

Answer ALL questions

1. A graphical user interface (GUI), uses:

- windows
- icons
- menus
- pointers.

(a) The descriptions of these items are given in the table. Complete the table to match the items to their descriptions.

Description	Item
Show a position on the screen	
Give a list of possible actions	
Symbols which may be activated to launch a program	
Re-sizable areas of the screen	

(4)

(b) State **two** other types of user interface.

Interface 1

Interface 2

(2)

(c) Give **two** reasons why a **young** child might prefer a GUI to any other type of interface.

Reason 1

.....

Reason 2

.....

(2)

Q1

(Total 8 marks)



2. A PC can access data on the following storage media:

- floppy disk
- hard disk
- CD-RW
- DVD-RW
- flash memory.

Possible uses for these media are given in the table. Complete the table to match each storage medium to a use.

The first one has been done for you. Answers must **not** be repeated.

Use	Medium
Storing a setup file for a network card	floppy disk
Storing a full length feature film	
Storing 1000 photographs in a digital photo album	
Storing a word processor's dictionary	
Storing IGCSE coursework files for transfer between home and school	

(Total 4 marks)

Q2



3. An electronics company keeps its stock on rows of racks in a warehouse. The warehouse manager uses a database to record where each item is kept. Part of the database is shown below.

Name	Bar code	Stock code	Row	Rack	Stock level
36-inch plasma TV	5010654776657	TVP36-PA	5	7	54
42-inch plasma TV	5010654477626	TVP42-PA	5	9	26
24-inch CRT TV	5010654472978	TVC24-PA	4	4	46
16-inch combined TV / DVD	3629879565664	TVD16-SS	6	7	22
18-inch combined TV / DVD	3629879565546	TVD18-SS	6	8	24
19-inch lcd TV	3934345266759	TVL19-FS	3	3	44
21-inch lcd TV	3934345266792	TVL21-FS	3	4	35

(a) State the number of records shown. (1)

(b) State the number of fields in a record. (1)

(c) Use examples from this database to explain the difference between a field and a record.

 (2)

(d) Database records may sometimes be added, deleted, or amended. Give an example to show when each type of change would be needed for this database.

Addition

Deletion

Amendment

(3)



(e) Explain why the price of an item is **not** held in the bar code.

.....
.....

(2)

(f) Give a reason why the manager refers to items by their stock code, rather than by their bar code.

.....
.....

(1)

(g) The warehouse manager needs to print a report showing how many plasma TVs are in stock and where they are stored. To do this he must search the database.

(i) State which field he would search.

.....

(1)

(ii) Suggest a suitable search condition for this field.

.....

(1)

(Total 12 marks)

Q3

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4. A company sells kitchen equipment. Customers may place an order by using one of the following methods:

Method 1 – completing a form on the company web site

Method 2 – posting an order form from a catalogue

Method 3 – telephoning a sales line

Payment is made by credit card in each case.

For each method of placing an order, state **one** advantage and **one** disadvantage to the customer.

(a) Web site

Advantage

Disadvantage

(2)

(b) Post

Advantage

Disadvantage

(2)

(c) Telephone

Advantage

Disadvantage

(2)

(Total 6 marks)

Q4



5. A copy of this examination paper is held in a computer's memory in binary. Binary is represented as bits and bytes.

(a) Explain what is meant by a **bit**.

.....
.....
(2)

(b) State

- (i) how many bits there are in a byte,
 - (ii) how many bytes there are in a kilobyte.
- (2)

(c) Text characters in the paper are held as ASCII codes. State how many bytes are used to hold a text character in ASCII.

.....
(1)

(d) Some parts of this paper would not be held in ASCII. Give a specific example of a part of the paper which would **not** be held as ASCII.

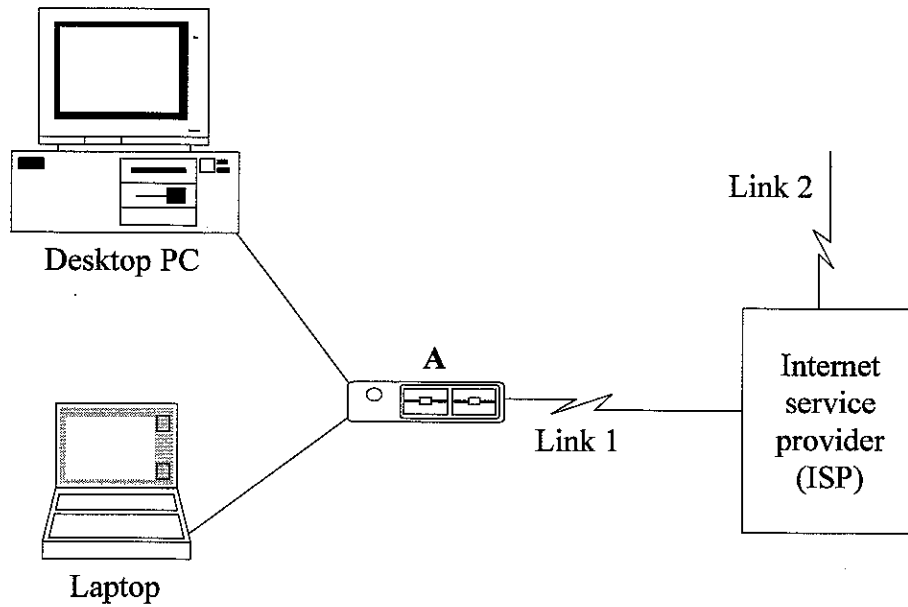
.....
.....
.....
(2)

(Total 7 marks)

Q5



6. The diagram shows a home network which is connected to an Internet service provider (ISP) by Link 1.



(a) The item labelled **A** can connect **one** computer at a time to the ISP. Name the piece of equipment labelled **A**.

..... (1)

(b) If another piece of equipment were added to item **A**, **both** computers could connect to the ISP at the same time. Name the piece of equipment which needs to be added.

..... (1)

(c) State what Link 1 is.

..... (1)

(d) State what Link 2 connects the ISP to.

..... (1)

(e) State **two** items of software needed for the computers to connect to the ISP.

Item 1

Item 2

(2)

(Total 6 marks)

Q6



7. A school network has two servers. The first server holds the staff and students' work files. The second server holds backup files.

(a) The staff and students' work files occupy 10 Gb of disk space and are backed up to the second server.

(i) The files are backed up daily. Explain why a backup is made daily.

.....

 (2)

(ii) The files are backed up at midnight. Explain why this is a good time to backup the files.

.....

 (2)

(b) The first server has a hard drive failure and all of its contents are lost. The IT technician performs the following actions to restore the system. The actions are **not** shown in the correct sequence.

- A Run the backup software to reload the work files over the network
- B Reinstall the operating system
- C Replace and format the hard drive
- D Rebuild the network connections

Complete the following table to show the actions in the correct sequence. The first one has been done for you.

Sequence	Action
First	C
Second	
Third	
Fourth	

(3)

(Total 7 marks)

Q7



8. Fans of a popular television programme have set up a number of web sites. The sites are designed to attract other fans of the programme.

(a) When fans enter one of the sites they are greeted by a clip from a recent programme. Describe **three other** design features that the web site developers could use to make the sites attractive to fans.

Feature 1

Feature 2

Feature 3

(3)

(b) The sites have several Internet services which attract fans to them. For example, the sites belong to a web ring that enables fans to move easily between programme-related sites. State **three other** Internet services that would attract fans. In each case, describe how fans would use the service.

Service 1

Use

Service 2

Use

Service 3

Use

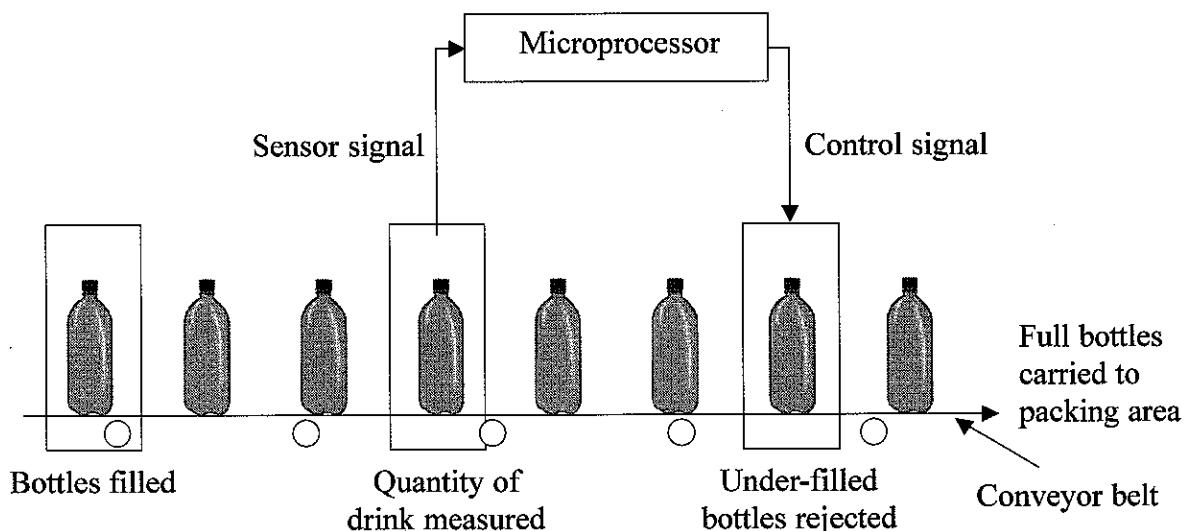
(6)

(Total 9 marks)

Q8



9. A soft drinks company has an automatic bottling machine. Part of it is shown in the diagram below. The bottles move from left to right.



(a) State a suitable sensor for measuring the quantity of drink in each bottle.

..... (1)

(b) Describe a suitable mechanism for removing under-filled bottles from the conveyor belt.

.....

 (2)

(c) Describe the processing that must take place for the microprocessor to decide whether to reject a bottle.

.....

 (3)

(d) State **one** essential piece of information that is needed to ensure the correct bottle is rejected after an under-filled bottle is detected.

..... (1)

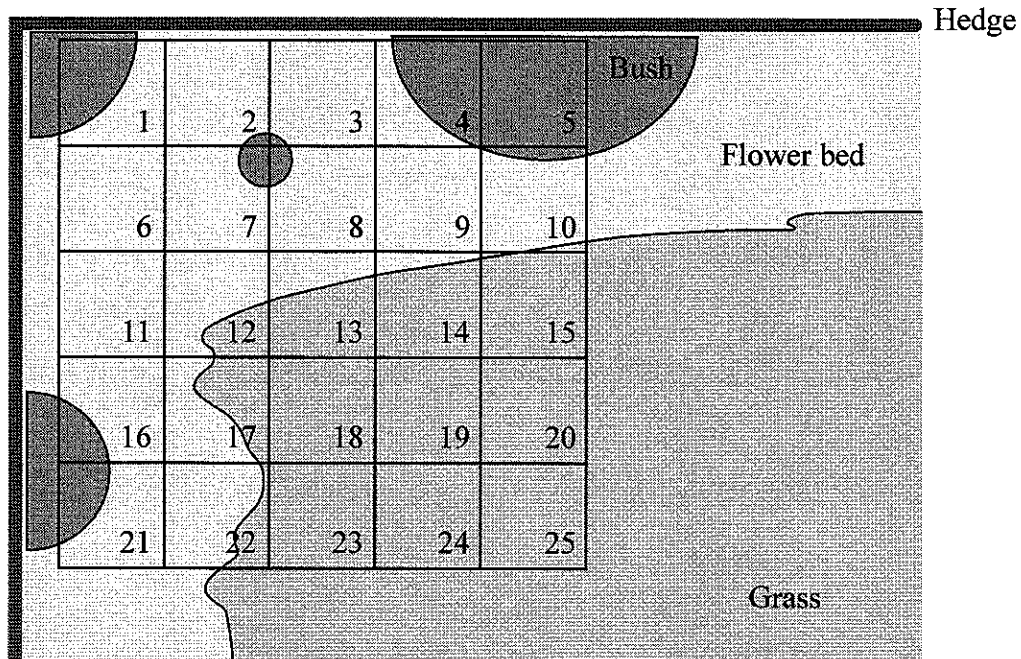
(Total 7 marks)

Q9



N 2 6 2 5 6 A 0 1 1 1 6

10. Twenty-five biology students are given the task of recording the position of snails in a square patch of garden. The patch measures five metres by five metres and is divided by lengths of string into 25 one-metre squares. The layout is shown below.



Garden showing one-metre grid squares

There are four different types of snail in the garden. Each student is given one square and must record how many snails of each type are present in that square. The task will be repeated every two hours throughout the day.

(a) Design a data collection form for a student to use.

(5)



(b) The data is encoded for storage on a computer. Give **three** reasons why the data is encoded.

Reason 1

Reason 2

Reason 3

(3)

Q10

(Total 8 marks)

11. Some PC manufacturers include fingerprint scanners in their machines. These are used to log on instead of entering user names and passwords.

(a) The fingerprint scanner may be bypassed, so that a user can log on using the keyboard. Give **two** reasons why this facility is needed.

Reason 1

.....

Reason 2

.....

(2)

(b) State **two** other biometric methods that could be used to log on to a PC.

Method 1

Method 2

(2)

(c) Once logged on, a user may still not be allowed to view the contents of a file. Encryption is one method of preventing a user from viewing a file's contents.

(i) Explain what is meant by **encryption**.

.....

.....

(2)

(ii) State **one** other method of preventing a logged-on user from viewing a file's contents.

.....

.....

(1)

Q11

(Total 7 marks)



12. The manager of a shoe shop uses a spreadsheet to help her with stock control. Part of the spreadsheet is shown below.
 Each cell is named by a column letter and a row number. For example, the word Black is in the cell named A2.

	A	B	C	D	E	F	G
1	Ladies court shoe	Stock code	Size (cm)	Current stock	Re-order level	Maximum stock	Required order
2	Black	CRTBL01	18-20	11	8	25	
3		CRTBL02	21-23	16	8	25	
4		CRTBL03	24-26	13	8	25	
5		CRTBL04	25-29	9	8	25	
6	Red	CRTRD01	18-20	16	6	20	
7		CRTRD02	21-24	14	6	20	

- (a) When the manager first filled in the sheet, she found that cell C2 displayed '-2' when she typed in the size 18-20. Suggest how she could make the shoe sizes in column C display as shown in the table.

.....

 (2)

- (b) The spreadsheet is linked to a database which holds more details about each shoe type.

- (i) State which cell or cells would be used for the link.

.....
 (1)

- (ii) Explain your choice.

.....

 (2)



At the end of each day, the manager uses the spreadsheet to calculate how much stock needs to be ordered.
For example, if she sells 5 pairs of black shoes, size 18-20, the Current stock in D2 will change from 11 to 6.
This is below the Re-order level of 8, and a Required order of 19 will appear in G2.
Nineteen pairs of shoes are required to bring the Current stock up to the Maximum stock level.

(c) The number in cell G2 is calculated by an IF function.
The IF function takes the form of IF (condition / true / false)

(i) State the formula used in the **condition** part of the function.

.....
(2)

(ii) State the formula used in the **true** part of the function.

.....
(2)

(iii) State what would be in the **false** part of the function.

.....
(1)

(Total 10 marks)

Q12

PLEASE TURN OVER FOR QUESTION 13



13. Mr James bought a new laptop, connected it to a broadband Internet connection and started using it. After a week, he noticed that it was slowing down.

Mr James called a service engineer who told him that the laptop had been infected by three dialers, two viruses, ten pieces of spyware and a mail worm.

The engineer told Mr James that a dialer was a program which would try to stop his Internet connection and then reconnect through a more expensive telephone number. He advised Mr James to install a firewall to prevent dialers from working.

State what the engineer should say about the following, and how to avoid them.

(a) Viruses.

.....
.....
.....
.....

(3)

(b) Spyware.

.....
.....
.....
.....

(3)

(c) Mail worms.

.....
.....
.....
.....

(3)

(Total 9 marks)

Q13

TOTAL FOR PAPER: 100 MARKS

END

