

Surname		Other Names	
Centre Number		Candidate Number	
Candidate Signature			

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General Certificate of Secondary Education
June 2006

**INFORMATION AND COMMUNICATION TECHNOLOGY 3522/H
(SPECIFICATION B) (FULL COURSE)
Higher Tier**

H



Tuesday 23 May 2006 1.30 pm to 3.30 pm

<p>You will need no other materials. You may use a calculator.</p>

Time allowed: 2 hours

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.

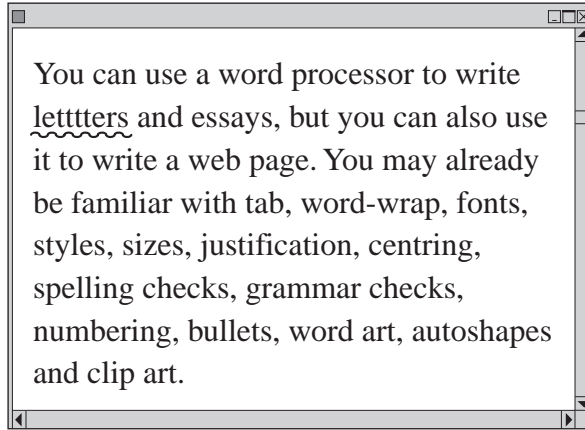
Information

- The maximum mark for this paper is 120.
- 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			
Number	Mark	Number	Mark
1		5	
2		6	
3		7	
4		8	
TOTAL			
Examiner's Initials			

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

- 1 A technician is writing a document using a word processor. The technician has made a mistake.



- (a) (i) A spelling check has identified a mistake in the first sentence. Describe how the technician could correct this mistake.

.....

.....

.....

.....

(2 marks)

- (ii) Describe **two** features of a word processor that could be used to lay out the second sentence so that it is easier to read.

Feature 1:.....

.....

Feature 2:.....

.....

(2 marks)

- (b) Complete the sentence using words from this list.

- CD-R
- CD-ROM
- Format
- Load
- Save

To keep the document, the technician should it on a

(2 marks)

(c) The technician wants to include a bar chart in the document. The bar chart has been created in a spreadsheet.

(i) Write the labels in order to show how a bar chart created in a spreadsheet can be included in a word processor document.

Label	
A	Paste the bar chart
B	Highlight the bar chart in the spreadsheet
C	Position the cursor in the word processor document
D	Copy the bar chart

Label

(2 marks)

(ii) The technician could have used either of these methods:

Method 1: copy and paste

Method 2: cut and paste

Describe **one** similarity and **one** difference in the effect of Method 1 compared with Method 2.

Similarity:.....

.....

Difference:

.....

(2 marks)

Question 1 continues on the next page

Turn over ▶

- (d) The technician creates a macro to be used to emphasise important text. To use the macro, the technician highlights some text and then runs the macro. The macro changes the highlighted text to Times New Roman font, size 18, bold. The colour of the text is changed to blue. This is the macro.

Macro	Edited macro statements
Sub emphasis()	
With Selection.Font	
.Name = "Times New Roman"	.Name = " "
.Size = 18	.Size =
.Bold = True	.Bold =
.Italic = False	.Italic =
.Color = wdColorBlue	.Color =
.Spacing = 0	
.Scaling = 100	
.Position = 0	
.Kerning = 0	
End With	
End Sub	

In the above table, complete the edited macro statements so that the highlighted text will be changed to:

Arial font, size 20, in red italic (but **not** bold).

(5 marks)

2 A student has a desktop computer at home.

- (a) (i) Tick **two** boxes to show which of the following can be used for input to a desktop computer.

	Tick two boxes
Model	
Scanner	
Digital Camera	
Actuator	
Modem	

(2 marks)

- (ii) Name **one** other hardware device that can be used for input to a desktop computer.

.....
(1 mark)

- (b) (i) Tick **two** boxes to show which of the following can be used for output from a desktop computer.

	Tick two boxes
Keyboard	
Sensor	
Model	
Printer	
Speakers	

(2 marks)

- (ii) Name **one** other hardware device that can be used for output from a desktop computer.

.....
(1 mark)

Question 2 continues on the next page

Turn over ▶

(c) The student has a PDA (Personal Digital Assistant).

(i) Tick **two** boxes to show features of a PDA.

	Tick two boxes
A PDA is usually installed in ICT rooms	
A PDA is a portable, handheld hardware device that can fit in your pocket	
Input to a PDA is using a touch screen	
A PDA will have a larger hard disk than a desktop computer	
PDA's usually cost more to buy than desktop computers	

(2 marks)

(ii) Describe **one** other feature of a PDA.

.....

.....

(1 mark)

(d) (i) Tick **two** boxes to show what a PDA should be used for.

	Tick two boxes
To keep track of lessons and appointments	
To investigate whether the use of ICT is justified	
To keep a list of tasks that need doing, such as homework	
To save a folder containing 100 Gbytes of photographic images	
To store all your passwords	

(2 marks)

(ii) Describe **three** other uses of a PDA.

Use 1:

.....

Use 2:

.....

Use 3:

.....

(3 marks)

- (e) PDAs and desktop computers can exchange information so that the data on the PDA is the same as the data on the desktop computer.

Give **one** reason why the student might want to do this.

.....

.....

(1 mark)

15

Turn over for the next question

Turn over ▶

3 A self-employed car mechanic uses a spreadsheet to calculate bills for customers.

	A	B	C	D
1	Customer's name	Mrs Jones		
2	Date	11/03/2006		
3	Credit rating	2		
4			Cost	
5	Parts	spark plugs	£24.50	
6		5 litres engine oil	£16.50	
7		air filter	£400.00	
8		pair of tyres	£68.00	
9	Labour	3 hours @ £30 per hour	£90.00	
10	VAT		£104.83	
11	Total cost		£703.83	
12				

- (a) The mechanic made a mistake when entering the cost of an air filter. An air filter costs £4.00.

Tick **one** box to show a validation check that would prevent this mistake.

	Tick one box
Allow any value	
Allow text less than 4 characters in length	
Allow a number between 0 and 50	
Allow a date between 01/01/2006 and 01/05/2006	
Allow a number between 0 and 500	

(1 mark)

- (b) Give the cell references of **two** cells that should change automatically when the cost of an air filter is changed.

Cell 1:

Cell 2:

(2 marks)

- (c) Write down the formula that would be in cell C11.

.....

(1 mark)

(d) The mechanic has to buy the air filter from an on-line store.

(i) Write the labels in order to show how the mechanic can buy the air filter on-line.

Label	
A	Pay using a credit card
B	Enter the key words: air filter, and press the search button
C	Go to the on-line store using a web browser
D	Look at the search results and find the right air filter

Label

(2 marks)

(ii) Give **two** reasons why the mechanic may want to buy the air filter on-line.

Reason 1:

.....

Reason 2:

.....

(2 marks)

(iii) Give **two** reasons why the mechanic may **not** want to buy the air filter on-line.

Reason 1:

.....

Reason 2:

.....

(2 marks)

Question 3 continues on the next page

Turn over ▶

(e) The mechanic uses a search engine to find where to buy the air filter.

Give **two** reasons why the mechanic may search only websites in the UK.

Reason 1:

.....

Reason 2:

.....

(2 marks)

(f) The mechanic gives customers a credit rating from 1 to 3.

Credit rating	
1	Pays promptly and in full on collecting the car
2	Pays within four weeks of collecting the car
3	Money still owed after four weeks

(i) A customer who pays after four weeks is given the same credit rating as a customer who does not pay.

Describe **one** limitation of this coding system.

.....

.....

(1 mark)

(ii) Design an improved coding system.

.....

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.....

.....

.....

.....

(2 marks)

- 4 The InTrains travel agency arranges trips on steam trains.
The manager of InTrains sends this e-mail to a graphic designer.



- (a) (i) The manager has asked the graphic designer to design a poster to advertise the day trip.

Give **two** reasons why a printed copy of the e-mail would **not** be suitable for advertising the day trip.

Reason 1:

.....

Reason 2:

.....

(2 marks)

- (ii) Write down **three** items of information in the e-mail that must appear in the poster.

Item 1:

Item 2:

Item 3:

(3 marks)

Question 4 continues on the next page

Turn over ▶

- (b) (i) State the type of software that should be used to produce the poster.

.....
(1 mark)

- (ii) Give **two** reasons why the type of software you have chosen is better than a word processor for designing a poster.

Reason 1:

.....

Reason 2:

.....
(2 marks)

- (c) The desktop computer system used to design the poster can print on a local A4 black and white laser printer. It is also connected to a LAN (Local Area Network) and the Internet.

Give **two** reasons why the laser printer might **not** be suitable for printing the poster.

Reason 1:

.....

Reason 2:

.....
(2 marks)

(d) The poster has to be transferred from one computer to another. The poster has a file size of 1.5 Mbytes.

(i) Give **two** reasons why the poster could **not** be transferred on a floppy disk.

Reason 1:

.....

Reason 2:

.....

(2 marks)

(ii) Name **three** types of backing storage that could be used to transfer the poster.

Backing storage 1:

Backing storage 2:

Backing storage 3:

(3 marks)

15

Turn over for the next question

Turn over ▶

5 A school secretary sets up a database to keep track of who owns the cars in the school car park.

(a) Tick **two** boxes to show items of information that must be collected.

	Tick two boxes
The driver's hair colour	
The driver's name	
The car's registration number	
The driver's age	
The size of the car's engine	

(2 marks)

(b) Tick **one** box to show why it is **not** necessary to collect the driver's gender.

	Tick one box
Personal data must be processed fairly and lawfully	
Personal data must be relevant to the purpose for which it is collected	
Personal data should be accurate	
Personal data should not be kept longer than is necessary	
Personal data should be kept secure	

(1 mark)

(c) Design a questionnaire to collect the data.

(4 marks)

Question 5 continues on the next page

Turn over ▶

- (d) The secretary types in the information on the questionnaire into the computer. The secretary then checks what is displayed on the screen against what is written on the questionnaire.

- (i) State the name of this process.

.....
(1 mark)

- (ii) Give **one** reason why this is done.

.....
.....
(1 mark)

- (e) Tick **two** boxes to show which of these statements are true.

	Tick two boxes
The database can be sent to another secretary as an e-mail attachment	
The driver's name would be used as a key field in the database	
The database is the best software to use to draw a picture of the school car park	
The car's registration number would be used as a key field in the database	
The database is the best software to use to write a letter to parents	

(2 marks)

- (f) The school is a primary school and there are only 12 teachers.
A database has been used to keep track of who owns the cars in the school car park.
However, the information could have been written on a piece of paper.

Giving reasons for **and** against, discuss whether a database should be used rather than writing the information on a piece of paper.

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(4 marks)

15

Turn over for next question

Turn over ▶

6 An ICT system counts people as they enter and leave a football stadium.

- (a) Tick **three** boxes to show what the ICT system would need to do to calculate the total number of people in the stadium.

	Tick three boxes
The ICT system adds one to the total when a person enters	
The ICT system adds one to the total when a person leaves	
The ICT system subtracts one from the total when a person leaves	
The total is set to zero before people are admitted	
The total is set to zero when the match starts	
The ICT system subtracts one from the total when a person enters	

(3 marks)

- (b) (i) State one item of information the ICT system needs to know so that it can work out when the stadium is full.

.....

(1 mark)

- (ii) Explain how the ICT system works out when the stadium is full.

.....

.....

.....

.....

(2 marks)

(c) The stadium manager complains that the ICT system is not accurate.

- (i) Sometimes the ICT system shows the stadium is full when it is not, and sometimes it shows there is room for more people when there is not.

Tick **three** boxes to show possible reasons for this.

	Tick three boxes
Stewards and police on crowd control duty at the stadium are not counted	
People leave through 3 m wide doors and cannot be counted accurately	
The ICT system can only count those people who enter through turnstiles	
People who have reserved seats do not attend	
The referees, linesmen and football players are not counted	
Some employees enter and leave the stadium several times during a match	

(3 marks)

- (ii) The manager tests the ICT system to find out if it is accurate.

Describe **two** tests that could be carried out to show that the ICT system is accurate.

Test 1:

.....

Test 2:

.....

(2 marks)

Question 6 continues on the next page

Turn over ▶

- (d) The football club keeps a record of members of the supporters' club using a database. This is a part of the database.

Member Number	Name	Season Ticket Holder	Address
01342	Johnson	No	234 Thornton Lane, Bradford
02675	Wardak	Yes	5 Leeds Gardens, Bradford
44389	Patel	No	84 Leeds Old Road, Huddersfield
82300	Shoard	Yes	156 Bolton Road, Halifax
98763	Smith	Yes	31 Pudsey Avenue, Leeds

- (i) Write down the **Name(s)** in the record(s) selected using this search condition:

Search Condition: **Season Ticket Holder** is No

Name(s) in the record(s) selected:

.....
(1 mark)

- (ii) Give **one** reason why the manager might want to identify those members who do **not** have season tickets.

.....
.....
(1 mark)

- (iii) Write down the **Name(s)** in the record(s) selected using this search condition:

Search Condition: **Address** contains Leeds

Name(s) in the record(s) selected:

.....
(1 mark)

- (iv) The manager wants to know which members live in Leeds.

Explain why the search condition '**Address** contains Leeds' will also identify members who do **not** live in Leeds.

.....
.....
(1 mark)

7 A college has a ground floor computer room with windows at the back of the building overlooking a car park. The computer room has a door that opens into the foyer just opposite the main door of the building. A moderately busy main road with some parking restrictions runs past the main door.

- (a) (i) Tick **two** boxes to show security precautions that could be taken to prevent the theft of hardware.

	Tick two boxes
Open a cyber café in the foyer	
Arrange an Open Day so the general public can look round the computer room	
Put reflective security foil on the windows to stop people looking into the computer room and to make it harder to break the windows	
Remove parking restrictions on the main road so that it is easier to park	
Make sure there is always a security guard in the foyer	

(2 marks)

- (ii) Describe **four** other security precautions that could be taken to prevent the theft of hardware.

Security precaution 1:

.....

Security precaution 2:

.....

Security precaution 3:

.....

Security precaution 4:

.....

(4 marks)

Question 7 continues on the next page

Turn over ▶

- (b) In the computer room, the computers connect to a wireless LAN (Local Area Network) and the Internet.

Describe the security precautions that could be taken to protect software and data.

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(3 marks)

- (c) The wireless LAN is a star network. Users can print their work and access the Web. Draw a labelled diagram of the LAN showing at least 3 computers, a file server, and other features of the LAN.

(3 marks)

- (d) The computer room has 20 computers and these can use the software on the file server.

Tick **three** boxes to show which types of software licence will always be legal.

	Tick three boxes
A 15 user software licence	
Licences for a tablet computer	
Shareware installed by a student	
A 25 user software licence	
A site licence	
Freeware	

(3 marks)

15

Turn over for next question

Turn over ▶

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