

Candidate Name	Centre Number	Candidate Number
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## GCSE

178/03\*265/02

# INFORMATION AND COMMUNICATION TECHNOLOGY PAPER 1 (SHORT COURSE) INFORMATION AND COMMUNICATION TECHNOLOGY Higher Tier

P.M. TUESDAY, 19 May 2009

1½ hours

Examiner's Use Only		
Question	Maximum Mark	Mark Awarded
1	4	
2	2	
3	8	
4	9	
5	5	
6	14	
7	4	
8	6	
9	3	
10	3	
11	4	
12	18	
<b>Total Mark</b>	<b>80</b>	

### INSTRUCTIONS TO CANDIDATES

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet. Where the space is not sufficient for your answer, continue the answer at the back of the book, taking care to number the continuation correctly.


### INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part-question.

Answer **all** questions.

1. Complete the table below saying which is *data*, which is *information* and which is *knowledge*. [4]

The first one is done for you.

You were travelling at 31 mph and you have exceeded the 30 mile an hour speed limit.	<b>KNOWLEDGE</b>
The athlete who ran the race in 1 min and 15 seconds is the fastest.	
	
1 min 20 seconds 1 min 15 seconds	
The athletes times are sorted into order 1 min 15 seconds 1 min 20 seconds	

/4

2. Data is entered into a computer using **MICR** and **OCR**.

- (a) Tick (✓) **one** box to show which is a suitable example of the use of **MICR**. [1]

	<b>Tick (✓) one box only</b>
Scanning pictures	
Reading bank cheques	
Magnetic games	

- (b) Tick (✓) **one** box to show which is a suitable example of the use of **OCR**. [1]

	<b>Tick (✓) one box only</b>
Scanning postcodes	
Scanning barcodes	
Opticians counter records	

/2

3. The manager of Newland Health Centre is using wordprocessing software to design a flyer to advertise its opening times.  
The first draft of the flyer is shown below.

<p>Newland Health Centre</p> <p>New opening times Monday to Friday 8:00 a.m. to 6:30 p.m.</p> <p>Closed Saturday and Sunday We offer you good facilities and good patient care</p>
--

- (a) Identify a mistake on the flyer. .... [1]
- (b) State which feature of the wordprocessing software could be used to find a similar word to 'good'. [1]

- (c) The Manager has improved the flyer. The improved version is shown below.

<p><b><u>Newland Health Centre</u></b></p> <p>New opening times Monday to Friday 8:00 a.m. to 6:30 p.m.</p> <p><i>Closed Saturday and Sunday</i></p> <p>We offer you good facilities and excellent patient care</p>
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- Give **two other** features of the wordprocessing software which have been used to improve the flyer. [2]

- (d) Complete the table below by giving a suitable example of how each type of software could be used in the Health Centre. Give distinctly different examples in each case. [4]

Type of software	Example of use in Health Centre
Database	
Computer Control	
Spreadsheet	
Presentation Software	

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4. A local drama group uses a database to store details of cast members. Part of this database is shown below.

Membership No.	Lastname	Firstname	Speciality	Gender	Date of Membership
090	Davies	Sara	Singer	F	12/07/07
091	Evans	Mair	Dancer	F	14/03/07
092	Jones	Kerry	Musician	F	05/21/08
093	Khan	Abu	Singer	M	05/05/05
094	Phillips	James	Dancer	M	18/11/06
095	Rogers	Daniel	Musician	M	12/12/04
096	Carter	Eliza	Dancer	F	17/10/07

- (a) State the purpose of the 'keyfield'.

[1]

.....

- (b) The organiser wants to find the details of all female dancers. Write down the *field* and the *search* data needed to get this data from the database. [2]

Field	Logical operator	Search criteria

- (c) When the organiser was typing in the data he made a mistake. Identify the mistake, describe how it could have happened and describe a method of preventing the mistake. [3]

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- (d) Give a suitable validation technique which could be applied to the gender field. [1]

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- (e) Give **two** advantages of keeping data on a computer. [2]

**Advantage 1** .....

.....

**Advantage 2** .....

.....



5. A football club records details of its income in a spreadsheet. Part of this spreadsheet is shown below.

	A	B	C	D	E	F	G	H	I	J
1	Income (£)	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	TOTAL
2	Ticket sales (£)	63000	63000	63000	63000	65000	70000	61000	59000	507000
3	Fundraising (£)	4000	4000	2000	100	150	180	200	300	10930
4	Sponsors (£)	2000	2000	2000	2000	2000	2000	2000	2000	16000
5	Advertising (£)	1000	1000	1000	1000	1000	1000	1000	1000	8000
6	Programme sales (£)	180	150	100	160	180	140	120	100	1130
7	<b>TOTAL INCOME (£)</b>	<b>70180</b>	<b>70150</b>	<b>68100</b>	<b>66260</b>	<b>68330</b>	<b>73320</b>	<b>64320</b>	<b>62400</b>	<b>543060</b>

(a) Which cell shows the *most ticket sales* in any one month? ..... [1]

(b) Which of the following formulas could be used to give the total ticket sales in Cell J2? [1]

- A =B2+C2+D2+E2+F2+G2+H2+I2  
 B =B2+C2+D2+F2+G2+H2+I2  
 C =SUM(B2:I2)  
 D =TOTAL COLUMN J

.....

(c) Give a formula which could be used to give the TOTAL INCOME for all months in Cell J7. [1]

= .....

(d) Spreadsheets are sometimes used as simulation models.  
 Complete the definition of a simulation model and give an example. [2]

**A simulation model is a program which** .....

.....

**Example** .....



6. A bookshop uses a Point of Sale (POS) terminal to sell books.

(a) Give **two devices** used for *input* at the POS. [2]

.....

(b) Give **two devices** used for *output* at the POS. [2]

.....

(c) Books have barcodes which contain items of data.

Give **two** items of data *encoded* in the barcode. [2]

.....

(d) Point of Sales (POS) systems allow shops to offer extra services to customers.

Give **two other** services shop managers can offer at the POS. [2]

**Service 1** .....

**Service 2** .....

(e) Briefly describe how books could be re-ordered in an **automatic** computerised stock control system. [2]

.....

.....

.....

(f) The *bookshop* also sells books online, using the Internet.

Give **two** advantages of buying a book online. [2]

**Advantage 1** .....

.....

**Advantage 2** .....

.....

(g) Other than *selling books*, give **two other different** uses of the Internet for the bookshop. [2]

**Use 1** .....

.....

**Use 2** .....

.....

7. Banks use automatic teller machines (ATMs) commonly called *cashpoints*.

(a) Give **two** types of cards which could be used at a cashpoint. [2]

**Card 1** .....

**Card 2** .....

(b) Give **two** services that can be obtained from the cashpoint. [2]

**Service 1** .....

**Service 2** .....

4

8. The introduction of computers has changed the way people work.

(a) Describe **one** advantage and **one** disadvantage of ‘teleworking’ *for employees*. [2]

**Advantage** .....

.....

**Disadvantage** .....

.....

(b) Describe **two other** different effects the use of computers has had on working practices. Illustrate your answers with suitable examples. [4]

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6

9. Give **three** features of a Graphical User Interface (GUI). [3]

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.....



10. A computer uses the following control ports to monitor and control a central heating system.

- If the temperature gets too hot, the heater will turn off and a fan will come on.
- If the temperature gets too cold, the heater will come on and the fan will turn off.



**Input bits**

1 - temperature sensor

**Output bits**

3 - heater on / off control

4 - fan on / off control

*If it gets too hot the input bit is set to 1, the relevant corresponding output bits would also change.*

**Write down the display of bits in the following situations.**

(a) The temperature is too cold. [1]



(b) The temperature is too hot. [1]



(c) Give an example of how a *digital pressure sensor* could be sensibly used in the home. [1]

.....



11. People are worried about the everyday use of computers.  
Give **two** possible health hazards in using computers and a different method of preventing each. [4]

**Health hazard 1** .....

**Prevention** .....

**Health hazard 2** .....

**Prevention** .....



12. The following advertisement appeared in a local newspaper.

## Home Users Computer Fair

- See the latest laptops and desktops
- Get information on the latest broadband and wireless technology
- See the latest video conferencing hardware in action
- Parents are you worried about the dangers of your children using the Internet?

**Experts in all these areas  
will be available to talk to you**

- (a) Describe how the following new technologies would be of benefit to the home user. [4]

**Broadband** .....

.....

.....

.....

.....

**Wireless** .....

.....

.....

.....

.....

(b) Other than a computer, state the *specific* extra hardware needed for video conferencing. [2]

.....  
.....

(c) Describe, using suitable different examples, the benefits video conferencing can bring to the home user. [4]

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

(d) Parents should take measures to prevent misuse of their home computer.

(i) Describe in detail how the following could be prevented.

**Hacking**

[2]

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

**Spreading of a virus**

[2]

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.....  
.....  
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