INFORMATION AND COMMUNICATIONS TECHNOLOGY B
PAPER 2 (UNIT 2380)
HIGHER TIER

1995

Specimen Paper 2003

Additional materials: None.
Candidates answer on the question paper.

TIME 1 hour 30 minutes

Candidate Name	Centre Number	Candidate Number

INSTRUCTIONS TO CANDIDATES

- Write your name in the space above.
- Write your Centre number and Candidate number in the boxes above.
- Answer all the questions.
- Write your answers, in blue or black ink, in the spaces provided on the question paper.
- Read each question carefully and make sure you know what you have to do before starting your answer.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [ ] at the end of each question or part question.
- The total number of marks for this paper is 100.

1 Most retail outlets use an EPOS (electronic point of sale) system. Briefly describe what an EPOS system is, giving its **location** and **main hardware components**.

_____

_____

_____

_____

_____

_____

_____

_____

[8]

2 **(a)** Explain **what a barcode is**, its **purpose**, and **how it is read**.

_____

_____

_____

_____

_____

_____

[4]

(b) Suggest **four** reasons why retail outlets often have a keyboard linked to the barcode reader.

_____

_____

_____

_____

[4]

(c) Explain how the introduction of barcodes has **reduced** the need for a large number of checkout points in retail outlets.

_____

_____

_____

_____

_____

[3]

3 Retail outlets often combine **EFTPOS** systems with their EPOS systems.

(a) What does **EFTPOS** stand for?

_____

[1]

(b) Describe the **advantages** and **disadvantages** to the customer of an EFTPOS system in a retail store.

_____

_____

_____

_____

_____

_____

[6]

(c) Describe the **advantages** to the **retailer** of an EFTPOS system.

_____

_____

_____

_____

[4]

(d) Describe **one benefit** to the retailer of offering customers cashback facilities.

_____

_____

_____

[3]

(e) Why is **secure** communication between **competing banks** a vital part of the EFTPOS system?

_____

_____

_____

[3]

(f) Describe **one** system used by the EFTPOS system to exchange data between banks.

_____

_____

_____

[2]

4 In the context of retailing, describe **two advantages** and **two disadvantages** of moving from a cash based system to a computerised electronic fund transfer system.

_____

_____

_____

_____

_____

_____

_____

[8]

5 A customer takes seven items of clothing to the check out. The items are scanned, individual and total values are displayed, payment is made by credit card and the printer prints out the itemised bill. Draw a flow chart to describe the operation of a retail outlet stock control and customer payment system as described.

[10]

BLANK PAGE

6 **(a)** Briefly describe **three advantages** to a store of issuing its regular customers with loyalty cards.
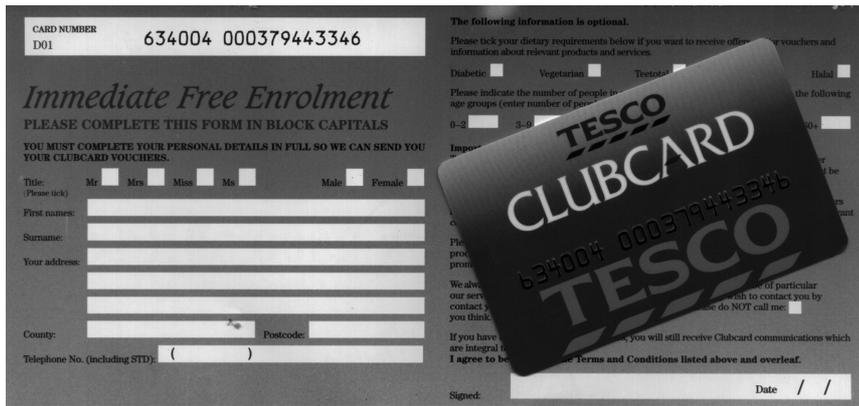
[3]

(b) **(i)** To comply with the Data Protection Act, what **step** must a retail outlet take when it introduces a loyalty card scheme?

[1]

(ii) List **four** guiding principles of the Data Protection Act.

Principle 1_____

_____ [1]

Principle 2_____

_____ [1]

Principle 3_____

_____ [1]

Principle 4_____

_____ [1]

(c) State **three rights** that Individual people have in terms of personal privacy when completing a store loyalty card application form.

_____

_____

_____

_____

_____

_____

_____

[3]

7 List **five** ways in which electronic systems can help a retailer to maximise sales of goods.

Way 1 _____

_____ [1]

Way 2 _____

_____ [1]

Way 3 _____

_____ [1]

Way 4 _____

_____ [1]

Way 5 _____

_____ [1]

8 Describe **three advantages** and **three disadvantages** of increased computerisation of shopping, from the point of view of a **shop assistant**.

Advantages _____

_____

_____

_____

_____

_____

[6]

Disadvantages _____

_____

_____

_____

_____

_____

[6]

9 **(a)** Explain why backup and security are so important in electronic retailing.

_____

_____

_____

_____

_____

[4]

(b) Describe **three** methods used by retailers to ensure that data is not lost or destroyed.

_____

_____

_____

_____

_____

[4]

10 **(a)** Modern retailers use ICT systems in a number of ways. Other than use at the checkout, suggest **four** ways that ICT can be used.

_____

_____

_____

_____

_____

[4]

(b) Why might a retail outlet consider Internet sales alongside conventional business?

_____

_____

_____

[2]

(c) Describe **two** concerns that a retail outlet might have in moving towards Internet business.

_____

_____

_____

[2]

Oxford Cambridge and RSA Examinations

General Certificate of Secondary Education

INFORMATION AND COMMUNICATIONS TECHNOLOGY B
PAPER 2 (UNIT 2380)
HIGHER TIER
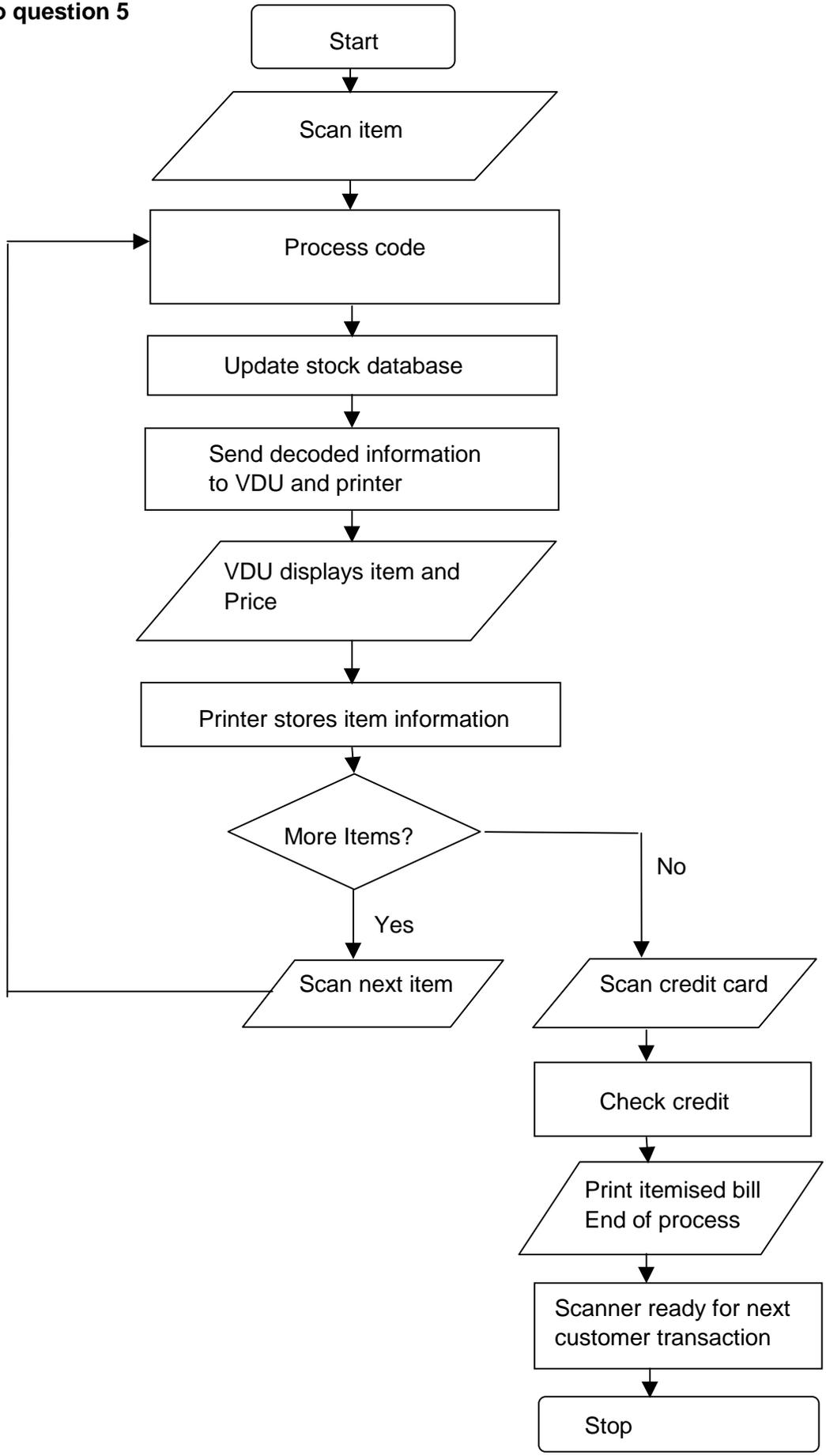
1995

MARK SCHEME

Specimen Paper 2003

1		1 mark for location then marks will be awarded for each valid point that uses correct terminology, up to a maximum of 1 marks. Markers should indicate valid points with a tick. Sample answer with valid points in bold: The EPOS system is **located at the check out** and consists of a **keyboard, digital display, scanner** able to read barcodes, a **credit/debit card reader**, a **printer** and a **money drawer**. It is a combined system for calculating how much each customer has **bought and producing printed information about this**, and at the same time **deducting stock** from stock records. EPOS systems also **calculate change** to be given and can take **electronic payments** through the credit/debit card reader.	[8 marks] AO3
2	a	1 mark for what a barcode is then marks will be awarded for each valid point, related to purpose and use, that uses correct terminology, up to a maximum of 3 marks. Markers should indicate valid points with a tick. Sample answer with valid points in bold: A barcode consists of a number of parallel **lines of different widths**, marked on each item for sale. Each bar represents a **number which in turn reflects a code for the item**. As each item is scanned by passing it **over a scanner** which, using an **infrared laser beam**, reads the barcode.	[4 marks] AO3
2	b	1 mark for each valid reason, that uses correct terminology, up to a maximum of 4 marks. Markers should indicate valid reasons with a tick. Sample answer with valid points in bold: Sometimes **barcodes will not scan**. Where items are **reduced**, manual entry of codes is necessary. Some items, such as fresh bakery goods**, may not have barcodes** and have to be entered manually. Labels may be **lost or missing**.	[4 marks] AO3
2	c	1 mark for each valid point, that uses correct terminology, up to a maximum of 3 marks. Markers should indicate valid reasons with a tick. Sample answer with valid points in bold: As there is **no need for anyone to input the data** using keyboard or mouse, the operation of data entry is **speeded up considerably**, enabling checkout staff to process **more customers** more **accurately**.	[3 marks] AO5
3	a	Electronic fund transfer at point of sale.	[1 mark] AO3
3	b	1 mark for each valid point, that uses correct terminology, up to a maximum of 3 marks for advantages three for disadvantages. Markers should indicate valid reasons with a tick. Sample answer with valid points in bold: **No cash is required**, nor a **cheque book** that has to be **filled in**. Main disadvantage is that money is **electronically charged** to the customer's account straight away and in the case of the debit card, is **deducted from the account immediately**, whereas **cheques take a number of days** to be presented and cleared. A **cashback facility** is available to customers in many large retail outlets and this means that customers do not have to make another trip to a **cash machine or bank**. There is **no charge for this facility**, making it particularly useful for people who **do not live near** their own bank.	[6 marks] AO4

3	c	1 mark for each valid point, that uses correct terminology, up to a maximum of 3 marks for advantages. Markers should indicate valid reasons with a tick. Sample answer with valid points in bold: Retailer receives **immediate**, **secure** payment for goods. The system **checks that funds are available** in the customer's account. There is **no manual adding** up of totals sold.	[4 marks] AO4
3	d	1 mark for each valid point, that uses correct terminology, up to a maximum of 3 marks. Markers should indicate valid reasons with a tick. Sample answer with valid points in bold: This is an immediate way for the retailer to **turn cash into credited finances** in the bank without the need to **count** and **carry money** physically to a bank branch.	[3 marks] AO4
3	e	1 mark for each valid point, that uses correct terminology, up to a maximum of 3 marks. Markers should indicate valid reasons with a tick. Sample answer with valid points in bold: People have different bank accounts at **different banks** and **branches**. Although banks are in **competition** with each other they need to share information for the EFTPOS system to work.	[3 marks] AO5
3	f	1 mark for each valid point, that uses correct terminology, up to a maximum of 2 marks. Markers should indicate valid reasons with a tick. Sample answer with valid points in bold: **NatWest** were the first bank to set up an inter-bank system called **Switch**. Most retail outlets still use this system **to exchange data and funds** with the retail sector. (VISA is the only other system)	[2 marks] AO4
4		1 mark for each valid point, that uses correct terminology, up to a maximum of 4 marks for advantages 4 for disadvantages with expanded reasons. Markers should indicate valid reasons with a tick. Sample answer with valid points in bold: There is **increased security** from theft because neither **buyer** nor **seller** need to have **large amounts of cash**; **transfer of money** between bank accounts is simpler; a large number of people do **not have bank accounts**; a number of people **prefer to pay by cash**; cards are not practical **for buying small**, **inexpensive** items; both **buyer** and **seller** have **to pay charges** for most card services.	[8 marks] AO4
5		See below	[10 marks] AO4
6	a	1 mark for each valid point, that uses correct terminology, up to a maximum of 3 marks for advantages. Markers should indicate valid reasons with a tick. Sample answer with valid points in bold: This gives the store details of **customer names and addresses** for **direct promotions** and **advertising**. It encourages customers to **continue shopping** at the store because they want to build up points. It enables the store to look at **individual customer buying preferences** and to **tailor stock** more accurately to **customer demand**.	[3 marks] AO5
6	bi	The retail outlet must register with the Data Protection Act bureau that it has a loyalty card scheme.	[1 mark] AO5

6	bii	1 mark for each valid principle, that uses correct terminology, up to a maximum of 4 marks. Markers should indicate valid answers with a tick. Sample answers: Data must be accurate; data may only be used or disclosed in the way in which it was registered; data must be obtained fairly and lawfully; people must be able to have information about them disclosed if they request it; the retailer must protect data held.	[4 marks] AO5
6	c	1 mark for each valid principle, that uses correct terminology, up to a maximum of 3 marks. Markers should indicate valid answers with a tick. Sample answers: In order to maintain personal privacy, people generally expect, within reason, to be able to withhold information about themselves, stop data being passed from one database to another without their knowledge or consent, find out what data about them is stored, and to have inaccurate data corrected.	[3 marks] AO5
7		1 mark for each valid way, that uses correct terminology, up to a maximum of 5 marks. Markers should indicate valid answers with a tick. Sample answers: Sales are never lost because shelves are empty as stocks are replenished daily; seasonal variation in customer purchasing can be allowed for by changing incoming stock orders to suit; electronic systems can help to stop people – both customers and staff – stealing goods; electronic systems can link retail outlets together to give them joint purchasing power and reduce prices; faster processing at the checkout means that more people can be served; electronic systems prevent stock sitting on shop shelves for too long.	[5 marks] AO4
8		1 mark for each valid point, that uses correct terminology, up to a maximum of 6 marks for advantages, 6 for disadvantages. Markers should indicate valid answers with a tick. Sample answers with key points in bold: **Disadvantages** - Customers may be **hostile** if they feel their **privacy** is **threatened** by database marketing; shop assistants may feel threatened by **computer monitoring** of their work rate, e.g. **speed at checkout, sales figures**; small shops often **cannot afford** to take part in new systems and so cannot compete; **fewer sales assistants** may be needed in a shop. **Advantages** – shop assistants' **work is simplified** and made **more interesting**; **training** is required, making job **more professional**; more time can be spent **interacting with customers** as selling is automated; **higher profit levels** may mean **better wages**; as stock levels are maintained, there is less problem of a particular **size or type of goods being unavailable** – assistants can also check on **electronic database** to give customers information **on stock availability** and **take orders** where appropriate.	[12 marks] AO4

9	a	1 mark for each valid point, that uses correct terminology, up to a maximum of 4 marks. Markers should indicate valid answers with a tick. Sample answers with key points in bold: Since all customer information, **credit transfer, stock control and prices** are **stored electronically**, any **disruption to the service** or **damage to files** will prevent the retail outlet from **functioning** and could **lose money for the business**. In addition, as most **security systems** are electronically based, using **cameras and detectors**, it is vital to ensure that **power supplies are continuous**. Data needs to be **secure to ensure it is not lost, destroyed, corrupted or unintentionally modified**. It is also important to ensure it is not **accessed by unauthorised people.**	[4 marks] AO5
9	b	1 mark for each valid point, that uses correct terminology, up to a maximum of 4 marks. Markers should indicate valid answers with a tick. Sample answers with key points in bold: Retailers often use a **backup system**; **passwords** are used to ensure that only authorised people have access to data; **regulators are** used to ensure continuous, steady flow of power; **backup generators** and **standby systems** can operate when necessary.	[4 marks] AO5
10	a	1 mark for each valid point, that uses correct terminology, up to a maximum of 4 marks. Markers should indicate valid answers with a tick. Sample answers with key points in bold: **Display monitors** carrying advertising videos and text messages; **hand held scanners** for customers to price their own purchases; **computerised ordering terminals; video cameras for security; environmental control systems; sound systems; alarm systems.**	[4 marks] AO3
10	b	1 mark for each valid point, that uses correct terminology, up to a maximum of 2 marks. Markers should indicate valid answers with a tick. Sample answers with key points in bold: They can **reach a wider range** of customers **all around the world**; it **increases turnover** and therefore **buying power**.	[2 marks] AO3
10	c	1 mark for each valid point, that uses correct terminology, up to a maximum of 2 marks. Markers should indicate valid answers with a tick. Sample answers with key points in bold: Currency fluctuations and different banking systems operating throughout the world can cause problems to a retailer. Hackers can cause an increase in fraud. Computer viruses can create problems for the retail outlet and damage files.	[2 marks] AO3

Answer to question 5

```
                        ┌─────────────────────┐
                        │       Start         │
                        └─────────────────────┘
                                  │
                        ╱─────────────────────╱
                       ╱      Scan item       ╱
                      ╱─────────────────────╱
                                  │
              ┌─────────────────────────────────┐
         ┌───▶│         Process code            │
         │    └─────────────────────────────────┘
         │                      │
         │    ┌─────────────────────────────────┐
         │    │      Update stock database      │
         │    └─────────────────────────────────┘
         │                      │
         │    ┌─────────────────────────────────┐
         │    │    Send decoded information     │
         │    │      to VDU and printer         │
         │    └─────────────────────────────────┘
         │                      │
         │    ╱─────────────────────────────────╱
         │   ╱     VDU displays item and        ╱
         │  ╱       Price                      ╱
         │ ╱─────────────────────────────────╱
         │                      │
         │    ┌─────────────────────────────────┐
         │    │  Printer stores item information │
         │    └─────────────────────────────────┘
         │                      │
         │               ◇ More Items? ◇─────────── No
         │                      │                    │
         │                     Yes                   │
         │    ╱──────────────────╱      ╱──────────────────╱
         └───╱   Scan next item  ╱      ╱   Scan credit card ╱
            ╱──────────────────╱       ╱──────────────────╱
                                              │
                                   ┌──────────────────┐
                                   │   Check credit   │
                                   └──────────────────┘
                                              │
                                   ╱──────────────────╱
                                  ╱  Print itemised bill╱
                                 ╱   End of process    ╱
                                ╱──────────────────╱
                                              │
                                   ┌──────────────────┐
                                   │ Scanner ready for next │
                                   │ customer transaction  │
                                   └──────────────────┘
                                              │
                                   ┌──────────────────┐
                                   │       Stop        │
                                   └──────────────────┘
```

Assessment Grid

Question		AO3	AO4	AO5
1		8		
2	a	4		
	b	4		
	c			3
3	a	1		
	b		6	
	c		4	
	d		3	
	e			3
	f		2	
4			8	
5			10	
6	a			3
	bi			1
	bii			4
	c			3
7			5	
8			12	
9	a			4
	b			4
10	a	4		
	b	2		
	c	2		
Totals		**25**	**50**	**25**