

Centre Number						Candidate Number				
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Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Question	Mark
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TOTAL	



General Certificate of Secondary Education
January 2012

Information and Communication Technology (Full Course)

45201

Written Paper

Friday 13 January 2012 9.00 am to 10.30 am

You will need no other materials.
You may use a calculator.

Time allowed

- 1 hour 30 minutes

Instructions

- Use black ink or black ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **fourteen** questions.
- Answer **all** questions in Sections A and B. In Section C, answer **either** Question 14 **or** Question 15, which should be answered in continuous prose. In this question you will be marked on your ability to:
 - use good English
 - organise information clearly
 - use specialist vocabulary where appropriate.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 120.
- You are reminded of the need for good English and clear presentation in your answers.



J A N 1 2 4 5 2 0 1 0 1

Section A

Answer **all** questions in the spaces provided.

1

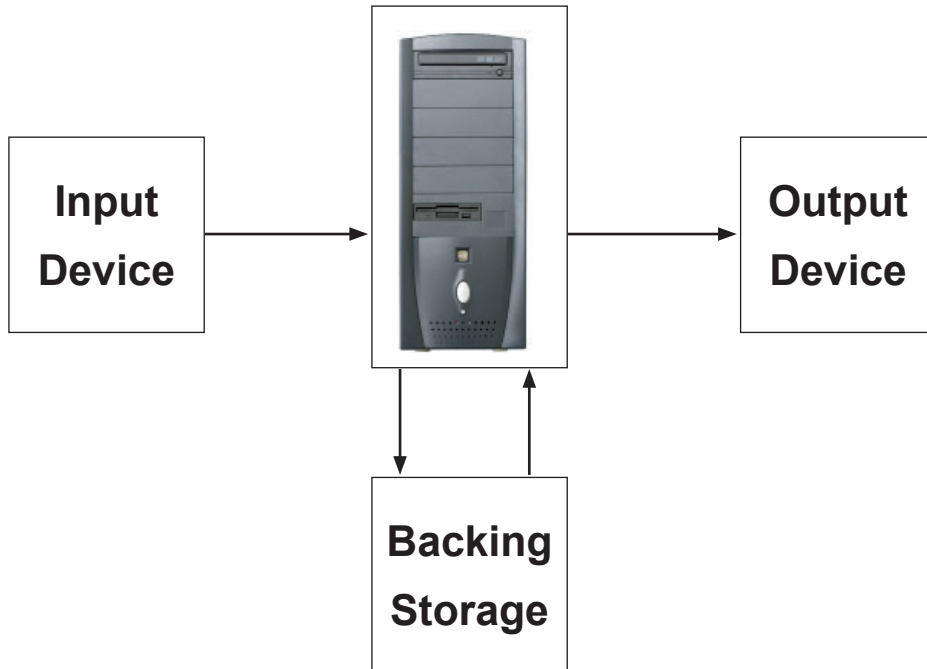


Image ©Thinkstock

The diagram above represents the layout of a general purpose home desktop computer.

- 1 (a)** Name **two** input devices that you would expect to be used with a general purpose home desktop computer.

Input device 1

Input device 2

(2 marks)

- 1 (b)** Name **two** output devices that you would expect to be used with a general purpose home desktop computer.

Output device 1.....

Output device 2.....

(2 marks)

- 1 (c)** Name **two** backing storage devices that you would expect to be used with a general purpose home desktop computer.

Backing storage device 1

Backing storage device 2

(2 marks)



- 1 (d)** Tick **one** box to show which of the following you would expect to find inside a desktop tower.

	Tick one box only
PDA	
Central Processing Unit	
MICR reader	
Magnetic strip reader	

(1 mark)

- 1 (e)** The desktop tower will also contain internal memory such as RAM and ROM. Tick **one** box to show which of the following is true.

	Tick one box only
Both RAM and ROM are volatile	
Neither RAM nor ROM are volatile	
RAM is volatile, ROM is not volatile	
ROM is volatile, RAM is not volatile	

(1 mark)

- 1 (f)** Name **one** other device that you would expect to find inside a desktop tower.

.....

(1 mark)

- 1 (g)** A home desktop computer will use software as well as hardware. What is meant by the terms hardware and software?

Hardware

.....

Software

.....

(2 marks)

11

Turn over ▶



2 (a) For each row of the table below, choose the letter from **A, B, C, D, E** or **F** which best matches the description.

- A** Broadband
- B** Dial-up modem
- C** e-mail server
- D** File server
- E** Mobile device
- F** Print server

	Description of network device	Letter
(i)	A computer that provides workstations on a network with controlled access to a range of shared resources	
(ii)	A device that enables a computer to transmit data over telephone lines	
(iii)	A fast communications network in which the bandwidth can be divided and shared by multiple simultaneous signals	

(3 marks)

2 (b) What do the abbreviations LAN and WAN stand for?

LAN

WAN

(2 marks)

2 (c) Describe the difference between a LAN and a WAN.

.....

(2 marks)

2 (d) Tick **one** box to show which of the following best describes the role of an ISP.

	Tick one box only
A company that installs LANs or WANs	
A company that offers free Internet access to all	
A company that sells reduced-rate phones with Internet access	
A company that offers Internet access to customers for a fee	

(1 mark)

8



3 (a) A USB memory stick is an increasingly popular storage item. Give **two** reasons why it is taking over from more traditional storage media.

Reason 1

.....

Reason 2

.....

(2 marks)

3 (b) The size of memory is very important in most ICT applications. Put the following units of memory in order of size from the **smallest to the largest**.

Byte, Gigabyte (Gb), Kilobyte (Kb), Megabyte (Mb), Terabyte (Tb)

1

2

3

4

5

(3 marks)

3 (c) Give **one** reason why some files need to be compressed before transferring them.

.....

.....

(1 mark)

6

Turn over for the next question

Turn over ▶



- 4 As part of a school Enterprise Day, a group of students are planning to sell a range of printed T-shirts. Below is a spreadsheet that they have set up to help them model possible profit or loss.

	A	B	C	D
1	12/02/2012			
2				
3	Expenditure			
4		Unit Cost	Number bought	Cost
5	T-shirt (small)	£2.00	50	£100.00
6	T-shirt (medium)	£2.50	100	£250.00
7	T-shirt (large)	£3.00	150	£450.00
8	Total		300	£800.00
9				
10	Cost of printing each T-shirt (any size)			£1.00
11				
12		Total spent		£1,100.00
13				
14	Income			
15		Selling price	Number sold	Cost
16	T-shirt (small)	£4.00	40	£160.00
17	T-shirt (medium)	£4.50	80	£360.00
18	T-shirt (large)	£5.00	125	£625.00
19				
20		Total income		£1,145.00
21				
22		Profit/Loss		£45.00

- 4 (a) Which cell contains the text **Income**?

(1 mark)

- 4 (b) Tick **one** box to show which word describes the data in cell A1.

	Tick one box only
Currency	<input type="checkbox"/>
Date	<input type="checkbox"/>
Formula	<input type="checkbox"/>
Number	<input type="checkbox"/>

(1 mark)



4 (c) (i) Tick **one** box to show which of the following is the formula used in cell D5.

	Tick one box only
=B5+C5	
=B5-C5	
=B5*C5	
=B5/C5	

(1 mark)

4 (c) (ii) Tick **one** box to show which of the following formula is used in cell D22.

	Tick one box only
=D12+D20	
=D20+D12	
=D12-D20	
=D20-D12	

(1 mark)

4 (d) Which **one** of the following is **not** a common function available within a spreadsheet?

	Tick one box only
AVERAGE	
AVERAGEUP	
COUNT	
RANK	

(1 mark)

4 (e) Explain the difference between the ROUND and the ROUNDUP functions available within spreadsheets. You may find it helpful to give examples.

.....

.....

.....

(2 marks)

4 (f) Explain how the students could use their model to investigate ways of increasing their profit.

.....

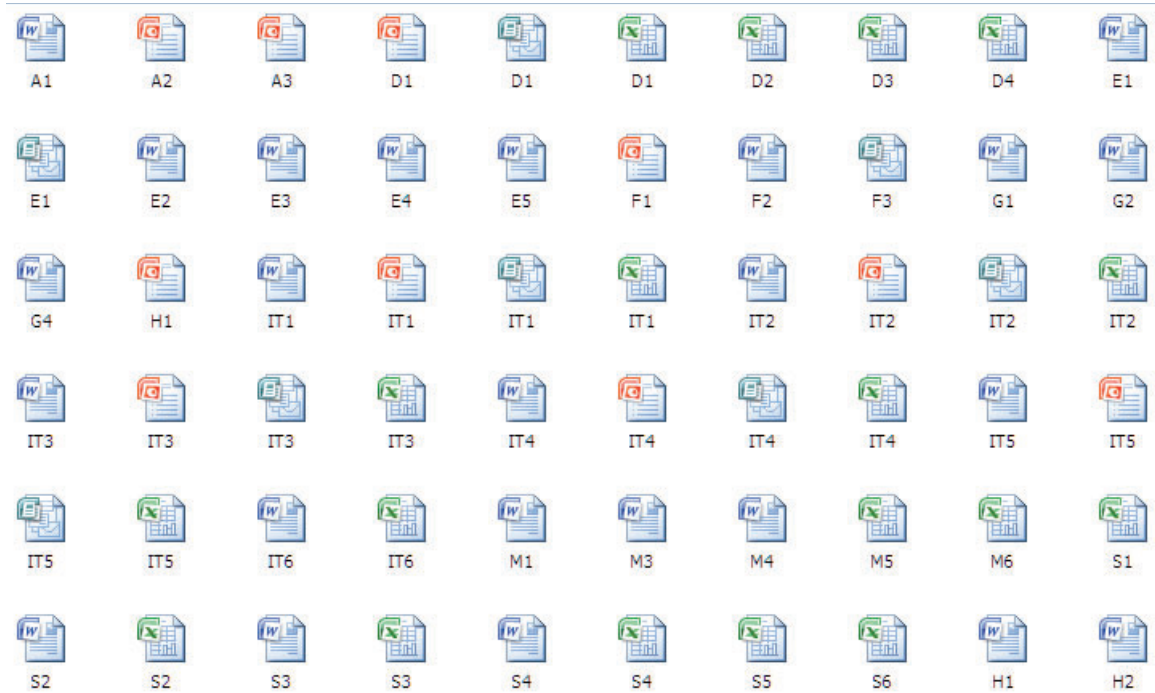
.....

.....

(2 marks)



5 A Year 10 student saves all his school work on the school network. Part of the area where his work is saved is shown below. It is becoming increasingly difficult for him to find a piece of work that he needs.



5 (a) Give **two** pieces of advice to help him to organise the work he has saved to make it easier to find.

Advice 1

.....

Advice 2

.....

(2 marks)

5 (b) At school and at home the student uses a Graphical User Interface (GUI). Give **three** features of a GUI.

Feature 1

.....

Feature 2

.....

Feature 3

.....

(3 marks)

5



6 A list of common features that will appear in most software packages is given below.

- | | | |
|---------------------------|------------------------------|--------------------|
| A Crop | G Full justification | M Resize |
| B Cut and paste | H Headers and footers | N Undo |
| C Drag and drop | I Help | O Wizard |
| D Find and replace | J Orientation | P Wrap text |
| E Font size | K Page numbering | Q Zoom |
| F Font style | L Print preview | |

From the list above, choose the software feature that best matches the description below. Write the letter for your answer in the box provided.

6 (a) Whether a page is portrait or landscape

Answer

(1 mark)

6 (b) Whether text is bold, in italics or underlined

Answer

(1 mark)

6 (c) A utility within an application that is used to simplify or speed up a particular task

Answer

(1 mark)

6 (d) Having text on a page that continues around an image, picture or object

Answer

(1 mark)

6 (e) Used to remove any unwanted parts of a picture or image

Answer

(1 mark)



7 H&L Games rents computer games to its members. They have produced the data capture form below to collect information from their members. They planned to produce a professional looking form that was easy to use.

H&L Games

Please complete this registration form and send it back to the address given below.

Last Name

First name

Address 1

Address 2

Postcode

Telephone Number

Title

Favourite types of game

7 (a) Give **three** reasons why this data capture form is not fit for purpose.

Reason 1

.....

Reason 2

.....

Reason 3

.....

(3 marks)



7 (b) Tick **one** box to show which method of data capture would be the most suitable for collecting information about the games as they are rented out.

	Tick one box only
Bar codes	
Chip and Pin	
Questionnaire	
Voice recognition	

(1 mark)

7 (c) H&L Games is planning to send details of the latest games available to its members electronically. Give **one** way in which these details could be sent.

.....

(1 mark)

7 (d) The manager at H&L Games is concerned about possible health issues with the increasing use of ICT systems within the shop. Give **two** possible health issues that could arise from the use of ICT systems within the shop.

Health issue 1

.....

Health issue 2

.....

(2 marks)

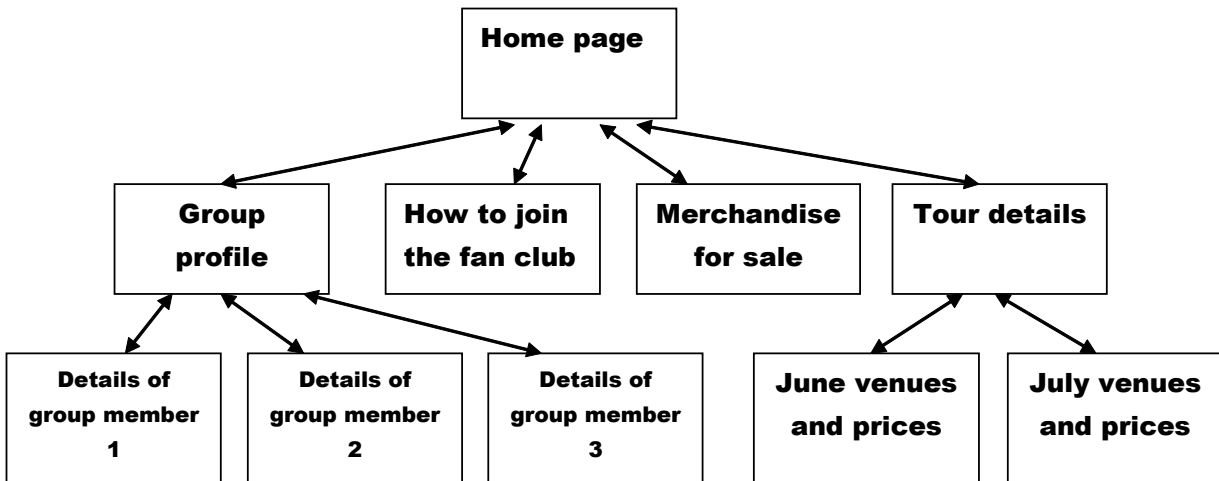
7

Turn over for the next question

Turn over ▶



8 A band has employed a web designer to create an exciting and professional website for them. The outline plan for their website is given below.



Explain **why** the following features of web design software could be used to create the website for the band.

8 (a) (i) Master page

.....

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(2 marks)

8 (a) (ii) Navigation bar

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.....

(2 marks)

8 (a) (iii) Counters

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.....

.....

(2 marks)

8 (b) Give **one** more feature specific to web design software.

.....

.....

(1 mark)

7



9 Operating systems are an essential part of any computer system.

9 (a) Tick **one** box to show if an operating system is hardware or software.

	Tick one box only
Hardware	
Software	

(1 mark)

9 (b) The following are file operations: copy, delete, load, rename and save. Which of these file operations is carried out under the control of the operating system?

	Tick one box only
All of them	
None of them	
Only load and save	
Only copy and delete	

(1 mark)

9 (c) Which **one** of the following is the best description of a real time operating system?

	Tick one box only
The processing of data quickly	
The processing of data during regular working hours	
The processing of data immediately upon receipt	
The processing of data 24 hours a day	

(1 mark)

9 (d) Other than real time, name **one** type of operating system.

.....
(1 mark)

4

Turn over ►



10 InFashion is a shop selling a wide range of clothes and accessories. They are planning to computerise their existing stock filing system. The following are some of the stages in the system life cycle used in the production of the new system.

Feasibility study	Testing	Documentation
Analysis	Implementation	Evaluation
Design	User training	Maintenance

10 (a) At which of these stages does each of the following take place?

10 (a) (i) Collecting information about how the existing system works

.....
(1 mark)

10 (a) (ii) Producing a plan for testing the system

.....
(1 mark)

10 (a) (iii) When the system is up and running, the routine updating of files such as adding new stock and stock prices

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(1 mark)

10 (a) (iv) Entering test data into the new stock filing system

.....
(1 mark)

10 (a) (v) Reviewing the effectiveness of the system

.....
(1 mark)

10 (a) (vi) Listing the desired outcomes and performance criteria

.....
(1 mark)

10 (b) Name **two** ways of collecting information about how the existing system works.

Way 1.....

Way 2.....

(2 marks)



10 (c) Explain what is meant by the system life cycle being an 'iterative review process'.

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(2 marks)

10

Turn over for Section B

Turn over ▶



Section B

Answer **all** questions in the spaces provided.

11 DevasPrint is a small publishing company where each employee works from home rather than from a central office.

11 (a) Tick **two** boxes to show which of the following are **advantages** for the employees of working from home rather than from a central office.

	Tick two boxes only
They will save time by not having to travel to work each day	
They will have a faster PC in their office than at home	
They will be in less danger from hackers	
They will be able to work much more flexible hours	
They will be able to go to the supermarket at lunchtime	

(2 marks)

11 (b) Give **two** possible **disadvantages** for the employees of working from home rather than from a central office.

Disadvantage 1

.....

Disadvantage 2

.....

(2 marks)

11 (c) Even though the staff of DevasPrint work from home, they must still follow the regulations of Copyright law, the Data Protection Act and the Computer Misuse Act.

Which of the above Acts or law would be broken if the following happened?

11 (c) (i) DevasPrint bought just **one** copy of the Desktop Publishing software, then made a copy for each member of staff to use on their own home computer.

Act or law that would be broken

(1 mark)

11 (c) (ii) Staff from DevasPrint use any suitable images from the Internet for their documents without asking permission or paying for them.

Act or law that would be broken

(1 mark)



11 (c) (iii) Staff from DevasPrint gain unauthorised access to data on another publishing company's computer system.

Act or law that would be broken (1 mark)

11 (d) Describe the possible advantages and disadvantages of DevasPrint using online storage for images.

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(5 marks)

Turn over for the next question

Turn over ▶



- 12** A health club stores information about its members in a database table. Part of the database table is shown below.

Member Code	Last Name	Other Name	Gender	House Number	Postcode	Date of Birth	Member Type	Member Fee
GY0340	Dobson	Jon	M	37	LN1 7BZ	22/12/1949	SoP	£21
GY0789	Smith	Peter	M	4	LN3 1CC	14/08/1985	SP	£31
GY0986	Adams	David	M	45	LN3 1BL	21/01/1976	SP	£31
GY1003	Adams	Ann	F	45	LN3 1BL	04/08/1996	JP	£19
GY1029	Hall	Sue	F	17	LN2 7BB	31/12/1997	JP	£19
GY1100	Chang	Liu	F	9	LN1 7AD	09/11/1990	SP	£31
GY1104	Kelly	Jane	F	33	LN2 8CD	28/06/1980	SP	£31
GY1111	Quinn	Alex	M	122	LN5 2CH	14/07/1998	JoP	£12
GY1123	Vento	Alan	M	1	LN6 1GN	10/11/1984	SP	£31
GY1198	Datta	Daniel	M	49	LN9 6FC	12/02/1956	SoP	£21
GY1201	Datta	Vera	F	49	LN9 6FC	19/04/1958	SoP	£21

- 12 (a)** How many records are shown in this database table? (1 mark)

- 12 (b)** Why would the **Last Name** field **not** be suitable to use as the key field?

.....

(1 mark)

- 12 (c)** The data entered into the **Member Type** field has been coded as follows:

JoP– Junior off Peak JP– Junior Peak SoP– Senior off Peak SP– Senior Peak

Give **one** advantage of coding data.

.....

(1 mark)



12 (d) When the database was set up, the **House Number** field was formatted as a text field. Explain why this is a suitable format in the table given.

.....
.....

(1 mark)

12 (e) Write the **Member Code(s)** of the members whose records are selected using the following search criteria:

12 (e) (i) Search criteria: **Postcode** equals LN3 1BL

Record(s) selected

(1 mark)

12 (e) (ii) Search criteria: **Date of Birth** is greater than 01/01/1996

Record(s) selected

(1 mark)

12 (e) (iii) The * used in the following search criteria is a wildcard.

Search criteria: **Last Name** equals D*

Record(s) selected

(1 mark)

Question 12 continues on the next page

Turn over ▶



12 (f) Explain how data validation could be used to improve the accuracy of information being input into this database.

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(5 marks)

12



Turn over for the next question

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ANSWER IN THE SPACES PROVIDED**

Turn over ▶



13 People are increasingly using the Internet to access a very wide range of ICT systems and applications, such as Internet auction sites, online banking and social networking sites.

13 (a) Tick **two** boxes to show which of the following are **disadvantages** of buying from an Internet auction site compared with buying the same item from a high street shop.

	Tick two boxes only
The item will be cheaper as there is no postage	
The items always cost a lot more	
The item you buy will usually take longer to arrive	
You cannot inspect in detail the item you are buying	
You have to pay VAT on most items	

(2 marks)

13 (b) Increasing numbers of people are using online banking. Give **two advantages** to customers of using online banking compared to using a bank on the high street.

Advantage 1.....

.....

.....

Advantage 2.....

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.....

(2 marks)

13 (c) Describe what is meant by a social networking site.

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(3 marks)



13 (d) Describe a range of software and hardware features that are used to help people with disabilities to access ICT systems.

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(5 marks)

12

Turn over for Section C

Turn over ▶



Section C

You should answer **either** Question **14** or Question **15**, but **not both**.

You will be marked on your ability to use good English, to organise information clearly and to use specialist vocabulary where appropriate.

EITHER

14 Discuss how emerging technologies affect the way in which people and organisations operate and work together.

This space is available for planning your answer if you wish to use it.

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(12 marks)

12

Turn over ▶



OR

15 Discuss a range of online hazards. Describe possible methods of avoiding some of these.

This space is available for planning your answer if you wish to use it.

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(This area contains horizontal dashed lines for writing.)

END OF QUESTIONS

(12 marks)

12



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