



Rewarding Learning

General Certificate of Secondary Education
2010

7	1		
---	---	--	--

Candidate Number

--	--	--	--

StudentBounty.com

Information and Communication Technology

Full Course

Paper 2
Higher Tier



G5804

[G5804]

THURSDAY 24 JUNE, MORNING

TIME

1 hour.

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 twelve** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 100, including a maximum of 5 marks for quality of written communication.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
QWC	

Total Marks	
-------------	--

6273

Examiner Number

--

(jun10G5804)

- 1 Leisa wants to buy a digital photo frame but needs help with some of the technical description.

Examiner Only	
Marks	Remark



© PC World/DSGI PLC

- 320 × 234 Resolution
- Stand for landscape or portrait mode
- Single image or slideshow mode
- 128 MB ROM
- SD memory card expansion slot
- Wireless connectivity

- (a) Explain the term **resolution** and say why it is important when displaying graphic images.

[2]

- (b) Draw two diagrams in the space below to show what is meant by landscape and portrait modes.

[1]

2 Verification and validation help reduce errors when data is being entered into a computer system.

(a) Complete the table below by stating which definition is data validation and which is data verification.

Definition	Validation/Verification?
Helps guarantee the accuracy of data being entered into a computer system	
Helps ensure that data being entered into the system is correct	

[2]

(b) Complete the table below stating what type of validation check is being carried out on the Data Items shown. (The first is completed for you.)

Data Item	Error Message	Validation check
2001	Membership number must be between 1 and 2000	Range check
@lexander	Member name must contain text only	
18/05/2000	Date of birth must be entered dd/mm/yy	
PT	Membership type must be 3 characters long	
Field is left blank	Membership number cannot be left blank	

[4]

Examiner Only

Marks

Remark

- 4 Neil has started a new taxi firm and wants to create a database to keep records of his staff and bookings. He sets up the following tables in a relational database.

tblDriver

Driver ID	Driver Name	Tel Num	Car Reg	Car capacity
100	N McFall	07766872363	UHY 8798	5
101	J McMasters	07712398762	JTG 9801	8
102	A McAllister	07712366177	CLZ 2290	5
103	R Jones	07799982771	OIL 2065	15

tblBooking

Booking ID	Driver ID	Booking Name	Date	Time	Pick-up	Set-down	Num Passengers
200	102	Cowden	01/05/10	12:00	Castlecourt	Green Road	1
201	102	Brown	01/05/10	12:15	City Hall	Lisburn Road	3
201	101	Gribben	01/05/10	12:15	Victoria Sq	Ormeau Road	2
203	102	Ward	02/05/10	12:20	12 Belmont Road	City Centre	2
205	100	Forrester	02/05/10	13:00	Forestside	Belmont Road	1
206	102	Oswald	02/05/10	13:20	Belmont Road	City Centre	1

- (a) Identify **ONE** error Neil has made entering data into the **Booking ID** field in tblBooking.

_____ [1]

6273

Examiner Only	
Marks	Remark

--	--

Driver ID is the key field in tblDriver.

Examiner Only	
Marks	Remark

(b) Why can **Driver ID** not be used as the **key field** in tblBooking?

_____ [1]

(c) Give **ONE** reason why Neil would not be able to add the following booking to tblBooking.

Booking ID	Driver ID	Booking Name	Date	Time	Pick-up	Set-down	Num Passengers
207	105	Grant	02/05/10	13:00	Castlecourt	Boucher Road	3

_____ [1]

Use the data in the tables shown to answer the following questions.

(d) How many records will each of the following queries return for Neil?

(i)

Field:	Booking ID	Driver ID	Booking Name	Date	Time
Table:	tbl Booking				
Sort:					
Show:	<input checked="" type="checkbox"/>				
Criteria:		"102"		"02/05/10"	
or:					

_____ [1]

--	--

(ii)

Field:	Booking ID	Driver ID	Booking Name	Date	Time
Table:	tbl Booking				
Sort:					
Show:	<input checked="" type="checkbox"/>				
Criteria:		"101"		"02/05/10"	
or:		"103"			

[1]

(iii)

Field:	Driver Name	Booking Name	Date	Time
Table:	tbl Driver	tbl Booking Query	tbl Booking Query	tbl Booking Query
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	"A McAllister"		"01/05/10"	
or:				

[1]

(e) Name **ONE** feature of a database application Neil might use to display the results of each query.

[1]

He uses the following form to add details of new drivers to the database.

Driver ID	<input type="text"/>
Driver Name	<input type="text"/>
Tel Num	<input type="text"/>
Car Reg	<input type="text"/>
Car Capacity	<input type="text"/>

6273

Examiner Only	
Marks	Remark

(10)

(f) Give **TWO** ways he could improve the appearance of the form.

1. _____ [1]

2. _____ [1]

Relational databases are designed to help reduce **data redundancy** and improve **data integrity**.

(g) (i) Place a tick (✓) beside the correct definition of **data integrity** in the table below.

Definition	Tick (✓)
Data integrity refers to how correct and relevant the data is	
Data integrity refers to how correct and reliable the data is	
Data integrity refers to how accurate and normal the data is	
Data integrity refers to how accurate and irrelevant the data is	

[1]

(ii) Explain what is meant by **data redundancy**.

_____ [1]

(iii) Give **ONE** effect of data redundancy on the database.

_____ [1]

Examiner Only

Marks Remark

Total Question 4

[Turn over

5 Patrick manages a call centre. The computers in the call centre are linked via a LAN (Local Area Network).

(a) Other than communication give **TWO** advantages of using a LAN in an office.

1. _____
 _____ [1]

2. _____
 _____ [1]

(b) The network is backed up daily. Tick (✓) **TWO** storage media in the table below that are suitable for backing up a computer network.

Storage media	Tick (✓)
Memory Stick	
DVD ROM	
Magnetic Tape	
External Hard Drive	
CD ROM	

[2]

(c) Other than usernames and passwords and back up. Give **ONE** other method of providing security on a network.

 _____ [1]

(d) Give **TWO** differences between a LAN and a WAN.

1. _____

 2. _____
 _____ [2]

Examiner Only

Marks Remark

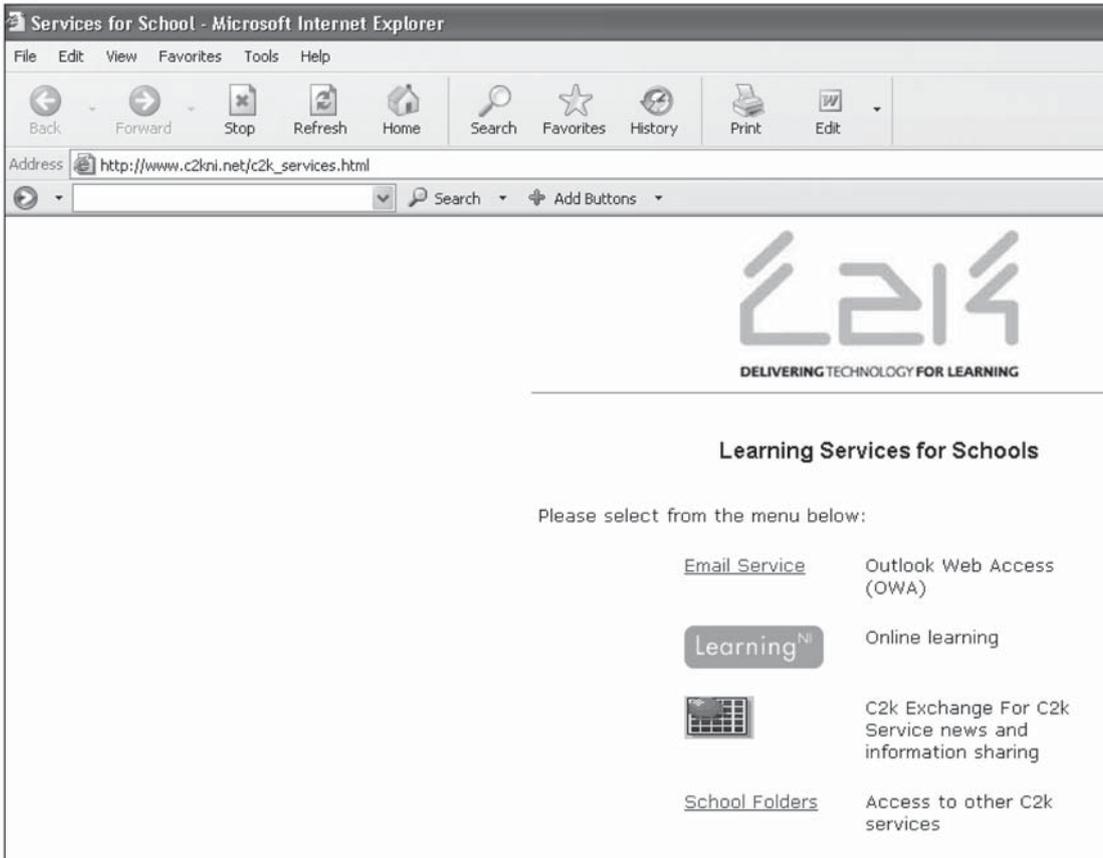
Total Question 5

7 Web browser software allows users to display **HTML** web pages they have retrieved from the Internet.

(a) Expand the acronym **HTML**.

_____ [1]

(b) On the web page displayed below circle the **navigation bar**. [1]



©c2kni

(c) Give **ONE** advantage of being able to display the browsing history when using a web browser.

 _____ [1]

Examiner Only	
Marks	Remark

8 Electricity, gas and telephone bills are all produced using batch processing.

(a) Name **ONE** other application that uses batch processing.

_____ [1]

(b) Use the words below to complete the following sentences to describe the steps involved in creating electricity bills using batch processing. (note: not all words will be used)

Master File

Error Report

Transaction File

Batch

Bill

Turnaround Document

Details of current meter readings are entered onto the system in one

_____ .

Problem data results in an _____ .

Current meter readings are then stored on a _____

which is then merged with the old _____ so the

customer's _____ can be calculated. [5]

(c) In most batch processing systems the data is processed overnight. Give **ONE** advantage to the organisation of processing data at this time.

 _____ [1]

(d) Give **ONE** reason why batch processing is not a suitable method for processing flights on an Internet-based booking system.

 _____ [1]

Examiner Only

Marks Remark

Total Question 8

BLANK PAGE
(Questions continue overleaf)

9 Computer control systems are widely used in the home and in society today.

- (a) (i) Give **TWO** examples where computer control is used in traffic control systems. For each example list the sensor used to record data for the system.

Example 1 _____ [1]

Sensor 1 _____ [1]

Example 2 _____ [1]

Sensor 2 _____ [1]

- (ii) Give **ONE** advantage and **ONE** disadvantage of this application of computer control in society today.

Advantage:

 _____ [1]

Disadvantage:

 _____ [1]

Examiner Only	
Marks	Remark

10 Digital technology has altered the way we record, distribute and listen to music.

Examiner Only	
Marks	Remark

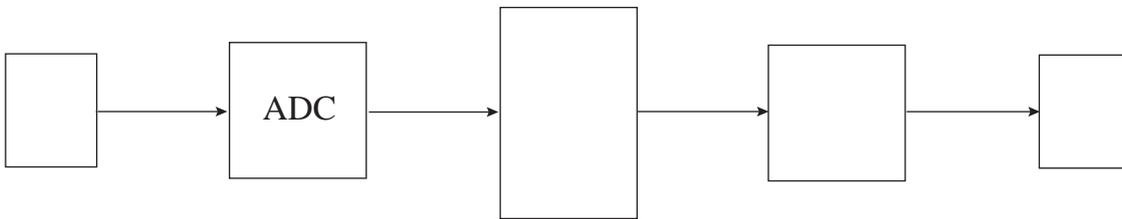
(a) Digital recordings take sound waves in analogue format and converts them to digital using an ADC (Analogue to Digital Converter).

Give **ONE** reason why this conversion is necessary.

_____ [1]

(b) Label the diagram below using the following terms

Computer Speaker Microphone DAC



(i) _____ (ii) _____ (iii) _____ (iv) _____

[4]

--	--

(c) Tick (✓) **TWO** advantages of digital music recordings **for the listener**.

Advantage	Tick (✓)
The file quality will remain the same at all times	
The file can be played on any audio device	
The file can be stored on a computer and played back	
The file quality deteriorates over time	

[2]

(d) Other than improved sound quality, list **TWO** advantages of using **MIDI** technology to **create** music files.

1. _____

_____ [1]

2. _____

_____ [1]

Examiner Only

Marks Remark

Total Question 10

6273

[Turn over

11 Games consoles such as Xbox 360, Playstation 3, Nintendo Wii, Nintendo DS are widely available to teenagers today.

(a) Tick (✓) **THREE** statements that are **TRUE** about gaming technology today.

Statement	Tick (✓)
Some games consoles can be connected to the Internet for interactive gaming	
Virtual reality games are available for play via mobile phone technology	
All computer games are available for purchase in CD format	
Virtual reality games can now be found in some gaming arcades	
Games consoles now come with a variety of peripherals to allow interaction with the game	

[3]

(b) State **TWO** advances in technology that have helped improve the quality of computer gaming today.

1. _____
 _____ [1]

2. _____
 _____ [1]

(c) Computer gaming has also had a negative impact on society.

Give **TWO** health problems that have developed as a result of long term gaming.

1. _____
 _____ [1]

2. _____
 _____ [1]

Examiner Only

Marks Remark

Total Question 11

Permission to reproduce all copyright material has been applied for.
In some cases, efforts to contact copyright holders may have been unsuccessful and CCEA
will be happy to rectify any omissions of acknowledgement in future if notified.

110041

(24)