For Examiner's Use

General Certificate of Secondary Education
June 2009

AQA

INFORMATION AND COMMUNICATION TECHNOLOGY 3521/H
(SPECIFICATION A) (FULL COURSE)
Higher Tier
Written Paper

H

Tuesday 19 May 2009   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 black ink or black ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. **Answers written in margins or on blank pages will not be marked.**
- 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.

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

1 (a) Each piece of hardware in the table below is either an input, output or storage device. For **each** put a tick in the correct box. As an example, a mouse is an input device and so a tick is placed in the Input column.

Device	Input	Output	Storage
Mouse	✓		
Hard disk drive			
Laser printer			
Microphone			
Speakers			
Touch sensitive screen			

(5 marks)

1 (b) Name **one** output device **not** given in the table above.

....

(1 mark)

1 (c) Name **one** storage device **not** given in the table above.

....

(1 mark)

7

2 From the list given below, choose the term which best matches the description in the left-hand column in the table below. Write your answer in the space provided.

batch processing   file dumps   real time processing
data validation   generation of master files   sorting files
data verification   merging files   transaction processing
encryption

	Description	Term which best matches the description
(i)	Software used to prevent the use of stolen data	
(ii)	Putting the Transaction file into the same order as the Master file	
(iii)	Process data in time to affect the next input	
(iv)	Keeping previous master files and transaction files in case the current one is lost or corrupted	
(v)	Used for backup of on-line systems	

(5 marks)

5

3 A high street shop that sells DVDs and computer games offers a 10% discount to customers who join their membership scheme.

In the space below, complete the design of a Data Capture Form for people applying to join the shop's membership scheme. Care should be taken to include suitable fields and enough space to fill in their details.

Surname

First name

Address 1

Address 2

Address 3

Turn over for the next question   *(4 marks)*

4

Turn over ▶

4 Lancre Theme Park has decided to produce a leaflet to attract more customers.
They have used a Desktop Publishing package to produce the leaflet shown below.

Lancre Theme Park

20 new and exciting rides for 2009
Over 80 rides available every day
Open daily from 20th April 2009 until 20th October 2009.
Entrance fee
Children under 16 only   £7.99
Adults   £9.99

10 food outlets
Wide variety of shops
Telephone 0123 8989898 or email park.admin@lancreconnet.com for
more details or group reservations

---

4 (a) Give **one** feature of the software that has been used to make the heading 'Lancre Theme Park' stand out.

Feature used ....

(1 mark)

4 (b) Give **one** other feature of the software that could be used to make the sub-heading 'Entrance fee' stand out.

Other feature ....

(1 mark)

4 (c) Give **three** other features of the software that could be used to improve the appearance of the rest of the leaflet.

Feature 1 ....

Feature 2 ....

Feature 3 ....

(3 marks)

5 The 1998 Data Protection Act was introduced to help protect people's right to privacy.

  A Data is obtained for specified and lawful purposes
  B Data where national security is concerned
  C Data is never to be given to anyone
  D Data must not be more than six months old
  E Data can be prevented from being used for direct marketing
  F Data individuals want removed from their record must be removed immediately
  G Data is not under any circumstances to be transferred outside the UK
  H Data is to be kept secure against loss, damage or unauthorised processing
  I Data used for health, education and social work

From the list (**A** to **I**) above, write the letter for each answer in the space given.

5 (a) Give **two** responsibilities placed on data users by the 1998 Data Protection Act.

Responsibility 1 ☐

Responsibility 2 ☐   *(2 marks)*

5 (b) Give **one** right the 1998 Data Protection Act gives to data subjects.

Right of data subject ☐   *(1 mark)*

5 (c) Give **one** exemption from the 1998 Data Protection Act.

Exemption ☐   *(1 mark)*

4

Turn over for the next question

Turn over ▶

6 The Geography department in a school has recently bought two new software packages. One of these is for producing charts and the other is for designing web pages.

6 (a) Which **two** of the following would you expect the chart software to be able to do?

	Tick **two** boxes only
Edit number scales on the axis	
Construct bar charts from tables of data	
Use of brushes	
Freehand drawing	
Calculation of costs	

(2 marks)

6 (b) Two features of the web design software are **hyperlinks** and **hot spots**. Explain briefly what is meant by these terms.

6 (b) (i) Hyperlinks ....

....

6 (b) (ii) Hot spots...

....

(2 marks)

6 (c) Give **one** other feature that you would expect the web design software to have.

....

....

(1 mark)

5

06

Turn over for the next question

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ANSWER IN THE SPACES PROVIDED

7 Betabookz is a company that sells books, CDs and other related items online. Part of its stock database file is shown below.

Stock Number	Item Name	Type of Item	Number in Stock	Selling Price
A1002	The End	Bk	14	£9.99
A1009	Best of the Eagles	CD	12	£7.99
A1013	Super Mario 4	Gm	23	£29.99
A1024	Last Attack	Gm	19	£32.99
A1028	Best of the Beatles	CD	15	£11.99
A1032	Guinness Book of Records	Bk	20	£15.99
A1033	Chaos	Bk	7	£11.99
A1035	Hannah	Bk	5	£3.99
A1037	Bat Out of Hell 2	CD	10	£6.99

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

....

(1 mark)

7 (b) A member of staff tries to add this incorrect record to the database.

Stock Number	Item Name	Type of Item	Number in Stock	Selling Price
A1002	Sign of Four	Bk	5	£5.99

7 (b) (i) State why this record should be rejected.

....

....

(1 mark)

7 (b) (ii) Give **one** method of avoiding this problem.

....

....

(1 mark)

7 (c) A member of staff tries to add this incorrect record to the database.

Stock Number	Item Name	Type of Item	Number in Stock	Selling Price
A1064	My Way	Bk	-3	£7.99

7 (c) (i) State why this record should be rejected.

....

....

(1 mark)

7 (c) (ii) Tick **one** box to show which of the following is a type of check that would be used to detect that this record is incorrect.

	Tick **one** box only
Interval data	
Data spelling	
Data validation	
Digital data	
Data logging	

(1 mark)

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

And
Or
Equals
Less than

Write down the Stock number(s) selected as a result of the following searches.

7 (d) (i) Type of Item **Equals** Gm

....

(1 mark)

7 (d) (ii) Type of Item **Equals** Bk **And** Selling Price **Less than** £9.99

....

(1 mark)

7

Turn over ▶

8 A family uses a PC to help to plan the costs for a holiday. The first attempt is shown below.

	A	B	C	D	E
1	**Family Holiday Plan - 2 weeks self catering**				
2					
3					
4		**Cost each**	**Number needed**	**Total cost per item**	
5	Holiday cost per adult	£369.00	2	£738.00	
6	Holiday cost per child	£179.00	2	£358.00	
7	Insurance per adult	£9.99	2	£19.98	
8	Insurance per child	£4.99	2	£9.98	
9	Trips - family cost	£39.99	3	£119.97	
10	Food/meals - family cost per day	£50.00	14	£700.00	
11	Other expenses per day	£25.00	14	£350.00	
12	Petrol costs to the airport	£40.00	1	£40.00	
13	Airport parking (two weeks)	£70.00	1	£70.00	
14					
15					
16		**Total cost of holiday**		£2,405.93	
17					

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

	Tick **one** box only
Database	
Graphics	
Spreadsheet	
Word processing	

(1 mark)

8 (b) Which cell contains the **total other expenses** for the holiday?

	Tick **one** box only
A11	
B11	
C11	
D11	

(1 mark)

8 (c) The cells in this spreadsheet have been formatted to contain text, number or currency.

State which **one** of these is contained in the following cell.

B13 ....

(1 mark)

8 (d) State the formula which would be contained in the following cell.

D16 ....

(1 mark)

8 (e) The family has set a maximum of £2200 to spend on their holiday. Explain clearly how they could use the spreadsheet to investigate 'what if' situations to help them keep within their budget.

....

....

....

....

(2 marks)

6

Turn over for the next question

Turn over ▶

9 WizzyWorks is a company that produces websites for other companies. Its web designers usually work from home, but once a week they travel by car to the firm's head office in a large town.

9 (a) Tick **two** boxes to show the **advantages** to the web designers of working at home rather than at the company's head office.

	Tick **two** boxes only
They can start work at 9 am	
They can use a computer at home	
They do not have to spend money on travelling to work each day	
They do not have to spend time travelling to work each day	
They do not have to plan their work	

(2 marks)

9 (b) Tick **two** boxes to show the **disadvantages** to the web designers of working at home rather than at the company's head office.

	Tick **two** boxes only
They cannot start work until 9 am	
Work can take longer as it is easier to be distracted at home	
The work is more boring at home	
They will not get a lunch hour when working from home	
They feel out of touch with those who work at head office every day	

(2 marks)

4

*Areas outside
the box will
not be scanned
for marking*

10 A college hopes to attract Year 11 students from a local secondary school. Staff from the college are planning to describe their courses and facilities in a Year 11 assembly. Last year they handed out printed leaflets and talked about the college. This year they are going to give a multimedia presentation.

10 (a) Name **two** pieces of hardware the college staff will need to use to give their multimedia presentation.

Hardware 1 ....

Hardware 2 ....

(2 marks)

10 (b) Describe **two** possible advantages of using a multimedia presentation.

Advantage 1 ....

....

Advantage 2 ....

....

(2 marks)

10 (c) Describe **one** possible advantage of continuing to hand out a printed leaflet and to talk about the college.

....

....

(1 mark)

Turn over for the next question

5

Turn over ▶

11 A firm of solicitors is planning to install a new computerised system. Before they start on the computerisation of the new system, they need to collect information about how their present system works and what will be needed in the new system. Two ways in which this information could be collected are interviews and observation of the existing system.

11 (a) Give **one** advantage of each of these methods of collecting the information.

11 (a) (i) Interviews ....

....

11 (a) (ii) Observation ....

....

(2 marks)

11 (b) (i) Name **one** other method by which this information would normally be collected.

....

(1 mark)

11 (b) (ii) Give **one** advantage of this method.

....

....

(1 mark)

11 (c) (i) The firm's new system must have a suitable user interface. Which **one** of the following is an important factor to be considered when designing the new interface?

	Tick **one** box only
The fees charged by the solicitors	
The cost of the computers	
Help facilities	

(1 mark)

11 (c) (ii) Give **one** other important factor that should be considered when designing the new interface.

....

....

(1 mark)

6

12 A health club uses a computer system to store information about the club's members on a database.

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

12 (a) (i) Field ....

....

12 (a) (ii) Record ....

....

(2 marks)

12 (b) Which **one** of the following would be a **disadvantage** to the health club in using a database to store the information rather than storing the information on paper in filing cabinets?

	Tick **one** box only
Staff could work more flexible hours	
The health club could open for longer hours	
Staff would need training	

(1 mark)

12 (c) Give **two advantages** to the health club in using a database to store the information rather than storing the information on paper in filing cabinets.

Advantage 1 ....

....

Advantage 2 ....

....

(2 marks)

5

Turn over ▶

13 Operating systems are used by all computer systems.

13 (a) Are operating systems hardware or software?

....

(1 mark)

13 (b) In the table below, tick **two** boxes to show tasks that are carried out by all operating systems.

	Tick **two** boxes only
Checks the spelling in word processed documents	
Manages the allocation of CPU time	
Detects the use of wrong formulae in a spreadsheet	
Detects a virus is being downloaded from the Internet	
Manages the system security	

(2 marks)

13 (c) Name **one** type of operating system.

....

(1 mark)

4

14 A car hire firm is going to use a database to store the information it needs to run its business. They have decided to store the data in three linked tables. The three tables they will use are:

Car Details
Customer Details
Billing Details.

14 (a) Give the name of a suitable key field for the following tables.

14 (a) (i) Car Details ....

14 (a) (ii) Customer Details ....

(2 marks)

14 (b) Which **two** of the following fields would you expect to find in the Car Details table?

	Tick **two** boxes only
Name of customer	
Date of birth of customer	
Model of car	
Owner of car hire firm	
Engine size	

(2 marks)

14 (c) Give **one** advantage to the company in using three linked tables rather than just one table.

....

....

(1 mark)

Turn over for the next question

5

Turn over ▶

15 A chain of high street computer shops is about to develop their own high quality website.

15 (a) Describe some of the issues they will need to consider when designing this website.

....

....

....

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(4 marks)

15 (b) Once the website is designed, it will need to be Implemented and Tested. Describe some of the issues they will need to consider when Implementing and Testing this website.

....

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(4 marks)

END OF QUESTIONS

8

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