 * D2
3   D3 * E3

....
(1)

(d) Serina changes the selling price in column B to $7.00.

Give two other columns which would change as a result.

....

....
(2)   **Q3**

(Total 7 marks)

4. *Homes International* is a magazine that advertises houses for sale around the world. Agents travel to locations and e-mail photographs to the head office in London.

(a) Name a suitable input device for the agents to use.

Give **two** reasons for your choice.

Name ....

(1)

Reason 1 ....

Reason 2 ....

(2)

(b) The agents are asked to compress photograph files before e-mailing them.

Give **two** reasons why these files should be compressed.

Reason 1 ....

....

(2)

Reason 2 ....

....

(2)

(c) The agents need to make backups of their photographs.

(i) Name **one** suitable storage device for this purpose.

....

(1)

(ii) State **one** feature that makes it suitable.

....

(1)

(iii) Explain why backups are necessary.

....

....

(2)

(Total 11 marks)

Q4

5. Several schools and colleges are considering the use of video conferencing.

(a) Explain the term video conferencing.

....

....

....

(3)

(b) The schools and colleges already have networks consisting of linked computers but have no video conferencing facilities.

Give **three** additional items of hardware needed for video conferencing.

(i) ....

(ii) ....

(iii) ....

(3)

Q5

(Total 6 marks)

6. Computers can be used to collect data from experiments.

(a) Give **three** reasons why computers are used for this purpose.

(i) ....

....

(ii) ....

....

(iii) ....

....

(3)

(b) Give **one** example of data logging.

....

(1)

(c) Describe how information technology could be used to display, in a printed format, an analysis of the data logging.

....

....

....

....

(4)

(d) State, with a reason, a suitable type of printer for printing the analysis.

Printer ....

Reason ....

(2)

Q6

(Total 10 marks)

7. One of the roles of the central processing unit (CPU) is to perform arithmetic operations. An example of an arithmetic operation is adding ONE to a counter. State **three** other roles of the CPU and in each case give an example.

Role 1 ....

Example ....

(2)

Role 2 ....

Example ....

(2)

Role 3 ....

Example ....

(2)

(Total 6 marks)

Q7

8. RAM and ROM are two types of memory in a computer.

(a) (i) Explain what happens to the contents of RAM when the computer is switched off.

....

(1)

(ii) Explain what happens to the contents of ROM when the computer is switched off.

....

(1)

(iii) State two uses of RAM.

Use 1 ....

Use 2 ....

(2)

(b) State **two** different types of backing store used by computers.

(i) ....

(ii) ....

(2)

(c) 1 kilobyte = 1024 bytes and 1 megabyte = 1024 kilobytes. Explain why this is so.

....

....

(2) **Q8**

(Total 8 marks)

9. An operating system is a program that controls the hardware. State **four** tasks an operating system performs and give an example of each task.

Task 1 ....

Example ....

....

(2)

Task 2 ....

Example ....

....

(2)

Task 3 ....

Example ....

....

(2)

Task 4 ....

Example ....

....

(2)

(Total 8 marks)

Q9

10. A college uses a local area network (LAN).

(a) State **three** advantages of the LAN over several stand-alone PCs.

(i) ....

(ii) ....

(iii) ....

(3)

A plan of the network is shown.

(b) Clearly label the server in the network.

(1)

(c) The line labelled X is a fibre optic cable. The line labelled Y is a copper wire cable.

Explain why these cables are different.

....

....

(2)

(d) Explain why the college uses a star network rather than a bus network.

....

....

....

(2)

Hub

X

Y
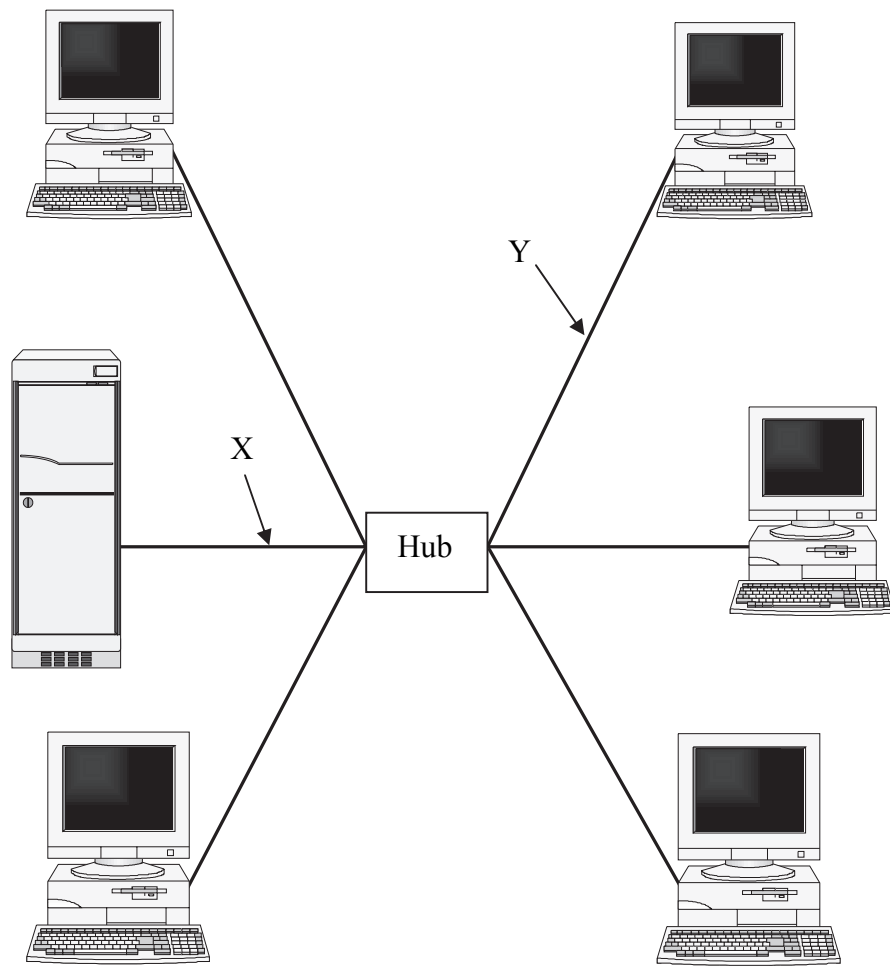
(Total 8 marks)

11. The Internet makes extensive use of linked networks.

(a) State **two** hardware devices that enable networks to be linked.

....

....

(2)

(b) E-mail is an Internet service that is sometimes affected by anti-social activities.

(i) Describe one of these activities.

....

....

(2)

(ii) Describe how the effects of this activity can be reduced.

....

....

(2) Q11

(Total 6 marks)

12. The introduction of computer terminals and personal computers has been associated with a number of physical health hazards.

(a) State **three** health hazards that have been associated with prolonged use of computers.

(i) ....

(ii) ....

(iii) ....

(3)

(b) Describe **five** actions which may be taken to reduce the effects of these health hazards.

Action 1 ....

Action 2 ....

Action 3 ....

Action 4 ....

Action 5 ....
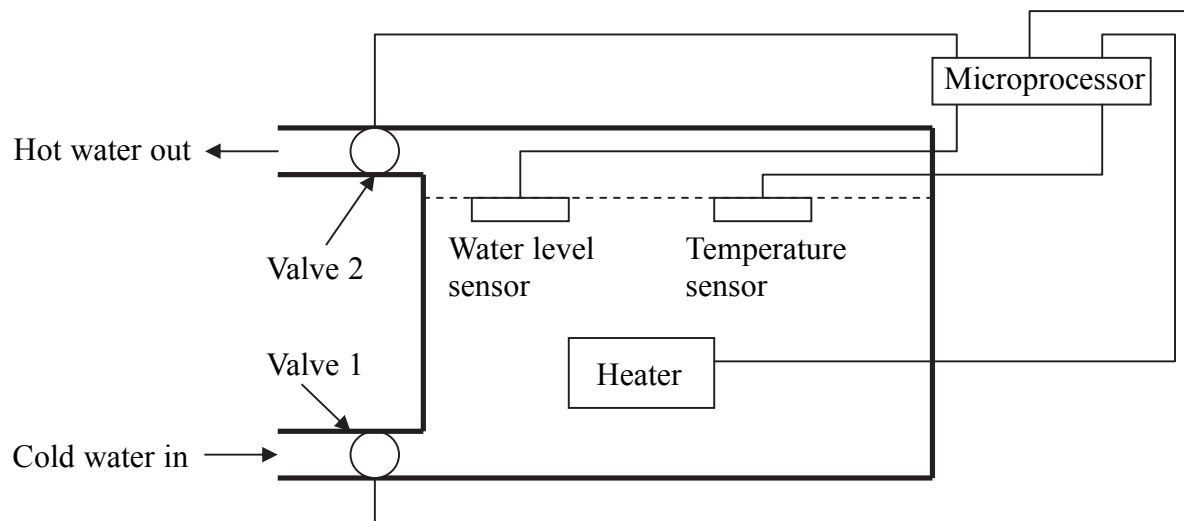
(5)

(Total 8 marks)

Q12

13. The heating of water in a tank is under the control of a microprocessor. Cold water enters the tank through Valve 1. It is heated to a set temperature and leaves the tank through Valve 2.

(a) (i) State the purpose of feedback in a control circuit.

....

(1)

(ii) Identify the **two** areas where feedback is used in this application.

Area 1 ....

(1)

Area 2 ....

(1)

(b) (i) An analogue to digital converter has been omitted from the diagram. Draw a box to indicate where it could be placed.

(2)

(ii) Give a reason for using an analogue to digital converter.

....

(1)

Q13

(Total 6 marks)

TOTAL FOR PAPER: 100 MARKS

END