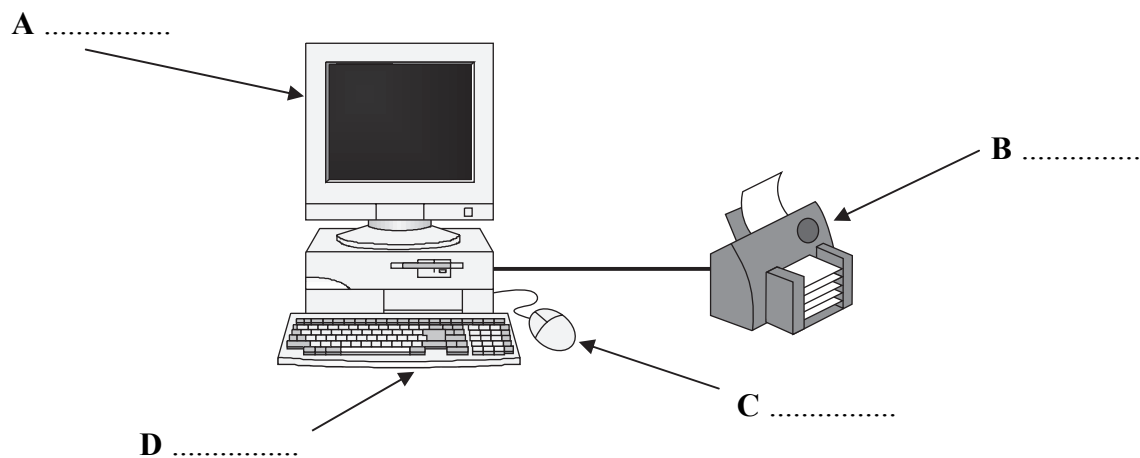




**Answer ALL questions**

1. (a) The diagram below shows a computer and its input and output devices.

Label devices **A**, **B**, **C** and **D**.



(4)

(b) For each device tick (✓) the box to show if it is an input device or an output device.

Device	Input device	Output device
<b>A</b>		
<b>B</b>		
<b>C</b>		
<b>D</b>		

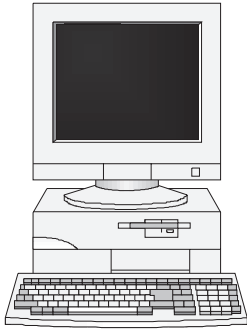
(4)

Q1

(Total 8 marks)



2. Read the following advertisement.

<p>Universal Computers 3.6 GHz Processor 256 Mb RAM Plasma Screen</p>	
---	--

- (a) A computer has two types of memory: RAM and ROM.
- (i) One use of RAM is to store data. State **one** other use.
- ..... (1)
- (ii) State the difference between RAM and ROM.
- ..... (1)
- (b) State **two** advantages of a plasma screen compared with a normal (CRT) screen.
- Advantage 1 .....
- Advantage 2 .....
- (2) **Q2**
- (Total 4 marks)

3. Operating systems have become more user friendly with the development of graphical user interfaces (GUI).
- Give **four** features of a graphical user interface that make it user friendly.
- (i) .....
- (ii) .....
- (iii) .....
- (iv) .....
- (Total 4 marks) **Q3**



4. The diagrams represent two local area networks (LANs). One of them is a star network. The other is a bus network.

(a) Clearly label the server in the star network. (1)

(b) The lines represent the cables connecting the terminals.

(i) State what happens in the star network when the cable is broken at X.

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

(ii) State what happens in the bus network when the cable is broken at Y.

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

(c) A network can be either a local area network (LAN) or a wide area network (WAN).

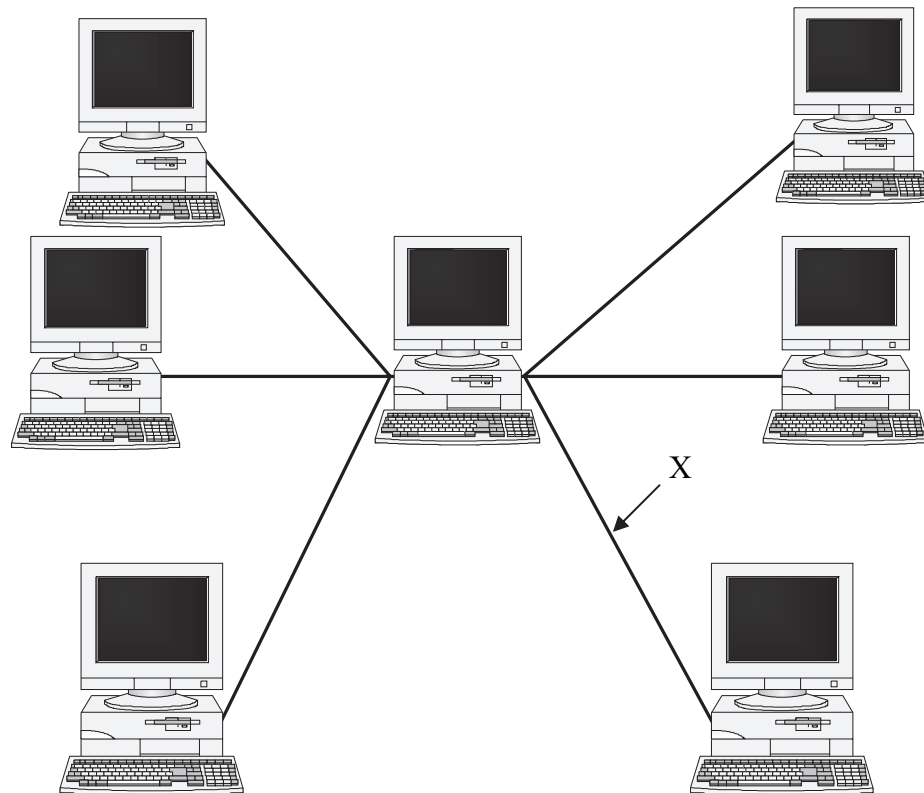
For each network location, tick the box (✓) to show if it is part of a LAN or part of a WAN.

Network Location	LAN	WAN
Classroom not connected to the Internet		
Internet		
Cash Machine (ATM)		
Ticket Office for an airline		

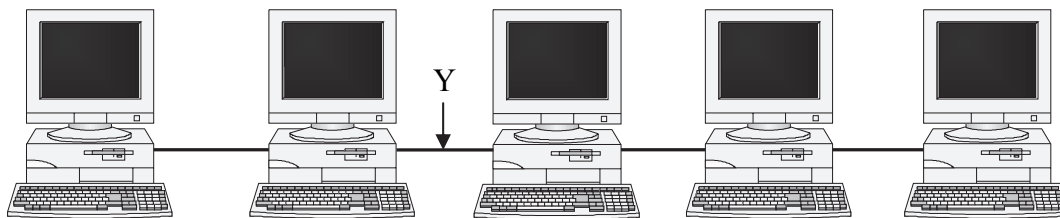
(4)



Leave blank



Star Network



Bus Network

(Total 9 marks)

Q4



5. The Internet is widely used in schools and colleges.

(a) (i) State **one** problem which might occur when students have uncontrolled access to the Internet.

.....  
.....  
**(1)**

(ii) Explain how this problem may be prevented.

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

(b) A teacher enters her user name and password to access the Internet.

(i) State **one** reason why the password should be changed regularly.

.....  
**(1)**

(ii) Explain why the new password must be keyed in twice before the computer accepts it.

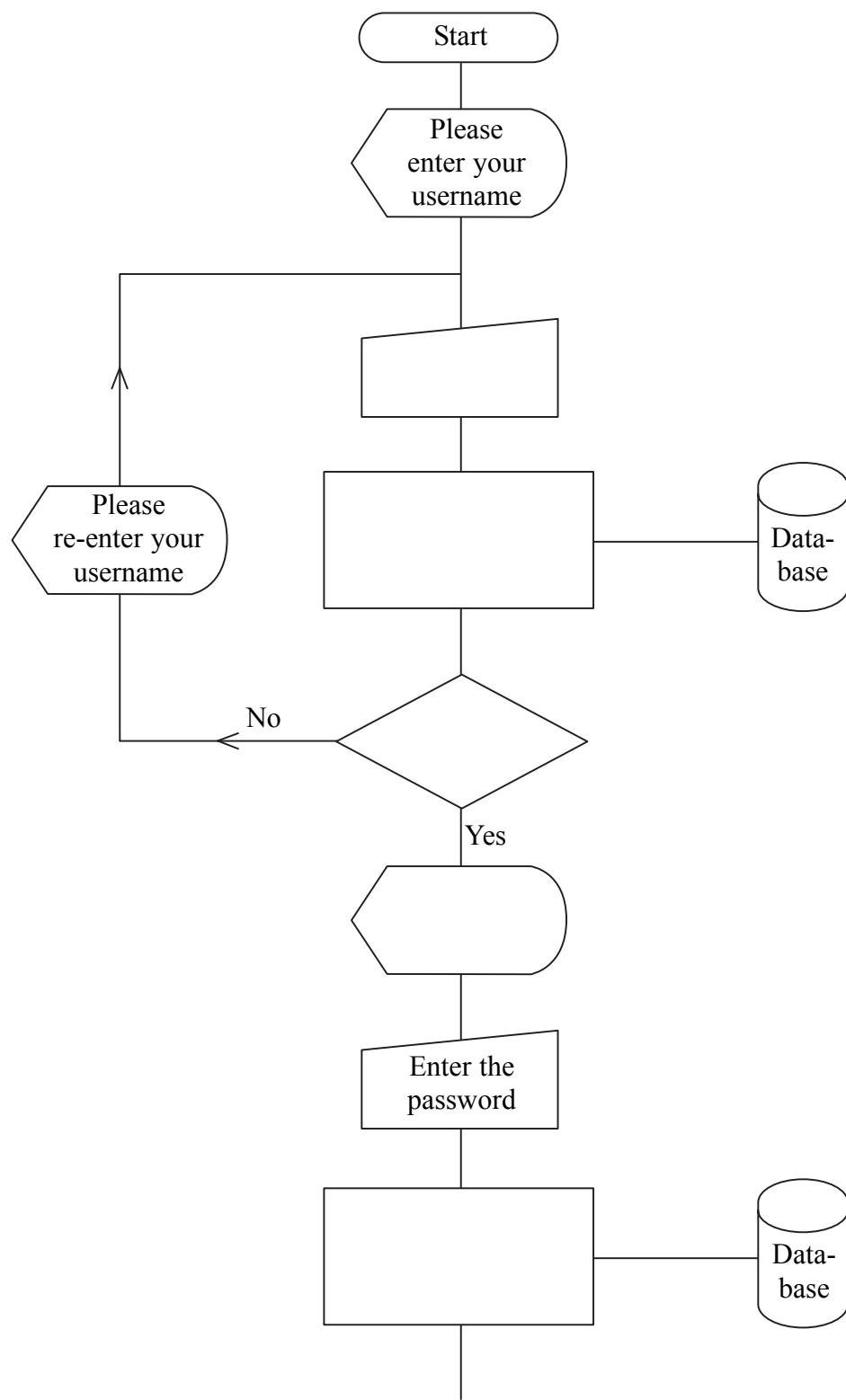
.....  
.....  
**(1)**

(c) A teacher enters her username and password to access the Internet. The flowchart is intended to show the first part of this process. Place the letters A–E in the appropriate flowchart boxes.

- A check the password
- B search for username
- C enter the username
- D “please enter your password”
- E is the username in the database?



Leave blank



(5)

Q5

(Total 10 marks)

--	--



Leave blank

6. (a) A computer user wishes to connect to the Internet.

State **one** item of hardware and **one** type of software that the user needs to connect to the Internet.

Hardware ..... (1)

Software ..... (1)

(b) People who buy goods using the Internet are worried about paying by credit card.

Give **two** reasons why they might be worried.

(i) .....  
.....

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

(Total 4 marks)

Q6





Leave blank

7. A café has computer terminals to enable customers to access the Internet. The owner allows drinks and food to be served to customers whilst they are using the terminals.

(a) Give **one** safety precaution that must be in place to protect the terminals.

.....  
(1)

(b) The owner has considered possible health risks to customers. The health risks are eyestrain, backache and repetitive strain injury (RSI). Give **two** ways of reducing each risk. **Do not repeat your answers.**

(i) Eyestrain

Reduction 1 .....

Reduction 2 .....

(2)

(ii) Backache

Reduction 1 .....

Reduction 2 .....

(2)

(iii) Repetitive strain injury (RSI)

Reduction 1 .....

Reduction 2 .....

(2)

(Total 7 marks)

Q7



Leave blank

8. A small robot controlled by a computer is placed in a maze. The robot travels through the maze and learns the correct path.

(a) The robot detects obstacles using a built-in sensor. State **one** sensor that could be used by the robot and describe how it would detect obstacles.

Sensor ..... (1)

Method of detection ..... (2)

The sensor produces a continuously varying signal but the computer requires digital information.

(b) State the name of the interface device required.

..... (1)

(Total 4 marks)

Q8



Leave blank

9. A college uses an information system that holds large amounts of data about students and staff.

(a) *Validation* and *verification* are carried out on the data.

(i) Describe the validation process.

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

(ii) Describe the verification process.

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

(b) Describe **two** measures that could be taken to protect the data against deliberate theft or corruption.

(i) .....  
(ii) .....  
(2)

(c) Describe **two** measures that could be taken to protect the data against accidental loss.

(i) .....  
(ii) .....  
(2)

(Total 8 marks)

Q9



**BLANK PAGE**



10. Shops often use computerised systems to add up sales, produce receipts and control the level of stock. When goods are purchased they are taken to the checkout or point of sale (POS) terminal.

(a) A bar code scanner is part of a point of sale terminal. List **three** other devices that belong to a point of sale terminal.

- (i) .....
  - (ii) .....
  - (iii) .....
- (3)**

(b) Some goods have bar codes similar to this.



State **two** items of data encoded in a bar code.

- (i) .....
  - (ii) .....
- (2)**

(c) Point of sale systems have brought advantages to shops and customers.

(i) State **one** advantage for the customer.

.....  
.....

**(1)**

(ii) State **two** advantages for shops.

Advantage 1 .....

.....

Advantage 2 .....

.....

**(2)**

**(Total 8 marks)**

Q10



11. Serina is organising a disco to raise money. She wishes to know the minimum number of tickets that must be sold to make a profit of \$120.

Serina has created this spreadsheet to help her.

	A	B	C	D	E	F	G
1	<b>No. of tickets sold</b>	<b>Selling price (\$)</b>	<b>Total sales (\$)</b>	<b>Cost of disco (\$)</b>	<b>Cost of printing (\$)</b>	<b>Total cost (\$)</b>	<b>Profit (\$)</b>
2	0	5.00	0.00	60.00	0.00	60.00	-60.00
3	10	5.00	50.00	60.00	5.00	65.00	-15.00
4	20	5.00	100.00	60.00	10.00	70.00	30.00
5	30	5.00	150.00	60.00	15.00	75.00	75.00
6	40	5.00	200.00	60.00	20.00	80.00	120.00
7	50	5.00	250.00	60.00	25.00	85.00	165.00

(a) Choose words from the list to complete the sentences.

- number
- text
- spreadsheet
- formula
- model

(i) In the spreadsheet, CELL C1 contains .....

(ii) In the spreadsheet, CELL B7 contains a .....

(iii) In the spreadsheet, CELL C3 contains a .....

**(3)**

(b) State how many tickets Serina must sell to make a profit of \$120.

.....

**(1)**



Leave blank

(c) Serina used a formula to work out the total cost in column F.

Select from the following formulae the one that could be used to calculate the total cost of 10 tickets.

- 1  $D3 + E3$
- 2  $E2 * D2$
- 3  $D3 * E3$

.....  
(1)

(d) Serina changes the selling price in column B to \$7.00.

Give **two** other columns which would change as a result.

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

Q11

(Total 7 marks)



Leave blank

12. *Homes International* is a magazine that advertises houses for sale around the world. Agents travel to locations and e-mail photographs to the head office in London.

(a) Name a suitable input device for the agents to use.

Give **two** reasons for your choice.

Name ..... (1)

Reason 1 .....

Reason 2 ..... (2)

(b) The agents are asked to compress photograph files before e-mailing them.

Give **two** reasons why these files should be compressed.

Reason 1 ..... (2)

Reason 2 ..... (2)

(c) The agents need to make backups of their photographs.

(i) Name **one** suitable storage device for this purpose. .... (1)

(ii) State **one** feature that makes it suitable. .... (1)

(iii) Explain why backups are necessary. .... (2)

(Total 11 marks)

Q12





Leave blank

13. Several schools and colleges are considering the use of video conferencing.

(a) Explain the term video conferencing.

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

(3)

(b) The schools and colleges already have networks consisting of linked computers but have no video conferencing facilities.

Give **three** additional items of hardware needed for video conferencing.

(i) .....

(ii) .....

(iii) .....

(3)

Q13

(Total 6 marks)



Leave blank

14. Computers can be used to collect data from experiments.

(a) Give **three** reasons why computers are used for this purpose.

(i) .....

(ii) .....

(iii) .....

(3)

(b) Give **one** example of data logging.

.....

(1)

(c) Describe how information technology could be used to display, in a printed format, an analysis of the data logging.

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

(4)

(d) State, with a reason, a suitable type of printer for printing the analysis.

Printer .....

Reason .....

(2)

Q14

(Total 10 marks)

TOTAL FOR PAPER: 100 MARKS

END



**BLANK PAGE**



N 2 2 1 1 3 A 0 1 9 2 0

**BLANK PAGE**

