Surname		Other Names	
Centre Number		Candidate Number	
Candidate Signature			

General Certificate of Secondary Education
June 2003

INFORMATION AND COMMUNICATION TECHNOLOGY 3521/H
(SPECIFICATION A)
(FULL COURSE)
HIGHER TIER

AQA
ASSESSMENT and
QUALIFICATIONS
ALLIANCE

H

Friday 20 June 2003 1.30 pm to 3.00 pm

No additional materials are required.
You may use a calculator.

Time allowed: 1 hour 30 minutes

Instructions
- Use a blue or black ink or ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** the questions in the spaces provided.

Information
- The maximum mark for this paper is 85.
- Mark allocations are shown in brackets.

For Examiner's Use	
Number	Mark
1-5	
6	
7	
8	
9	
10	
11	
TOTAL	
Examiner's Initials	

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

1 A video shop used a DTP (Desk Top Publishing) package to change **Flyer A** into **Flyer B**.

Flyer A   **Flyer B**

Vic's Videos

Special Offers

Hire two videos and get a
third video free.

Pay for a one-night hire and
keep the video for 2 nights.

Hire three videos and get a
large drink and large popcorn
free.

Don't delay
Hire today

Vic's Videos

Special Offers

- Hire two videos and
  get a third video free.

- Pay for a one-night
  hire and keep the
  video for 2 nights.

- Hire three videos and
  get a large drink and
  large popcorn free.

**Don't delay
Hire today**

(a) Give **five** changes that have been made to **Flyer A**.

Change 1 ....

Change 2 ....

Change 3 ....

Change 4 ....

Change 5 ....

(5 marks)

(b) Give **two other** changes that could have been made to improve the presentation of **Flyer A** using a DTP package.

Change 1 ....

Change 2 ....

(2 marks)

2 From the list below, choose the **most** suitable type of application software to use for each task described.

Charts   Drawing
Communications   Mail-merging
Database   Spreadsheet
Data logging   Web design
Desk top publishing   Word processing

Task   **Application Software**

(a) sending an e-mail   ....

(b) sending a personalised letter to all members of a club   ....

(c) writing a book   ....

(d) calculating the monthly cost of running a car   ....

(e) automatically collecting temperatures at a weather station ....

(f) storing a video club's membership records   ....

(g) organising the layout of a school newspaper   ....

(7 marks)

7

TURN OVER FOR THE NEXT QUESTION

Turn over ▶

3 A gym and health centre is about to open in early autumn. The membership secretary needs a data capture form for new members to complete. The details from the data capture form will be put into their members database.

In the space below design **part** of the data capture form for new members. Care should be taken to include **five** suitable fields and enough space to fill in their details.

(5 marks)

4 Describe **four** rights given to data subjects by the 1998 Data Protection Act.

....

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(4 marks)

$\frac{}{4}$

TURN OVER FOR THE NEXT QUESTION

5 A garage specialises in selling second hand cars. A database is used to store information on the cars for sale. Part of the database file is shown below.

Make	Model	Colour	Number of doors	Registration number	Price	Additional feature
Audi	A4	Green	5	S772 FGS	£7249	Alloys
BMW	318 SE	Blue	4	M223 BMW	£4995	Full service history
BMW	520 SE	Green	4	T125 GHB	£12495	Full electric pack
Citroen	Saxo	White	3	S132 HNM	£2450	Full service history
Fiat	Punto SX	Red	3	P56 TVB	£2195	Electric windows
Ford	Focus Zetec	Blue	5	Y579 PLM	£6995	Air conditioning
Ford	Mondeo	Blue	5	M673 FRD	£985	Full service history
Ford	Scorpio Ghia	Black	4	R778 THY	£5999	Metallic paint
Honda	Accord LS	Silver	4	S454 SAN	£6999	Full electric pack
Honda	Civic	White	3	S349 JNF	£2499	Power assisted steering
Nissan	Micra	Red	3	W789 PTE	£3999	Very low mileage
Peugeot	306 GTi	Yellow	3	P458 RTE	£4785	One owner
Renault	Laguna	Silver	5	S110 BHW	£3999	Alloys
Rover	218S	Grey	5	M12 GHR	£999	Power assisted steering
Rover	420	Red	4	P134 HYT	£2999	Diesel
Rover	620 SLi	Green	4	R230 DDE	£3295	Full service history
Vauxhall	Astra Estate	Red	5	V941 XDS	£5499	One owner
Vauxhall	Sintra	Blue	7	T652 NBF	£6999	One owner
Volkswagen	Sharan	Green	7	P992 HGT	£4999	Low mileage
Volkswagen	Polo1.4E	Green	5	TJ51 TRE	£7999	Factory sun roof

(a) Explain what is meant by the following terms. You may find it helpful to give examples.

(i) Record...

....

(ii) Field..

....

(2 marks)

(b) (i) Which field is the *key field* in this database?

....

(1 mark)

(ii) Explain why the field you have chosen is suitable to be used as a key field.

....

....

(1 mark)

(c)   In order to search the database, the following commands are used.

List
For
Equals
Greater than
Less than
And
Or

So the search
List Model **For** Colour **Equals** Silver

would produce the result

Accord LS
Laguna

What would be the results of the following searches?

(i)   **List** Make **For** Number of doors **Equals** 7

....

....

....

(2 marks)

(ii)   **List** Model, Registration number **For** Price **Less than** £2000

....

....

....

(2 marks)

(d)   Write down the instructions needed to produce the following.

(i)   A list of the model of cars that have a full service history as an additional feature.

....

....

....

(2 marks)

(ii)   A list of the make and model of cars, where the price of the car is between £3000 and £5000.

....

....

....

(3 marks)

Turn over ▶

6 Data validation is a very important part of commercial data processing.

(a) Tick **one** box in each part below that best describes how data validation works.

(i) Data validation is the checking of data during

	Tick **one** box only
input	
output	
processing	

(ii) The data is checked by

	Tick **one** box only
software	
hardware	
people	

(iii) The data is checked to make sure

	Tick **one** box only
it is always correct	
it is reasonable	
it is encrypted	

(3 marks)

(b) *Presence check* and *data type check* are two validation checks. For **each**, say how they work and the type of error each will detect.

(i) Presence check ....

....
(1 mark)

Type of error detected ....

....
(1 mark)

(ii) Data type check ....

....
(1 mark)

Type of error detected ....

....
(1 mark)

(c) Name **one** other method of data validation.

....
(1 mark)

7 From the list given below, choose which term best matches the definition in the left-hand column of the table which follows. Write your answers in the spaces provided in the right-hand column.

bar codes	logging interval	period of logging
calibration	magnetic strips	questionnaires
data capture forms	MICR	sensor
data logging	OCR	tabulation
feedback	OMR	

Definition	**Term which best matches the definition**
The collecting and storage of data at regular, fixed intervals over a period of time.	
A method of data input used in banking to read magnetised ink on cheques.	
Used to store data such as the account number and expiry date on credit and bank cards.	
The continuous checking of data from sensors to control the output of a computer system.	
A method of inputting data in which reflected light is used to detect character patterns.	
A method of matching readings from a sensor to an accepted scale in known units.	

(6 marks)

$\dfrac{\quad}{6}$

TURN OVER FOR THE NEXT QUESTION

Turn over ▶

8 A travel agent is going to design a new interactive web site where the customers can read about and book holidays. The way in which a customer interacts with computer software is increasingly important. One possible way the customer could interact is with a command driven interface.

(a) Give **two other** types of user interface the travel agent could use.

User interface 1 ....

User interface 2 ....

(2 marks)

(b) Which **three** of the following are important factors to be considered when the travel agent is designing the new user interface?

	Tick **three** boxes only
Lots of holidays in Spain	
A consistency of layout	
A consistency of text style	
The use of a spreadsheet	
The use of sound	
The cost of installation	

(3 marks)

(c) Two other features that the travel agent will use on the new web site are *hyperlinks* and *hot spots*. Explain these terms:

(i) Hyperlink ....

....

(ii) Hot spot ....

....

(2 marks)

7

9 (a) Explain what is meant by the term *operating system*.

....

....

....
(2 marks)

(b) Operating systems are

	Tick **one** box only
Hardware	
Software	

(1 mark)

(c) Which **three** of the following are features of operating systems?

	Tick **three** boxes only
Manages system resources including memory	
Manages the allocation of CPU time	
Manages the spell-checker in a word processor	
Manages the accounts	
Manages system security	
Manages the buying of new computers	

(3 marks)

(d) Name **two** different types of operating system.

Operating system 1 ....

Operating system 2 ....
(2 marks)

8

TURN OVER FOR THE NEXT QUESTION

Turn over ▶

10 A library uses an extensive database system that was written to meet its specific needs. The system allows a variety of people to find out about the books the library owns. The database can be interrogated in many ways and can generate a wide variety of reports.

(a) Name **three** fields which you would expect the books database to contain.

Field 1 ....

Field 2 ....

Field 3 ....

(3 marks)

(b) Give **three** ways in which a person wanting to borrow books might use the system.

Way 1 ....

....

Way 2 ....

....

Way 3 ....

....

(3 marks)

(c) Give **two** advantages to the library staff of having this system.

Advantage 1 ....

....

Advantage 2 ....

....

(2 marks)

(d) Give **two** disadvantages to the library of buying this specially written software compared with buying similar existing software.

Disadvantage 1..

....

Disadvantage 2..

....

(2 marks)

10

11 Supermarkets are increasingly using information technology in different parts of their business. Describe the advantages **and** disadvantages of these increased uses of information technology to both those who work at the supermarkets and their customers.

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Turn over ▶

END OF QUESTIONS