General Certificate of Secondary Education
June 2007

INFORMATION AND COMMUNICATION TECHNOLOGY 3527/H (SPECIFICATION A) (SHORT COURSE)
Higher Tier

H

AQA
ASSESSMENT and
QUALIFICATIONS
ALLIANCE

Tuesday 22 May 2007   1.30 pm to 3.00 pm

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

Time allowed: 1 hour 30 minutes

Instructions
- Use blue or black ink or ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- Answer the questions in the spaces provided.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information
- The maximum mark for this paper is 80.
- The marks for questions are shown in brackets.
- You are reminded of the need for good English and clear presentation in your answers.

For Examiner's Use			
Question	Mark	Question	Mark
1-5		13	
6		14	
7		15	
8		16	
9		17	
10			
11			
12			
Total (Column 1)			
Total (Column 2)			
TOTAL			
Examiner's Initials			

3527/H

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

1   (a)   From the box given below, choose **two** that are **input devices**.

CD-ROM	Monitor
Digital camera	Mouse
DVD ROM	Plotter
DVD RAM	ROM
Graphics digitiser	Scanner
Hard disk	Sensor
Keyboard	Speaker
Laser printer	Volatile
Light pen	

Input device 1 ....

Input device 2 ....

(2 marks)

(b)   Name **one** other input device **not** given in the box above.

    ....

(1 mark)

(c)   From the box given above, choose **two** that are **output devices**.

Output device 1 ....

Output device 2 ....

(2 marks)

(d)   Name **one** storage media **not** given in the box above.

Storage media ....

(1 mark)

6

For Questions 2 to 5, write the letter for each answer in the space given.

2 What does **ROM** stand for?

    A Random Only Memory
    B Random On Memory
    C Read Only Memory
    D Read On Memory

    Answer   ☐   *(1 mark)*

3 A search engine is

    A hardware used to help find information on the Internet.
    B software used to help find information on the Internet.
    C hardware used to send e-mails.
    D software used to send e-mails.

    Answer   ☐   *(1 mark)*

4 A sports centre stores its members' data on a database. Which **one** of the following is **not** a method used to restrict access to such data?

    A Usernames
    B Passwords
    C Locking doors
    D Merging files

    Answer   ☐   *(1 mark)*

5 What does the term hard copy mean?

    A Printed output
    B Output onto a screen
    C Output stored on CD-ROM
    D Information that is never output

    Answer   ☐   *(1 mark)*

Turn over for the next question

4

6 Phantastic Phones sell mobile phones and accessories.
The manager has produced the leaflet below using word processing software. The leaflet will be given out to people shopping in the High Street.

Phantastic Phones Special Offers
To celebrate the end of our first year in business, we are offering these special deals.

 1. Buy any new phone in May and get 25% off the marked price.
 2. Take out a new monthly contract with us and get the first three months free.

To reserve your phone or to get more details, phone Steve on 057 117 11700

(a) Tick **two** boxes to show which of the following features of a word processing package could be used to improve the **layout** of the leaflet.

	Tick **two** boxes only
Line spacing	
Search facility	
Mail-merging	
Centre	
Hyperlink	

(2 marks)

(b) Give **two** additional features of a word processing package that could be used to improve the **presentation** of the leaflet.

Feature 1 ....

Feature 2 ....

(2 marks)

(c) The manager wants to use the word processing package to rearrange the leaflet above so that the second special deal comes before the first.
Using the list given below, write down the steps needed to do this.

Paste
Cut
Highlight the second special deal
Position the cursor just above the first special deal

Step 1	
Step 2	
Step 3	
Step 4	

(2 marks)

7 In the space below, **complete** the design of a Data Capture Form for people applying to join a local library. Care should be taken to include suitable fields and enough space to fill in their details.

Lancre Library

First Name ☐☐☐☐☐☐☐☐☐☐☐

Surname ☐☐☐☐☐☐☐☐☐☐

Address 1 ☐☐☐☐☐☐☐☐☐☐☐☐☐

Address 2 ☐☐☐☐☐☐☐☐☐☐☐☐☐☐

(4 marks)

4

8 A computer system controls a robot turtle. At the front, the turtle holds a pen. When the turtle moves, the pen leaves a line on the paper beneath it.
Examples of the commands which are used to move the turtle are as follows:

FORWARD 5   would move the turtle forward 5 complete squares.

BACKWARD 5   would move the turtle backward 5 complete squares.

RIGHT 90   would turn the turtle right through an angle of 90 degrees.

(a) Write down the commands needed to draw this shape.

Commands

....

....

....

....

....

....

....

....
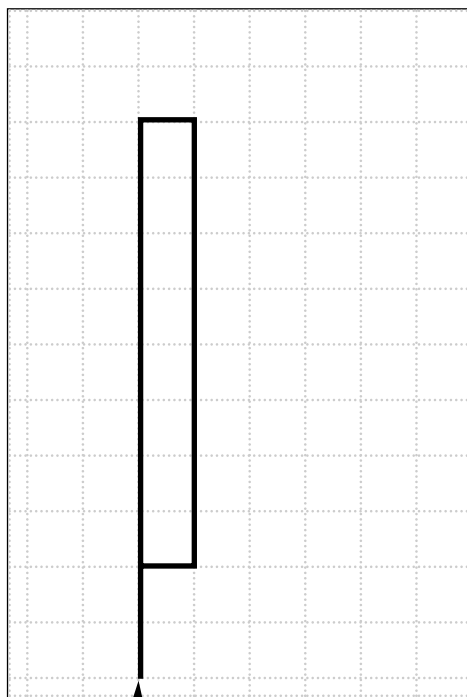
Start here

(3 marks)

(b) On the grid, draw the shape produced by the commands given below.
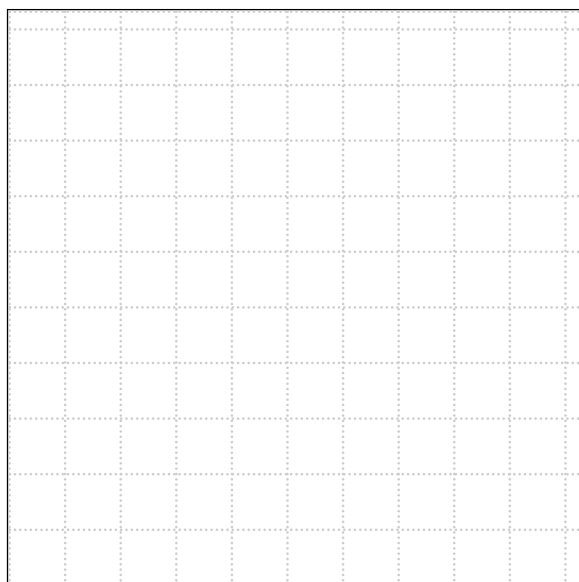
Commands

FORWARD 8
BACKWARD 4
RIGHT 90
FORWARD 5
RIGHT 90
FORWARD 4
BACKWARD 8

Start here

(3 marks)

9 From the list given below, choose which term **best matches** the definition in the left-hand column of the table below. Write your answer in the space provided.

back-up copy	data encryption	query
calibrate	field	RAM
DVD ROM	mail-merging	record
data validation	OCR	ROM
data verification	OMR	web browser
data logging	password	

Definition	Term which best matches the definition
A type of memory that loses its content when the computer is switched off.	
A copy of data or programs in computer readable form, kept in case the working copy is lost or damaged.	
Inserting fields from a database file into a standard letter to produce personalised letters.	
The collection and storage of data at regular, fixed intervals over a period of time.	

(4 marks)

4

Turn over for the next question

10 A university student uses a PC to help plan a budget for the first term. Their first attempt is shown below.

	A	B	C	D	E
1	**Weekly Budget**				
2					
3	**Income**	**Amount**	**Weeks**	**Income per week**	
4	Student Loan (per term)	£2100.00	12	£175.00	
5	Monthly allowance from parents	£150.00	4	£37.50	
6	Weekly wage from part-time job	£32.00	1	£32.00	
7					
8	**Total Income per week**			£244.50	
9					
10					
11	**Spending**	**Amount**	**Weeks**	**Spending per week**	
12	Rent (paid monthly)	£270.00	4	£67.50	
13	Gas/electric bills (paid monthly)	£50.00	4	£12.50	
14	House bills - food etc (per month)	£250.00	4	£62.50	
15	Books etc for university (per term)	£150.00	12	£12.50	
16	Clothes (per term)	£210.00	12	£17.50	
17	Travel (per term)	£120.00	12	£10.00	
18	Leisure, nights out etc.	£50.00	1	£50.00	
19	Leave in bank for unexpected spending	£100.00	12	£8.33	
20					
21	**Total spending per week**			£240.83	
22					
23	**Money left per week**			£3.67	
24					

(a) Tick **one** box to show which type of software package has been used.

	Tick **one** box only
Graphics	
Database	
Spreadsheet	
Multimedia	

(1 mark)

(b) Which cell contains the spending on rent per week?

....

(1 mark)

(c) Which **one** of the following is the formula used in cell D23?

	Tick **one** box only
=D21–D8	
=D8–D21	
=sum(D2:D12)	

(1 mark)

(d) The cell format in cell A1 is text. What cell format is used in cell C12?

....

(1 mark)

(e) Tick **one** box to show a **disadvantage** of using a software package to help work out the budget rather than using a calculator, pen and paper.

	Tick **one** box only
The formulae could be wrong	
The wrong prices could be input	
A virus may corrupt the information	
Multiple printouts could be produced	

(1 mark)

5

Turn over for the next question

11 Three doctors share a surgery that has recently installed a new computer system. A database is about to be purchased on which they plan to store information about their patients.

(a) The doctors are worried about a virus getting into their computer system.
Which **two** of the following best describe what a virus is?

	Tick **two** boxes only
It is a piece of software	
It is a piece of hardware	
It replicates once installed	
It can infect people	
It always damages data	

(2 marks)

(b) Give **one** way in which a computer virus may get into the system.

....

....

(1 mark)

(c) Give **two** possible **advantages** to the doctors of using the database to store patient information rather than store the information on paper.

Advantage 1...

....

Advantage 2...

....

(2 marks)

5

12 An increasing number of supermarket customers are ordering their groceries online.

(a) Complete each of the sentences below.

(i) Ordering groceries online starts with a customer placing an order by

	Tick **one** box only
telephoning the order to the supermarket.	
sending the order by letter to the supermarket.	
sending the order to the supermarket from their PC.	

(1 mark)

(ii) The customer then usually pays for the groceries by

	Tick **one** box only
sending a cheque to the supermarket.	
going to the supermarket and paying by cash.	
the supermarket taking the money from their credit card.	

(1 mark)

(iii) Finally, the customer receives the groceries by

	Tick **one** box only
a van from the supermarket delivering them to their house.	
collecting them from the supermarket at an agreed time.	
collecting them from an agreed pickup point near their house.	

(1 mark)

(b) Give **two** advantages to the **customer** of ordering their groceries online.

Advantage 1 ....

....

Advantage 2 ....

....

(2 marks)

(c) Give **one** disadvantage to the **customer** of ordering their groceries online.

Disadvantage ....

....

(1 mark)

6

13 An increasing number of people use e-mail (electronic mail) as a method of communication. For many of these people it is gradually replacing other means of communication such as fax, telephone and post.

(a) Explain what is meant by the term e-mail.

....

....

(1 mark)

(b) (i) Which **one** of the following is an **advantage** of using e-mail compared to using **post**?

	Tick **one** box only
The e-mail will usually arrive quicker than the post	
The e-mail can be sent worldwide	
The e-mail can contain pictures	

(1 mark)

(ii) Give **one** other advantage of using e-mail compared to using **post**.

....

....

(1 mark)

(iii) Give **one** disadvantage of using e-mail compared to using **post**.

....

....

(1 mark)

4

14 (a) Simulators are used to give ambulance drivers experience of driving an ambulance at high speed.

(i) Which **two** of the following are important reasons why a simulator would be used for this rather than driving on the road?

	Tick **two** boxes only
The driver would not be in any danger using a simulator	
Simulators are widely used throughout the country	
Simulators are also used by the police and the fire brigade	
Road and weather conditions on the simulator can be changed as needed	
The simulator could be used during lunchtime	

(2 marks)

(ii) Simulators use rules built into the controlling software. Which **one** of the following would be a rule that should reasonably be built into this driving simulator?

	Tick **one** box only
All dual carriageway driving must be fast	
Ambulance drivers do not start work until 8 am	
The distance taken to stop will vary with weather conditions	

(1 mark)

(b) Which **one** of the following types of application software is often used for financial modelling?

	Tick **one** box only
Database	
Desktop publishing	
Spreadsheet	

(1 mark)

(c) Applications software can be used for modelling a variety of situations. Explain briefly what is meant by the term **modelling**.

....

....

....

(2 marks)

6

15 A school has decided to store their year 11 examination results on a data handling package. Part of the file they set up is given below.

Pupil name	Registration group	Maths mark (0-100)	English mark (0-100)	Science mark (0-100)
Abbot John	11TB	67	76	70
Afsal Nazir	11BN	64	73	104
Brown Jean	11AS	100	80	87
Carr Susan		37	56	32
Chan Daniel	11GS	48	45	50
Davis Diane	11DG	56	66	62
Dodds Paul	11AS	12	22	11
Doods Gemma	11TB	78		68

(a) There are several mistakes in this information as data validation was not used. Explain what is meant by the term data validation.

....

....

....

(2 marks)

(b) An error has been made in **one** of the Registration group entries.

   (i) State what error has been made.

....

....

(1 mark)

   (ii) Which **one** of the following methods of data validation would have been the most suitable to use to reduce the possibility of such an error?

	Tick **one** box only
Range check	
Check digit	
Data type check	
Presence check	

(1 mark)

(c)   An error has been made in **one** of the Science mark entries.

(i)   State what error has been made.

....

....

(1 mark)

(ii)   Which **one** of the following methods of data validation would have been the most suitable to use to reduce the possibility of such an error?

	Tick **one** box only
Range check	
Check digit	
Data type check	
Presence check	

(1 mark)

(d)   Explain why Pupil name is **not** a suitable key field.

....

....

(1 mark)

Turn over for the next question

7

16 A video shop stores information about its customers in a database table.
As a data user, the video store must register under the 1998 Data Protection Act.

(a) Tick **three** boxes to show which of the following are responsibilities of the video store as a data user.

	Tick **three** boxes only
Information must not be looked at by the video shop staff	
Information must not be excessive for the purpose	
Information must not be transferred to countries outside the European Union	
Information must not contain the name of the customer	
Information must be changed at the request of the customer	
Information must be obtained fairly/lawfully	

(3 marks)

(b) Part of the customer database table is given below.

ID Number	Surname	First name	House No.	Postcode	Date of Birth
0021	Jones	Jon	6	ZZ23 2KJ	20/11/80
0034	Smith	Anne	78	ZZ20 3GT	12/08/75
0156	Ali	Ahmed	17	ZZ16 1KN	06/02/82
0234	Collins	Sarah	2	ZZ23 4PH	31/01/70
0452	Chan	Michael	113	ZZ12 8PR	15/10/84

(i) How many records are shown in this database table?

Answer

(1 mark)

(ii) Which is the key field in this database table?

....

(1 mark)

(iii) Which **one** of the following is the best definition of a key field?

	Tick **one** box only
A key field must be the first field in a database table	
A key field must be a combination of letters and numbers	
A key field must be unique in a database table	

(1 mark)

(c)   As well as the customer table, the video store uses two other linked tables. Name **one** other table it would be sensible for them to use.

....

(1 mark)

(d)   Give **one** reason why the video store should link tables together.

....

....

(1 mark)

Turn over for the next question

8

17 A new computer system has recently been installed into an office. Each member of staff now
has a PC on their desk.

(a) Discuss possible health and safety implications of the use of computers in an office.

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(5 marks)

(b)   Describe what steps can be taken to alleviate some of these problems.

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(4 marks)

9

END OF QUESTIONS