Centre

Candidate Number

cea
Rewarding Learning

General Certificate of Secondary Education
2012
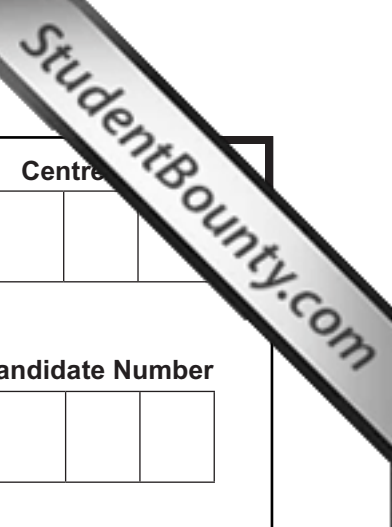
Information and Communication Technology (Full Course)
Unit 3: Understanding ICT Systems in Everyday Use and its Implications for Individuals, Organisations, Society and the Wider World
[GIT31]
FRIDAY 1 JUNE, MORNING

GIT31

TIME
2 hours.

INSTRUCTIONS TO CANDIDATES
Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Write your answers in the spaces provided in this question paper.
Complete in blue or black ink only. **Do not write in pencil or with a gel pen**.
Answer **all fifteen** questions.

INFORMATION FOR CANDIDATES
The total mark for this paper is 180.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
Quality of written communication will be assessed in questions **4(a)**, **5(d)**, **8(b)**, **14(g)(i)** and **14(g)(ii)**.

7543.06**R**

For question 1 insert the appropriate letter in the space provided.

1 **(a)** Select the most appropriate device for inputting a printed photograph into a computer.

    A   Video Camera

    B   Scanner

    C   Tracker Pad

    D   Digital Camera

                      Answer _____ [1]

(b) Touch screens are commonly found in public areas. Select **one** disadvantage of using touch screens.

    A   A lot of training is needed to use them

    B   Sound can interfere with the input of information

    C   The screens can become dirty and difficult to use

    D   A variety of options are always available for the user

                      Answer _____ [1]

(c) From the list below select the output device that produces the lowest quality printouts.

    A   Inkjet Printer

    B   Drum Plotter

    C   Impact Printer

    D   Laser Printer

                      Answer _____ [1]

7543.06**R**

(d) Alan is an architect and wants to print plans of the house he has just designed. Which device would he use?

A   Flatbed Plotter

B   Colour Laser Printer

C   Tracker Pad

D   Graphics Digitiser

Answer _____ [1]

(e) John's laptop has a LCD screen. Expand the acronym LCD.

A   Light Crystal Display

B   Liquid Compact Display

C   Light Compact Display

D   Liquid Crystal Display

Answer _____ [1]

(f) Select an appropriate use of cache memory.

A   To store the most recently used instructions

B   To store data permanently for fast access

C   To store the boot up program for the operating system

D   To store the drivers for peripheral devices attached to the computer

Answer _____ [1]

[Turn over

7543.06**R**

(g) Select **one** reason why HD movies are stored on Blu-ray discs instead of DVD ROM.

    A   Blu-ray discs provide faster access so the movie can be loaded more quickly

    B   Blu-ray discs have a higher storage capacity so store more detail about the movie

    C   Blu-ray discs cannot be edited so the user cannot copy the movie

    D   Blu-ray discs are smaller in size so they can fit Blu-ray players in the TV

Answer _____ [1]

(h) Select the statement that correctly explains the difference between CD ROM and CD-R.

    A   New data can be written to a CD-R but not to a CD ROM

    B   CD ROM has a higher storage capacity than CD-R

    C   New data can be written to a CD ROM but not to a CD-R

    D   CD ROM has a lower storage capacity than CD-R

Answer _____ [1]

(i) All computers contain RAM. Expand the acronym RAM.

    A   Rapid Access Memory

    B   Read Altered Memory

    C   Random Access Memory

    D   Readable Altered Memory

Answer _____ [1]

7543.06**R**

(j) Select the correct definition of the term non-volatile storage.

A Storage that holds data even when the power is switched off

B Storage that loses data when the power is switched off

C Storage used for cache memory

D Storage that is connected to the computer by a cable

Answer _____ [1]

(k) Select the statement that shows the storage devices in order of capacity from lowest to highest.

A CD ROM, DVD ROM, Blu-ray

B Blu-ray, CD ROM, DVD ROM

C DVD ROM, Blu-ray, CD ROM

D Blu-ray, DVD ROM, CD ROM

Answer _____ [1]

(l) Which of the following options contains a feature **not** available when using multimedia presentation software?

A Adding video and hyperlinks

B Adding animation and slide transitions

C Adding sound and filtering data

D Adding action buttons and text formatting

Answer _____ [1]

[Turn over

7543.06**R**

(m) Some presentation packages allow you to create a master slide. What is a master slide?

    A   A slide that all of the other slides in the presentation can be opened from

    B   A slide added at the start of the presentation which contains the title

    C   A slide that stores all of the video and sound files for the presentation

    D   A slide that when edited will update the contents of all slides made from it

Answer _____ [1]

(n) Which of the following options cannot be used to change the sequence in which slides are viewed in a presentation?

    A   Action Buttons

    B   Hyperlinks

    C   Hotspots

    D   Animations

Answer _____ [1]

Total Question 1

2 Read the news article below which was published on the BBC website.

Computer viruses make it to orbit

A computer virus is alive and well on the International Space Station (ISS).

Nasa has confirmed that laptops carried to the ISS in July were infected with a virus known as Gammima.AG.

The worm was first detected on Earth in August 2007 and lurks on infected machines waiting to steal login names for popular online games.

© From BBC News at bbc.co.uk/news

(a) What is a virus?

_____

_____ [2]

(b) What type of virus is Gammima.AG?

_____ [1]

(c) Describe how viruses like Gammima.AG work.

_____

_____ [2]

(d) List **two** possible sources of viruses for any computer system.

1. _____

2. _____ [2]

[Turn over

(e) What law do creators of computer viruses break?

_____ [1]

7543.06**R**

3 Ciara has been asked by her teacher to visit the CCEA website and download the specification for GCSE ICT. The screenshot of Ciara's search is shown below.

(a) What other website is currently open on Ciara's computer?

_____ [1]

(b) The URL for the webpage is www.ccea.org.uk/ict

State what each of the following are within the URL.

(i) www _____ [1]

(ii) ccea.org.uk _____ [1]

(iii) ict _____ [2]

[Turn over

7543.06**R**

(c) Some documents are provided in pdf format. Tick (✓) **two** correct answers about pdf files.

Statement	Tick (✓)
Special software is required to read pdf files	
pdf files can be viewed on a PC but not on any other type of computer	
pdf files can be viewed on computers with different operating systems	
pdf means Portable Document File	

[2]

(d) Teachers have suggested that the website should contain digital videos and podcasts for their use.

(i) Using the list below complete the table by inserting the most appropriate file format for each file.

txt   jpg   rtf   mp3   mp4

File	File Format
Video	
Podcast	
Photographs	

[3]

(ii) Some information is provided in a compressed or zipped file. List **two** features of this file type.
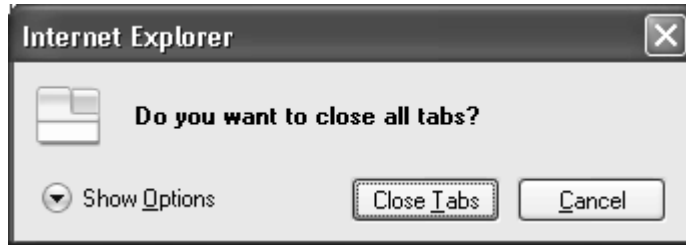
1. _____

2. _____ [2]

(e) When Ciara tries to close the web page the message box below appears.

Internet Explorer

Do you want to close all tabs?

Show Options   Close Tabs   Cancel

Tick (✓) **two** of the following statements which are **TRUE** about a **tab** on a web browser.

Statement	Tick (✓)
A tab can be used to download web pages	
Tabs provide a way of uploading information to a website	
Tabs allow the user to open more than one web page in the browser window	
Tabs provide an easy way of switching between websites	

[2]

[Turn over

7543.06**R**

4 Spacebook is a social networking site. Joan Smyth uses it.

(a) Explain the term social networking and give **three** pieces of advice that will help Joan stay safe online.

Social Networking

_____

_____

Advice 1: _____

_____

_____

Advice 2: _____

_____

_____

Advice 3: _____

_____

_____ [8]

(b) Joan's friend has discovered that an account has been set up for her by someone else. She does not want the account. Give Joan's friend **one** piece of advice on how she could solve this problem.

_____

_____ [1]

Total Question 4

5 John's school uses a LAN and WAN to provide students with ICT facilities.

(a) Expand the following acronyms:

(i) LAN _____ [1]

(ii) WAN _____ [1]

(b) Complete the paragraph below by selecting the appropriate words from the list provided. Use each word only once.

DATA   ACCESS   WORKSTATION

VIRUS   FILESERVER   PERIPHERALS

When using a LAN people can share _____ .

A _____ stores all user _____

and users can log on at any _____ to access

their files. [4]

(c) Match the following Network Terms with the correct definition by inserting the correct letter beside the definition.

Letter	Network Term
a	Computer
b	Router
c	Network Interface Card
d	Switch
e	Protocol
f	Printer

Definition	Letter
A set of rules which define how data is transferred around a network	
A device which allows the LAN to connect to the Internet	
A device which individual computers need to connect to the LAN	
A device which provides a single connection point for a group of computers	

[4]

[Turn over

7543.06**R**

(d) Apart from Usernames and Passwords, name and describe **three other** measures that can be used to protect information systems from misuse or attack.

Measure 1: _____

Description: _____

_____

_____

Measure 2: _____

Description: _____

_____

_____

Measure 3: _____

Description: _____

_____

_____ [6]

7543.06**R**

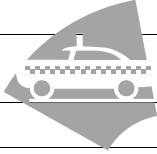**DO NOT WRITE ON THIS PAGE**

(Questions continue overleaf)

6 Cabs4U provide local companies with a taxi service. Companies receive an invoice each month and must pay the Amount Outstanding. This is part of an invoice for Margaret Greenway.

	A	B	C	D	E	F
1			Invoice Cabs4u			
2						
3	Customer Name	*Margaret Greenway*			After Hours Charge (Applies between 00:30 and 06:00)	15%
4	Customer Address	*1 Ivy Road*			VAT	20%
5		*Castledawson*				
6		*BT5 7PT*				
7	Date	*05/05/2012*				
8	Month	*April*				
9						
10	Date	Time	Details		Fare	After Hours Charge	Journey Cost
11	04/04/2012	14:00	City Hotel to Townhall	£ 5.00	No	£ 5.00
12	04/04/2012	18:20	TownHall to Ivy Road	£ 7.70	No	£ 7.70
13	04/04/2012	05:30	Ivy Road to Train Station	£ 8.90	Yes	£ 10.24
14	05/04/2012	17:55	Ivy Road to Airport	£ 82.50	No	£ 82.50
15	06/04/2012	01:00	Ivy Road to 37 Drummond Walk	£ 14.50	Yes	£ 16.68
16	06/04/2012	10:00	Train Station to City Hotel	£ 12.50	No	£ 12.50
17						
18					Total	£ 134.62
19					VAT	£ 26.92
20					Total(including VAT)	£ 161.54
21						
22					Payments Made up to 30th April	£ 125.00
23					Amount Outstanding	£ 36.54

(a) What formatting feature has been used to centre the heading Invoice Cabs4U?

_____ [1]

(b) The spreadsheet contains the data type **text**. List **two** other data types which have been used in this spreadsheet.

1. _____

2. _____ [2]

(c) In the table below place a tick (✓) beside the formula you would expect to find in cell **F18**.

Formula	Tick (✓)
=Sum(F11+F16)	
=F11*F16	
=Sum(F11:F16)	

[1]

(d) Cell **F23** contains a calculation for the amount outstanding. Write down the **two** cell references which make up the formula for cell F23.

Formula = (_____ – _____)   [2]

(e) An After Hours Charge of 15% is added onto taxi fares if needed.

(i) Why has Margaret been charged the After Hours Charge on two of her taxi fares?

_____

_____ [1]

(ii) When calculating the After Hours Charge an absolute cell reference was used.

What is an absolute cell reference?

_____

_____ [2]

[Turn over

7543.06**R**

(iii) Formulae have been used in cells F13 and F19.

Write down the absolute cell references that would be used in these formulae.

F13 _____ [1]

F19 _____ [1]

7543.06**R**

7 Anne sells handmade cards in her spare time. She uses the database structure shown below to keep track of her customers and orders.

CustomerTable

Field Name	Data Type
CustomerID	AutoNumber
Title	Text
Surname	Text
Forename	Text
Address 1	Text
Address 2	Text
Town	Text
County	Text
Post Code	Text

OrderTable

Field Name	Data Type
OrderID	AutoNumber
CustomerID	Number
CardType	Text
Quantity	Number

CustomerID is the key field in the CustomerTable.

(a) Why is a key field needed in the CustomerTable?

_____ [1]

(b) Apart from the data types used in CustomerTable and OrderTable, identify **two other** data types which can be used when setting up a database.

1. _____ [1]

2. _____ [1]

[Turn over

7543.06**R**

Anne wants to set up a validation check to ensure Quantity in the OrderTable can only be between 1 and 50.

(c) **(i)** Place a tick (✓) beside the correct validation rule in the table below.

Validation Rule	Tick (✓)
>=0 AND <=50	
>0 AND <50	
>=1 AND <=50	
>1 AND <=50	

[1]

(ii) Name **two** other types of validation you can use to help reduce errors when entering data into a database.

1. _____

2. _____ [2]

(d) Anne has created a one-to-many relationship between the CustomerTable and the OrderTable.

Name **one** other type of relationship which can be created in a relational database.

_____ [1]

Anne uses the following data in a lookup list under the field heading CardType.

- Birthday
- Baby Boy
- Baby Girl
- Wedding

(e) Give **one** advantage of using a lookup list for data entry.

_____ [1]

(f) Give **one** disadvantage of using a lookup list for data entry.

_____

_____ [1]

Anne uses the following criteria to select all customers who live in Lurgan.

Town = **"Lurgan"**

(g) Write down the criteria Anne would use to select all customers who live in Belfast and have ordered Birthday cards.

_____

_____ [3]

(h) In the table below place a tick (✓) beside the database tool Anne could use to display the results of a query.

Database tool	Tick (✓)
Form	
Report	
File	
Record	

[1]

(i) Anne uses mailmerge to send a letter to **all** customers who have purchased Birthday cards from her. Outline the steps she would have to follow to do this.

_____

_____

_____ [3]

Total Question 7

[Turn over

8 Molly's ICT teacher uses a VLE.

(a) Expand the acronym VLE.

_____ [1]

(b) Describe **two** ways in which Molly's teacher can use a VLE to teach her ICT class.

1. _____

_____

_____

2. _____

_____

_____ [4]

(c) Molly also makes use of CAL software.

(i) Expand the acronym CAL.

_____ [1]

(ii) List **two** advantages of using CAL software in education.

1. _____

2. _____ [2]

7543.06**R**

9 Asma supermarket uses EFTPOS for processing customer sales.

(a) Give **one** advantage to the customer of using EFTPOS.

_____ [1]

(b) Give **one** disadvantage to Asma of using EFTPOS.

_____ [1]

(c) Give **one** advantage to Asma of using EFTPOS.

_____ [1]

(d) Identify **two** output devices used at an EFTPOS.

1. _____

2. _____ [2]

Total Question 9

[Turn over

7543.06**R**

10 There are many software packages and online applications available to help people develop their own websites.

Websites are written using HTML.

(a) Expand the acronym HTML.

_____ [1]

(b) Use the list of words below to complete the table describing the features of many website design packages.

Hotspot   Hyperlink   Layer   Tables

Features of web design packages	Correct Word
Used in web pages to organise text and other multimedia elements into rows and columns	
A tool that can be used to place text and other multimedia elements on a web page	
An element on a web page that when clicked on will take the user to another website, web page or document	
An area of a graphic that when clicked will cause an action on a web page	

[4]

Site management tools help web designers organise the content of their websites.

(c) Identify **two** tasks you can complete using a site management tool that will help in the management of your website content.

1. _____

2. _____ [2]

(d) (i) Give **one** reason why you should **not** use .bmp files when including images on a website.

_____ [1]

(ii) Give **one** reason why it is important that you do **not** include a large video file on the home page of a website.

_____

_____ [1]

(e) Thumbnail images can be added to web pages where a lot of graphic content is required. Explain the term thumbnail image.

_____

_____ [2]

(f) Identify the following as statements about "vector-based" or "bitmap" graphics. The first one has been done for you.

Statement	Vector-based or bitmap
The file contains instructions on how the image should be redrawn.	Vector-based
The file is made up of a grid of tiny pixels.	
The image can be stretched without loss of clarity.	
The image is made up of objects defined by mathematical equations.	
When stretched the image can become blurred.	

[4]

[Turn over

7543.06**R**

When creating web pages they can be viewed in design view and preview mode.

(g) Explain the terms design view and preview mode.

Design View _____

_____ [1]

Preview Mode _____

_____ [1]

When testing a completed website you may find broken hyperlinks.

(h) State **two** reasons why this might happen.

1. _____ [1]

2. _____ [1]

Total Question 10

7543.06**R**

11 John's laptop has the latest Windows operating system installed.

(a) State the purpose of the operating system on a computer system.

_____

_____ [1]

(b) List **three** functions John can expect the operating system to perform.

1. _____

2. _____

3. _____ [3]

(c) John describes the Windows operating system as a GUI.

   (i) Expand the acronym GUI.

_____ [1]

  (ii) Describe the main features of a GUI.

_____

_____

_____

_____

_____

_____ [4]

 (iii) State why a GUI helps make the computer easier to use.

_____

Total Question 11

_____ [1]

[Turn over

7543.06**R**

12 Gorgeous Pizza is a pizza delivery company. When a customer makes their first order they are asked to register for a loyalty card.

(a) When customers are registering they are asked a set of questions shown below. Place a tick (✓) beside the questions which should **not** be asked when registering for a store's loyalty card under the Data Protection Act.

Question	Tick (✓)
What is your name?	
Do you have any convictions?	
What is your address?	
Do you have any medical conditions to declare?	

[2]

(b) George Smyth is a registered Gorgeous Pizza customer. Today he received a phone call from a computer company in the USA who said they obtained his information from Gorgeous Pizza.

(i) List **two** principles of the Data Protection Act which have been broken.

1. _____

2. _____ [2]

(ii) What title is given to the person responsible for ensuring the Data Protection Act is followed within Gorgeous Pizza?

_____ [1]

(iii) If George wishes to make a complaint about personal data held by Gorgeous Pizza, who should he contact?

_____ [1]

13 Anna has bought a smartphone which doubles as a portable games console. It has the following features:

- 854 × 480 pixel touch sensitive screen
- Touch pad for playing games which slides out from the phone
- 1 GHz Processor
- 512 MB RAM
- 512 MB ROM
- 50 GB Storage space
- WiFi
- Bluetooth
- 3G

(a) Read the statements below and write TRUE or FALSE beside each. The first has been done for you.

Statement	TRUE/ FALSE
The phone has no wireless technology	FALSE
RAM is volatile	
RAM and ROM are volatile	
ROM is non-volatile	
The processor will store user data when the phone is switched off	
The processor will run programs while the phone is switched on	

[5]

(b) Anna decides to make use of the phone's Bluetooth and WiFi features.

(i) Describe **two** ways in which Bluetooth differs from WiFi.

1. _____

_____

2. _____

_____ [2]

(ii) Which wireless technology would you recommend for each of the tasks below?

Tasks	Which Wireless technology?
Connecting a headset to the phone to play online games	
Connecting the phone to the Internet to download movie files	
Connecting the phone to the Internet to read email whilst travelling	

[3]

(c) Anna uses the smartphone for online banking. She is worried that if she loses her phone hackers could get her Internet banking details.

(i) What is a hacker?

_____

_____ [1]

(ii) Anna has set the browser on the phone to remember usernames and passwords. Explain to her why this is not good practice.

_____

_____ [1]

(iii) Anna's friend has suggested encrypting the data stored on the phone.

What is encryption?

_____

_____

_____ [2]

Total Question 13

14 Alexander's mum has set up a games room in their home so he and his friends can play their computer games.

Some of the controllers Alexander's friends use to play computer games provide feedback in the form of vibration.

(a) List **two** other types of feedback used in computer games.

1. _____

2. _____ [2]

(b) From the list of controllers below identify the most appropriate controller for each of the computer games shown on the next page.

steering wheel   **balance board**   **tracker pad**

keyboard   **joystick**

Game Interface	Controller
"image of car/driving simulation game"	
"image of popular arcade game"	
"image of fitness/exercise simulation game"	

[3]

Some games are designed to be played using hands free controllers.

(c) Give **two** advantages of using hands free controllers to control computer games.

1. _____

2. _____ [2]

(d) Alexander must design a computer game as part of his GCSE ICT course. Part of his games proposal and the game interface are shown below.

Game Proposal

Game Genre and Target Audience

My game is a quiz designed to teach Primary One pupils how to add two numbers together.

Game Interface

Type your answers in the boxes

20 + 120 =

12 + 98 =

Score

120 + 6 =

(i) List **two** ways the game interface is **not** suitable for the target audience.

1. _____

2. _____ [2]

(ii) Apart from game genre and target audience, list **two** other items of information which should be included in the game proposal.

1. _____ [1]

2. _____ [1]

(e) Alexander's teacher tells him the user should be able to access the Help pages at any time.

Give **one** reason why this is important.

_____

_____ [1]

(f) Apart from Help, list **two** other options that should be made available to users at all times when playing a computer game.

1. _____

2. _____ [2]

[Turn over

(g) (i) Computer games can be classified into genres. Apart from quizzes, identify **three** other game genres and provide a brief description of each.

Genre 1: _____

Description: _____

_____

_____

Genre 2: _____

Description: _____

_____

_____

Genre 3: _____

Description: _____

_____

_____ [6]

(ii) Identify and explain **three** problems which may impact on individuals who play computer games over a long period of time.

Problem 1: _____

Explanation: _____

_____

_____

Problem 2: _____

Explanation: _____

_____

_____

Problem 3: _____

Explanation: _____

_____

_____ [6]

[Turn over

7543.06**R**

15 Many mobile phones can now record digital video and sound.

(a) Use some of the words from the list below to complete the paragraph which explains the process of recording and storing digital sound files.

Analogue   **Memory**   **Digital**   **Microphone**   **Speaker**

Mobile phones have a built-in _____ to record sound.

Sound is input in _____ format and is then converted into

_____ format so it can be stored in the phone's memory.

[3]

Digital Video and sound can be distributed to others across the Internet.

(b) Name **one** method of passing digital sound files from one mobile phone to another.

_____ [1]

_____

THIS IS THE END OF THE QUESTION PAPER

_____

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7543.06**R**