

2006 Computing Studies

Standard Grade – Credit

Finalised Marking Instructions

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2. At the opening ceremony, guests were given a demonstration of the school's technological facilities.

(a) Distributed throughout the school are *terminals* showing the school's intranet. *Hyperlinks* and *hotspots* are activated using the mouse pointer.

(i) What is a "hyperlink"?

A link from a webpage (or slide) to another web page, (documents or programs) Accept a description of what it does.

1	0
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(ii) How can users tell that the intranet page has hotspots?

The screen pointer will change shape or colour or .. when it moves over a hotspot OR contents of the hotspot will appear when the pointer moves to it OR message appears in status bar.

1	0
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(b) All desktop and laptop computers are networked throughout the school. The network is a *client-server* network.

(i) What is a client in a network?

User OR computer (on the network) OR pupil OR station OR terminal

1	0
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(ii) What is the purpose of a server in such a network?

Distribute OR store applications/files (accept functions of printer/CD-ROM/ database/Internet/Mail servers too)

1	0
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(c) Some computers within the school are linked to the server via *wireless* technology, while others are connected to the server using cables.

(i) State **one** advantage of using cables.

Faster access/downloads OR bigger bandwidth OR fewer security fears/much more reliable connection

1	0
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(ii) State **one** advantage of using wireless technology.

Increased portability OR easier to expand OR cheaper to setup/install OR "no wires to trip over" ✓ OR Tidier ×

1	0
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KU	PS
1 0	
1 0	

3. (continued)

(c) The program controlling the robot was written using a *control language* and is stored in *ROM* within the robot.

(i) Describe what is meant by a control language.

Special language designed to control the movements of an automated device such as a robot.

(ii) Describe **one** advantage of storing software on ROM.

Cannot be accidentally/deliberately deleted OR loads up very quickly OR cannot be corrupted by viruses

cannot be deleted when switched off ×

[Turn over

KU	PS
2	1
1	0
0	
1	0
0	1
	0
1	0
0	
1	0
0	

4. Another new feature of Kulross Academy is the use of identity cards, with all staff being issued with *smart cards*.

(a) Which of the following statements are true: (Tick (✓) **two** boxes only.)

**If tick
3 boxes and
2 right - 1 mark
1 right - 0 mark**

- 1. Smart cards have their own processor.
- 2. It is easy to forge smart cards.
- 3. Smart cards are also known as mark sense cards.
- 4. The information on a smart card can be updated.

(b) When they are first issued with smart cards, teachers have to enter a 4-digit pin number. *Verification* is carried out at this stage.

(i) What is the purpose of verification?

Ensure data is correct OR checking that data has been entered correctly

(ii) How could the 4-digit pin number be verified?

Teacher should enter it twice OR double entry

(c) Pupils use magnetic stripe cards for registration and payment of school lunches. When a pupil enters a classroom, the card is passed through a special piece of hardware.

What is this hardware called? **Magnetic ink card reader ×**
Magnetic stripe reader ✓
Magnetic reader ×
(Magnetic) card reader **Stripe card reader ✓**

(d) When a pupil ‘purchases’ food from any of the school’s dining facilities, details of the purchase are logged in a database on the school’s computer network.

(i) Many dining staff may be accessing this database at one time.

What is the term used to describe such a database?

Multi **User** Database
Multiple User Database ×

KU	PS
	2 1 0
	2 1 0
	1 0

4. (d) (continued)

- (ii) Data can be accessed in two ways – *randomly* or *sequentially*. Which type of access would be appropriate in this situation? Explain your answer.

Randomly/Random

Type _____

Explanation **(Lots of people are using the database so) fast access is required OR sequential access will be too slow in this situation**

- (e) The school's computer network holds lots of personal data about both staff and pupils. The *data controller* must make sure that the data is accurate and kept up to date.

- (i) Describe **two** other responsibilities that the data controller has.

- 1 **Obtain and process data fairly and lawfully OR take appropriate security measures OR register the purposes for which data is held OR only hold info that's adequate, relevant and not excessive for the purposes OR not use or**
- 2 **disclose the info in a way contrary to these purposes OR allow individuals access to their info OR don't keep the info any longer than necessary**

- (ii) The *data subjects* also have rights. Who are the data subjects in this case?

Staff (and/or) pupils

needs to apply to actual situation

[Turn over

KU	PS
1 0	
	1 0
	1 0

5. (continued)

(d) The graphic is to be distributed electronically to **all** teachers throughout the school. This can be done in two ways:

1. Sent as an *attachment* using electronic mail.
2. Stored in a read/write shared area of the network that teachers and pupils can access.

(i) What is an attachment?

A file that is sent with a message

(ii) Describe **one** advantage of sending the graphic as an attachment.

**Will be easy for teacher to locate OR
only teachers will be able to receive it OR more secure**

(iii) Describe **one** disadvantage of distributing the graphic using the shared area.

**May be deleted OR altered intentionally (unintentionally
by pupils/staff) OR not as secure**

[Turn over

6. A Maths teacher at Kulross Academy uses a spreadsheet to store his pupils' test results. Part of the spreadsheet is shown below:

	A	B	C	D	E	F
1	Name	Test1	Test2	Test3	Average	Letter home?
2	Ben Adams	53	67	63	61	No
3	Paula Bryant	35	33	31	33	Yes
4	Nasim Collins	76	81	93	83	No
5	Darren Daly	23	56	18	32	Yes
6	Lucy Locke	78	72	86	79	No

- (a) Cell E2 contains a *function* to calculate the average. It has been *replicated* from E2 into cells E3 to E6.

- (i) What is meant by replication?

The function has been copied

notion of "repeated"✓

1
0

- (ii) Has *relative* or *absolute* replication been used in this case?

Explain your answer.

Relative (1)

Type of Replication _____

1
0

Explanation

As formula changes in relation to row it has been replicated into

1
0

- (b) The teacher is concerned with the progress of some of his pupils. If a pupil's average result is less than 50, then he intends to send a letter home informing parents of his concern.

Cell F2 contains a function that automatically identifies the pupils. Part of the function is shown below. Complete the function.

= **IF** (E2 < 50, "Yes", **"No"**)

need the quotes!

2
1
0

6. (continued)

- (c) The Maths teacher finds it time consuming having to create lots of similar letters. His colleague, a Computing teacher, recommends he creates a *standard letter*.

She suggests that the original letter can be scanned into the computer using *OCR*.

- (i) What is meant by “OCR”?

Optical Character Recognition

1	
0	

- (ii) What is a standard letter?

Same general (fixed) letter with spaces left for personal information (variable) 1 mark for fixed, 1 mark for varied

2	
1	
0	

- (iii) What is the process called when information from a data file is inserted into a standard letter?

Mailmerge

1	
0	

- (iv) A *template* could also be used to speed up creation of the letters. What is a “template”?

Ready-made blank document (1) with structure already in place (1).

2	
1	
0	

- (d) The Computing teacher also recommends that the finished letter is stored as an *RTF* file format.

- (i) What is meant by “RTF”?

Rich Text Format

1	
0	

- (ii) Describe **one** advantage of storing a file as an RTF file type.

Standard format OR can be used by different platforms OR can be used by different applications OR universally ‘understood’

RTF keeps the formatting or styles

1	
0	

[Turn over

7. The *Network Manager* at Kulross Academy keeps a database of all computer software in the school. Part of the database is shown below.

Kulross Academy - Software Inventory				
				
Name	Date of Purchase	Location	Computer ID	Type
DT Publishing	05-11-05	ICT Rm 1	333	Freeware
DT Publishing	05-11-05	ICT Rm 2	456	Freeware
DT Publishing	10-01-06	ICT Rm 2	342	Freeware
WordPlus	20-05-05	CDT Rm 32	654	Shareware
WordPlus	20-05-05	CDT Rm 32	765	Commercial
WordPlus	20-05-05	CDT Rm 32	875	Shareware
WYNIP	03-04-06	ICT Rm 2	458	Shareware
WYNIP	03-04-06	ICT Rm 1	567	Shareware

- (a) It has been sorted, in a complex way, on three fields.

Identify the fields in the **order** in which the sort occurs. The first one has been done for you.

FIELD 1. Name

FIELD 2. Date of Purchase (1 mark)

FIELD 3. Computer ID (1 mark)

2
1
0

- (b) The network manager wishes to produce a list of all Shareware that was installed before the 1 April 2006. Describe how this could be done.

Complex Search OR Query OR filter (1 mark)

Type field for 'Shareware' (1 mark)

(AND) Date of Purchase field for <01-04-06 (1 mark)

Idea of complex search must be implied for first mark

3
2
1
0

- (c) Many databases make use of *computed fields*. When would a computed field be used in a database?

When a calculation had to be performed/contains a formula or an example.

1
0

KU	PS
1 0	
1 0	
1 0	

7. (continued)

(d) What is *shareware*?

Software that is free for only a short (evaluation) period

(e) What is *freeware*?

Software that is freely available for use on any number of computer systems Software is free to download, free to use.

Free on its own ×

(f) Sometimes pupils try to install games, without permission, on to the school network.

State the name of the piece of legislation which makes this action illegal.

**Copyright, Design and Patents Act/Computer Misuse Act/
Software Copyright Act.**

[Turn over

