

Centre No.						Paper Reference	Surname	Initial(s)
Candidate No.						1 1 8 5 / 2 H	Signature	

Paper Reference(s)

1185/2H

Edexcel GCSE (Full Course)

Information & Communication

Technology

Paper 2H

Higher Tier

Tuesday 7 June 2005 – Morning

Time: 2 hours

Examiner's use only

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Team Leader's use only

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Question Number	Leave Blank
A	
B1	
B2	
B3	
B4	
B5	
C1	
C2	
C3	
C4	
C5	
C6	
C7	
C8	
Total	

Materials required for examination
Nil

Items included with question papers
Case Study

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.
For Section A: Do not use pencil. Use blue or black ink. For each question, choose an answer and put a cross in the box (☒). Mark only one answer for each question. If you change your mind about an answer, put a line through the box (☒) and then mark your new answer with a cross (☒).
Write your answers to Section B and Section C in the spaces provided.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. (2). You will be awarded up to 6 marks for quality of written communication.
This paper has 20 questions in section A, 5 questions in section B and 8 questions in Section C. Section B contains questions on the Case Study. The total mark for this paper is 126. There are 24 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. Show all stages in any calculations and state the units. Include diagrams where these are helpful.

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Turn over

SECTION A

Answer ALL questions.
For each question, choose an answer A, B, C or D and put a cross in the box.
Mark only one answer for each question. If you change your mind about an answer, put a line through the box and then mark your new answer with a cross.

eg: Mark the box like this:

If you change your mind, mark the boxes like this:

<input checked="" type="checkbox"/> A
<input checked="" type="checkbox"/> B
<input checked="" type="checkbox"/> C <i>This shows your answer</i>
<input checked="" type="checkbox"/> D

<input checked="" type="checkbox"/> A <i>This shows your final answer</i>
<input type="checkbox"/> B
<input checked="" type="checkbox"/> C <i>First answer</i>
<input type="checkbox"/> D

1. Joanne suffers from RSI when using her computer.

What does RSI stand for?

- A Repetitive Strain Illness
- B Repetitive Sprain Infection
- C Reduced Stress Injury
- D Repetitive Strain Injury

(Total 1 mark)

Q1

2. Identify the hardware that is necessary to connect a standard computer system to the Internet.

- A keyboard
- B database
- C modem
- D mouse

(Total 1 mark)

Q2

3. What is the most suitable storage medium for storing an encyclopaedia?

- A floppy disc
- B spreadsheet
- C CD ROM
- D database

(Total 1 mark)

Q3



<p>4. Which of the following is a verification method?</p> <p><input type="checkbox"/> A range check</p> <p><input type="checkbox"/> B proof reading</p> <p><input type="checkbox"/> C check digit</p> <p><input type="checkbox"/> D data logging</p> <p style="text-align: right;">(Total 1 mark)</p>	<p>Leave blank</p> <p style="text-align: center;">Q4</p> <p style="text-align: center;"><input type="text"/></p>
<p>5. Two formats for graphic files are</p> <p><input type="checkbox"/> A bitmap and clip art</p> <p><input type="checkbox"/> B vector and bitmap</p> <p><input type="checkbox"/> C CAD and vector</p> <p><input type="checkbox"/> D CAD and CAM</p> <p style="text-align: right;">(Total 1 mark)</p>	<p style="text-align: center;">Q5</p> <p style="text-align: center;"><input type="text"/></p>
<p>6. Which one of the following is not a function of the CPU?</p> <p><input type="checkbox"/> A handling control functions</p> <p><input type="checkbox"/> B performing arithmetical operations</p> <p><input type="checkbox"/> C storing data</p> <p><input type="checkbox"/> D file management</p> <p style="text-align: right;">(Total 1 mark)</p>	<p style="text-align: center;">Q6</p> <p style="text-align: center;"><input type="text"/></p>
<p>7. A school has installed filtering software on its computer network.</p> <p>They have done this to</p> <p><input type="checkbox"/> A prevent hackers accessing the pupils' files</p> <p><input type="checkbox"/> B help them sort database files</p> <p><input type="checkbox"/> C prevent pupils accessing inappropriate web sites</p> <p><input type="checkbox"/> D prevent viruses</p> <p style="text-align: right;">(Total 1 mark)</p>	<p style="text-align: center;">Q7</p> <p style="text-align: center;"><input type="text"/></p>



N 2 1 1 8 8 A 0 3 2 4

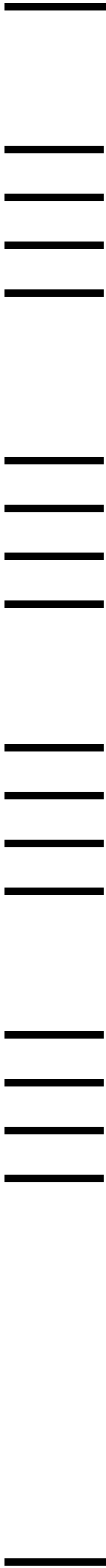


<p>8. The higher the resolution the clearer the image on the screen.</p> <p>The resolution is measured in</p> <ul style="list-style-type: none"><input type="checkbox"/> A pixels<input type="checkbox"/> B dpi<input type="checkbox"/> C MHz<input type="checkbox"/> D MB <p style="text-align: right;">(Total 1 mark)</p>	Leave blank Q8 <input type="text"/>
<p>9. Data entered into a computer should be as accurate as possible. One technique used is validation.</p> <p>Validation is carried out by</p> <ul style="list-style-type: none"><input type="checkbox"/> A the software on data entry<input type="checkbox"/> B the hardware on data entry<input type="checkbox"/> C proof reading the data<input type="checkbox"/> D the data entry clerk <p style="text-align: right;">(Total 1 mark)</p>	 Q9 <input type="text"/>
<p>10. What are the two most appropriate application packages for producing personalised letters to send to a large number of people?</p> <ul style="list-style-type: none"><input type="checkbox"/> A database and spreadsheet<input type="checkbox"/> B CAD and Desktop Publishing<input type="checkbox"/> C database and word processing<input type="checkbox"/> D graphics and word processing <p style="text-align: right;">(Total 1 mark)</p>	 Q10 <input type="text"/>
<p>11. A series of commands written to solve a problem is called</p> <ul style="list-style-type: none"><input type="checkbox"/> A an algorithm<input type="checkbox"/> B a decision<input type="checkbox"/> C a process<input type="checkbox"/> D feedback <p style="text-align: right;">(Total 1 mark)</p>	 Q11 <input type="text"/>



<p>12. When solving an ICT systems problem, the correct sequence is</p> <ul style="list-style-type: none"> <input type="checkbox"/> A analysis, design, implementation, evaluation <input type="checkbox"/> B implementation, design, evaluation, analysis <input type="checkbox"/> C design, implementation, analysis, evaluation <input type="checkbox"/> D analysis, implementation, design, evaluation <p style="text-align: right;">(Total 1 mark)</p>	<p>Leave blank</p> <p>Q12</p> <input type="text"/>
<p>13. Which is not one of the principals of the Data Protection Act?</p> <ul style="list-style-type: none"> <input type="checkbox"/> A data must be collected fairly and lawfully <input type="checkbox"/> B data can only be used for the purpose specified <input type="checkbox"/> C data must be accurate and kept up to date <input type="checkbox"/> D data must only be used for accounting purposes <p style="text-align: right;">(Total 1 mark)</p>	<p>Q13</p> <input type="text"/>
<p>14. Which of the following statements is not correct?</p> <ul style="list-style-type: none"> <input type="checkbox"/> A RAM stores the instructions for starting up the computer <input type="checkbox"/> B RAM holds the data that is being worked upon <input type="checkbox"/> C RAM is volatile <input type="checkbox"/> D RAM can be read from and written to <p style="text-align: right;">(Total 1 mark)</p>	<p>Q14</p> <input type="text"/>
<p>15. Part of the Central Processing Unit is the ALU.</p> <p>What does ALU stand for?</p> <ul style="list-style-type: none"> <input type="checkbox"/> A Analogue Logic Unit <input type="checkbox"/> B Arithmetic Learning Unit <input type="checkbox"/> C Arithmetic Logic Unit <input type="checkbox"/> D Analogue Learning Unit <p style="text-align: right;">(Total 1 mark)</p>	<p>Q15</p> <input type="text"/>





<p>16. A database that contains linked tables is called</p> <ul style="list-style-type: none"><input type="checkbox"/> A a relational database<input type="checkbox"/> B a linked database<input type="checkbox"/> C a database management system<input type="checkbox"/> D a multiple database system <p style="text-align: right;">(Total 1 mark)</p>	Leave blank Q16 <input type="text"/>
<p>17. The most suitable computer system for a large amount of graphic design work would consist of</p> <ul style="list-style-type: none"><input type="checkbox"/> A 512MB of ROM, a big monitor and a scanner<input type="checkbox"/> B a large hard drive, CD ROM and a mouse<input type="checkbox"/> C 512MB of RAM, a large hard drive and a fast processor<input type="checkbox"/> D 256MB of RAM, a large hard drive and a scanner <p style="text-align: right;">(Total 1 mark)</p>	Q17 <input type="text"/>
<p>18. The main factors that determine the power of a computer are</p> <ul style="list-style-type: none"><input type="checkbox"/> A the type of processor, clock rate and the amount of RAM<input type="checkbox"/> B the type of processor, the amount of ROM and the programming language used<input type="checkbox"/> C the type of processor, its memory and the speed of the modem<input type="checkbox"/> D the type of processor, the amount of ROM and the software available <p style="text-align: right;">(Total 1 mark)</p>	Q18 <input type="text"/>
<p>19. Which of the following is not an example of computer modelling?</p> <ul style="list-style-type: none"><input type="checkbox"/> A using a spreadsheet to predict how successful a business could be<input type="checkbox"/> B a virtual walk through a building using 3D equipment<input type="checkbox"/> C sorting a database of pupils into alphabetical order<input type="checkbox"/> D learning to fly an aeroplane using flight simulating software <p style="text-align: right;">(Total 1 mark)</p>	Q19 <input type="text"/>



20. Pupils in a secondary school are between 11 and 18 years of age.

Which one of the following values would be extreme data?

- A 22
- B 16
- C 18
- D 10

(Total 1 mark)

Leave
blank

Q20

TOTAL FOR SECTION A: 20 MARKS



N 2 1 1 8 8 A 0 7 2 4

Leave blank

SECTION B

Case Study Questions.

Attempt ALL questions using the spaces provided.

1. Herstham Community Theatre uses database software to store a mailing list of people who are sent the *Programme of Events* brochure.

This table shows part of the database:

Customer-ID	Date of Last Visit	Title	Initial(s)	Surname	Friend
221	02/03/04	Mr	A	Williams	Y
222	19/07/04	Miss	P K	Thomson	Y
223	25/11/04	Ms	G	Pearce	N
224	15/01/05	Mrs	T H	Rahman	N

- (a) (i) Identify the key field.

.....
(1)

- (ii) Explain the purpose of a key field.

.....
.....
.....
(2)



Leave
blank

(b) The **Friend** field is encoded.

(i) Explain the meaning of 'encoded'.

.....
.....
.....

(2)

(ii) Give **two** benefits of encoding data.

1

.....

2

.....

(2)

(c) Explain how Herstham Community Theatre can ensure that the data in their mailing list database is kept as accurate as possible.

.....
.....
.....
.....
.....
.....

(4)

(Total 11 marks)

Q1

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N 2 1 1 8 8 A 0 9 2 4

Leave blank

2. (a) The theatre has a computer network.

Give **two** disadvantages of a networked computer system compared to standalone systems.

1

.....

2

.....

(2)

(b) The theatre produces a *Friends' Newsletter*. This is sent to people as an e-mail attachment.

Describe the process of sending an e-mail with an attachment to the people on a mailing list.

.....

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.....

.....

(6)

(Quality of Written Communication: 3 marks)

(Total 11 marks)

Q2

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Leave blank

3. At the moment when an item is sold at the refreshment kiosk, the item code is keyed in using a conventional keypad. During busy periods this method is too slow and queues develop.

(a) Recommend a more suitable input device. Explain how this device works.

Device

How it works

.....

.....

(3)

(b) Here is part of the spreadsheet used to maintain stock records.

	A	B	C	D	E	F	G	H
1	Item	Cost price (£)	Selling price (£)	Number in stock	Re-order level	Re-order Qty	Supplier code	Reorder?
2	Choc-ice	0.60	1.50	267	300	2000	KL43	Y
3	Cola (can)	0.33	0.80	476	450	3000	FG27	N
4	Orange (can)	0.33	0.80	425	450	3000	FG27	Y
5	Crisps (plain)	0.27	0.72	662	600	5000	GD68	N

Formulae have been entered in Column H to indicate whether an item needs reordering.

Write down the formula that has been entered in cell H2.

.....

(6)

Q3

(Total 9 marks)



4. The theatre produces the *Friends' Newsletter* internally.

(a) Here is the first draft of the *Friends' Newsletter*.

Friends' Newsletter May 2005

Welcome to the latest edition of the newsletter.

We have some very exciting performers appearing in the next three months and so that you can enjoy as many performances as possible we have some incredible offers for you.

Prices for first night performances have been reduced by an extra 10% for all of the shows in June. So come along and see *The Pirates of Penzance* on 13th June, *The Hoax* on 20th June and *Wonderland* on 27th June.

There have been some major changes to the theatre bar area over the last few weeks. The whole area has been completely redecorated and there is now much more seating available. In addition a much wider range of refreshments have been introduced. To celebrate the refurbishment all bar prices will be reduced by 50% for the opening nights of all shows in June.

Remember that you can visit our website to get up-to-the minute information on all forthcoming attractions.

Adding pictures is one way to make the newsletter more appealing.

Give **two** other ways, and state how they make the newsletter more appealing.

1

.....

.....

.....

2

.....

.....

(4)



Leave blank

(b) The theatre wishes to include photographs of productions in the newsletter.

Describe the process of including a photograph in the newsletter.

.....
.....
.....
.....
.....

(3)

Q4

(Total 7 marks)

5. People may choose to join the 'Friends of Herstham Community Theatre' using the theatre's website.

Here is a partially designed data capture form.

Complete the design of the form.

Marks will be awarded for layout, functionality and ease of use.

Forename	<input type="text"/>
Surname	<input type="text"/>
Street	<input type="text"/>
Town	<input type="text"/>

Q5

(Total 5 marks)

TOTAL FOR SECTION B: 43 MARKS



SECTION C

Attempt ALL questions using the spaces provided.

1. (a) Draw a diagram to show how these components are connected in an ICT system.

Process
Input
Output
Backing Store

(3)

- (b) There are two types of memory, random access memory (RAM) and read only memory (ROM).

- (i) Give **one** use for RAM.

.....
.....

(1)

- (ii) Give **one** use for ROM.

.....
.....

(1)

- (iii) Describe the differences between RAM and ROM.

.....
.....
.....
.....
.....

(3)

(Total 8 marks)

Q1

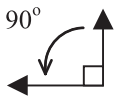


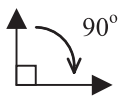
BLANK PAGE



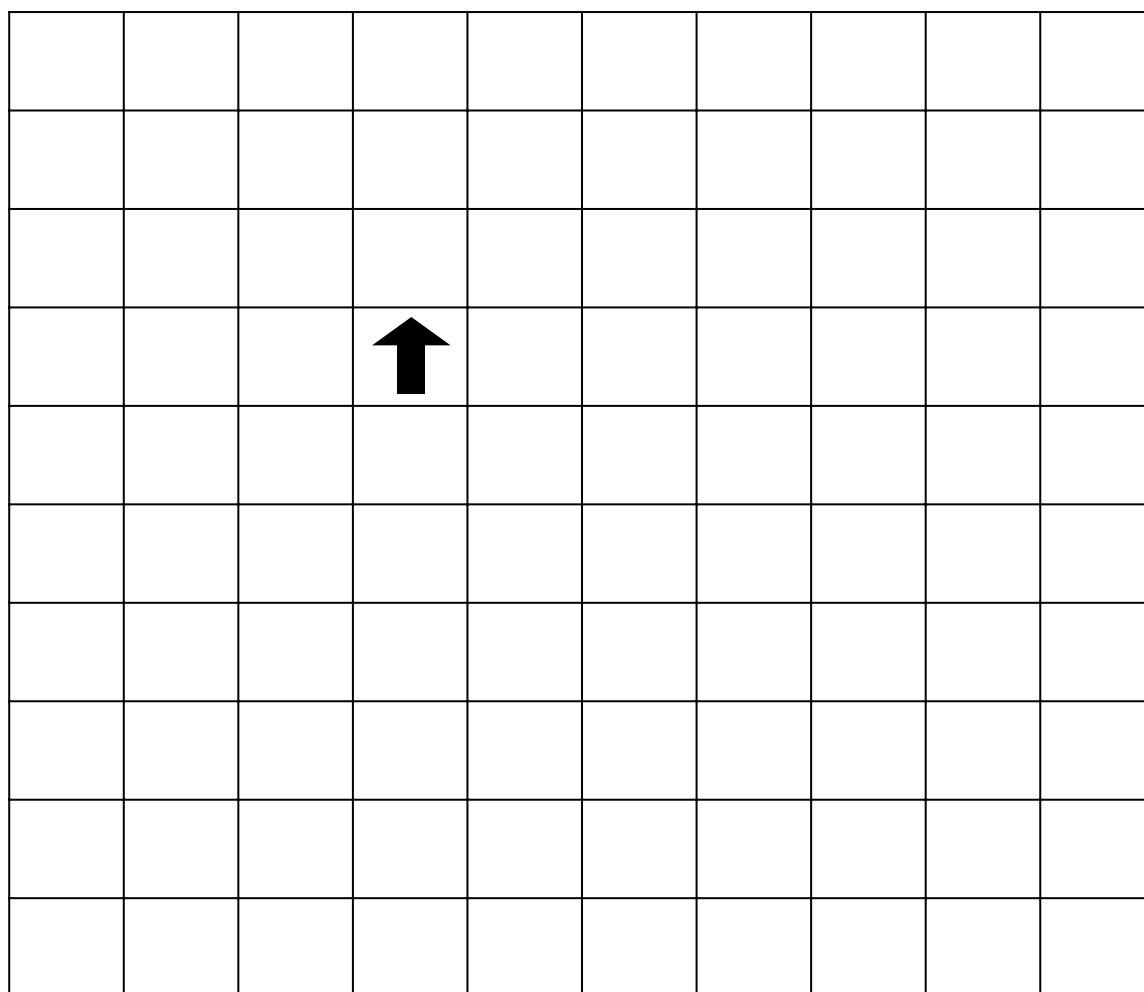
N 2 1 1 8 8 A 0 1 5 2 4

2. A school teaches the logic of programming using a drawing package. Here are some of the instructions to move the arrow around the grid:

L90 – turns the arrow 90° to the left 

R90 – turns the arrow 90° to the right 

F2 – moves the arrow forward two spaces



(a) This algorithm moves the arrow around the grid.

```
Repeat 4
F2
R90
F2
R90
F2
L90
End Repeat
```

Draw the path of the arrow as the instructions are followed.

(4)



Leave
blank

(b) Write the most efficient instructions to draw a square where each side is three spaces long.

.....
.....
.....
.....
.....

(3)

(Total 7 marks)

Q2

3. Eastmoreland swimming pool uses sensors to maintain a comfortable water temperature. The sensors provide feedback to a computer which can turn the water heater on and off. The temperature needs to be kept between 24°C and 28°C.

Draw a flowchart to describe this process using appropriate symbols.

Q3

(Total 4 marks)



Leave blank

4. Each night Oakleaf Bank, Longford Branch, takes a copy of all the data on its system and sends it to Head Office where it is stored in a fireproof safe.

(a) Describe why they do this.

.....
.....
.....
.....
.....

(3)

(b) The bank is thinking of closing down all its branches and moving entirely into Internet banking.

Discuss the impact of taking this decision on the staff and customers of Oakleaf Bank.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

(4)

(Total 7 marks)

Q4



Leave blank

5. Mr Khan is buying a computer for his son Peter who is 12 years old. The computer will be connected to the Internet.

Peter is a keen golfer. He wants to use the computer to pursue this hobby.

(a) Describe **two** ways the Internet can help Peter do this.

1

.....

2

.....

(4)

(b) (i) Describe the concerns that Mr Khan may have in giving Peter access to the Internet.

.....

.....

.....

.....

(4)

(Quality of Written Communication: 3 marks)

(ii) State **two** actions that Mr Khan can take to reduce his concerns.

1

.....

2

(2)

(Total 13 marks)

Q5



6. The pupils at a secondary school are studying the weather. They want to find out the temperature, wind speed and wind direction every hour.

They have set up some data logging equipment on the roof of the science block.

(a) (i) State the type of software that would be used to analyse the data collected.

.....
(1)

(ii) Give **two** features of the software that make it suitable for the purpose.

1

.....

2

.....

(2)

(b) The school also provides equipment to monitor rainfall.

Describe what else the pupils must consider when monitoring rainfall.

.....

.....

.....

(2)



Leave blank

(c) Here is a table showing some of the rainfall data collected by the pupils.

	A	B	C	D	E	F	G	H	I	J
1	Week Beginning	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Total	Average
2	04/10/04	2.2	2.4	2.7	0.2	0.0	0.3	0.4	8.2	
3	11/10/04	0.3	0.5	0.5	2.6	0.8	1.2	1.4	7.3	
4	18/10/04	0.0	0.4	0.2	0.8	1.8	1.5	1.2	5.9	
5	25/10/04	1.4	4.0	1.3	2.1	1.5	0.0	0.0	10.3	
6										

(i) Write down the formula that would be entered in cell J2 to calculate the average daily rainfall for the first week.

.....
(1)

(ii) The pupils need to produce a graph/chart that shows the percentage of the first week's rainfall on each day.

List the cells that should be selected to produce this graph/chart.

.....

State the most appropriate type of graph/chart to use.

.....

(2) **Q6**

(Total 8 marks)



Leave
blank

8. (a) List **four** functions of an operating system.

1

.....

2

.....

3

.....

4

.....

(4)

(b) Describe **two** benefits of a graphical user interface (GUI) compared with a command line interface.

1

.....

.....

2

.....

.....

(4)

Q8

(Total 8 marks)

TOTAL FOR SECTION C: 63 MARKS

TOTAL FOR PAPER: 126 MARKS

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