



# Victorian Certificate of Education 2006

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

## STUDENT NUMBER

Letter

Figures

Words


# INFORMATION PROCESSING AND MANAGEMENT

## Written examination

Tuesday 31 October 2006

Reading time: 3.00 pm to 3.15 pm (15 minutes)

Writing time: 3.15 pm to 5.15 pm (2 hours)

## QUESTION AND ANSWER BOOK

### Structure of book

<i>Section</i>	<i>Number of questions</i>	<i>Number of questions to be answered</i>	<i>Number of marks</i>
A	20	20	20
B	12	12	70
			Total 90

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is allowed in this examination.

### Materials supplied

- Question and answer book of 21 pages.
- Answer sheet for multiple-choice questions.

### Instructions

- Write your **student number** in the space provided above on this page.
- Check that your **name** and **student number** as printed on your answer sheet for multiple-choice questions are correct, **and** sign your name in the space provided to verify this.
- All written responses must be in English.

### At the end of the examination

- Place the answer sheet for multiple-choice questions inside the front cover of this book.

**Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.**

**SECTION A – Multiple-choice questions****Instructions for Section A**

Answer **all** questions in pencil on the answer sheet provided for multiple-choice questions.

Choose the response that is **correct** or that **best answers** the question.

A correct answer scores 1, an incorrect answer scores 0.

Marks will **not** be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

**Question 1**

On entry to the railway station a student inserts a train ticket into the validating machine which checks the ticket. Inserting a ticket into the validating machine is

- A. input.
- B. manipulation.
- C. storage.
- D. communication.

**Question 2**

A LAN is usually located

- A. on one brand of computer.
- B. over one site.
- C. throughout one multinational company.
- D. throughout one country.

**Question 3**

The local secondary school will follow the problem-solving methodology to develop and implement a new way of reporting to parents.

The sequence will be

- A. analyse, design, develop, test, document, implement, evaluate.
- B. analyse, design, develop, document, test, implement, evaluate.
- C. analyse, develop, design, document, test, evaluate, implement.
- D. analyse, evaluate, develop, test, implement, document, design.

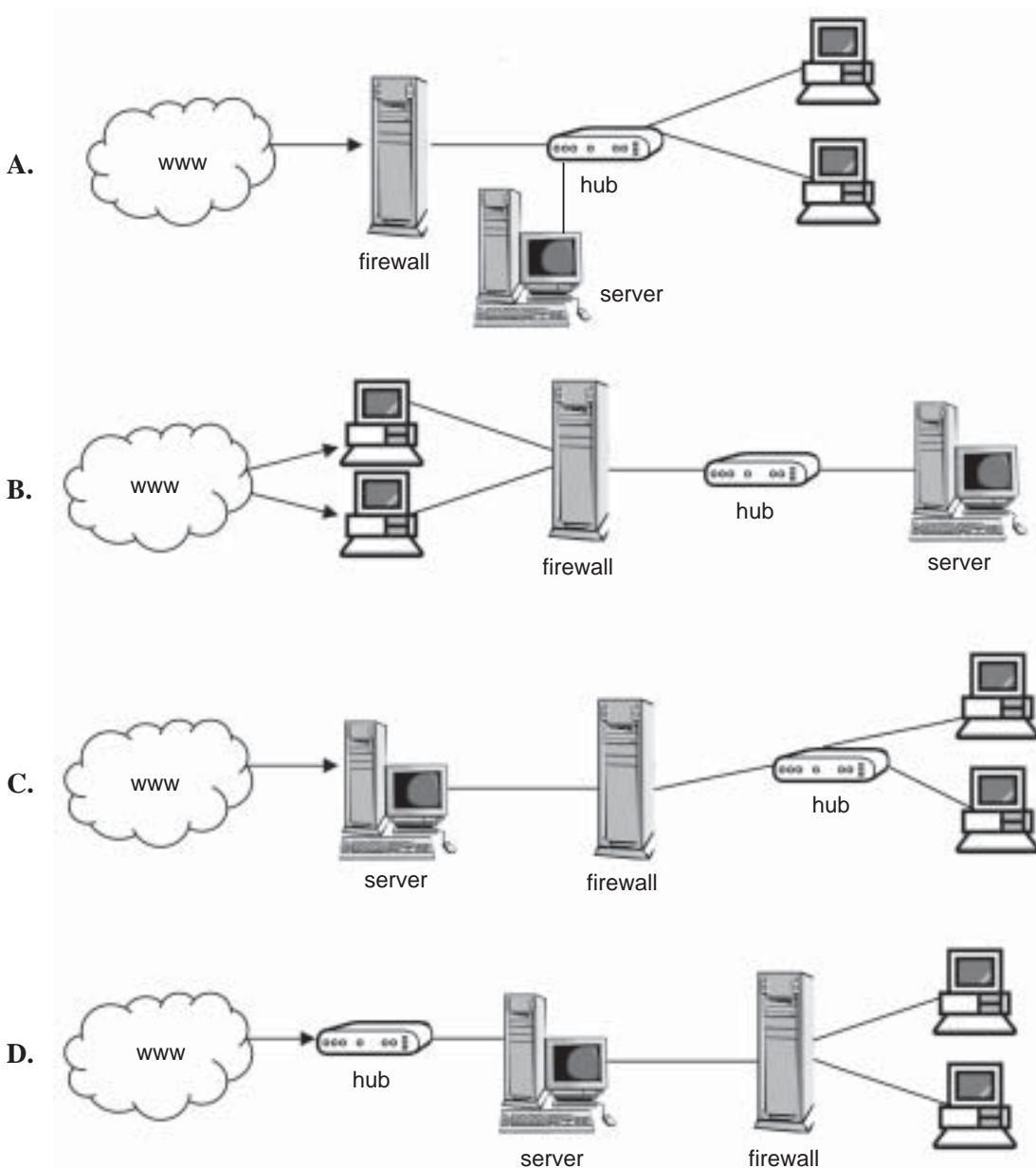
**Question 4**

Which one of the following is an operational decision in a large multinational IT company?

- A. deciding which country will have the help desk
- B. deciding which countries will have offices
- C. deciding to accept a customer's credit card for a computer upgrade
- D. deciding how often login passwords need to be changed in Australia

**Question 5**

Select the image that correctly shows where a firewall should be placed in an organisation's network.

**Question 6**

Which system changeover method requires all data to be entered on two systems for a period of time?

- A. pilot
- B. direct
- C. phased
- D. parallel

**Question 7**

Software used to manipulate images is an example of

- A. utility software.
- B. system software.
- C. application software.
- D. programming language software.

*Questions 8 and 9 refer to the website shown below.*

navigation bars →

The screenshot shows the VCAA website with various navigation elements. Two arrows point from the text 'navigation bars' to the top horizontal menu and the left sidebar menu.

**Question 8**

A web designer puts a button on this website to translate the text into another language.

Which **one** of the following audience characteristics has been addressed by the translate button?

- A. age
- B. culture
- C. gender
- D. status

**Question 9**

When creating this website, which design tool would have provided the best representation of where to locate the navigation bars?

- A. flow chart
- B. layout mock-up
- C. hierarchy chart
- D. data structure diagram

**Question 10**

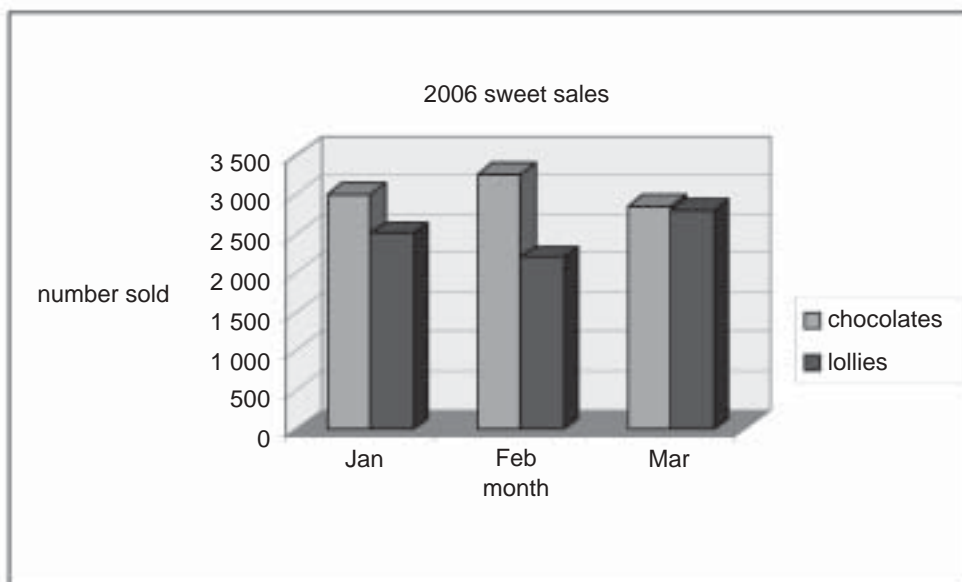
When installing a new network printer, the computer support person needs

- A. an error log.
- B. online FAQs.
- C. a technical manual.
- D. a quick-reference card.

**Question 11**

Offsite storage of data backups is used mainly to

- A. save storage space at the primary site.
- B. save the storage media from deterioration.
- C. provide a time lag when a decision to restore is taken.
- D. prevent simultaneous destruction of original and backup.

**Question 12**

The structure of the information in the chart is

- A. tested.
- B. detailed.
- C. textual.
- D. summarised.

**Question 13**

On Wednesday evening a fire destroyed the server room at Servefast.

To ensure the business can operate with its own data again as soon as possible it should

- A. check that tapes have been made.
- B. buy a new server and reinstall its software.
- C. implement the business disaster recovery plan.
- D. write to customers to check the business records.

**Question 14**

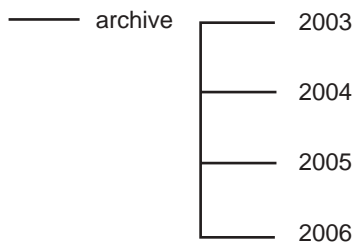
A technique for electronically validating input data is

- A. proof reading.
- B. setting a data range.
- C. surveying customers.
- D. entering dummy data.

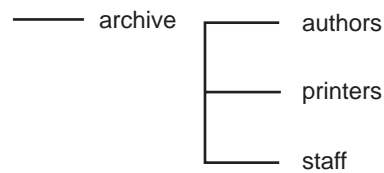
**Question 15**

Which one of the following would be the best way of organising an email archive for a small publishing company?

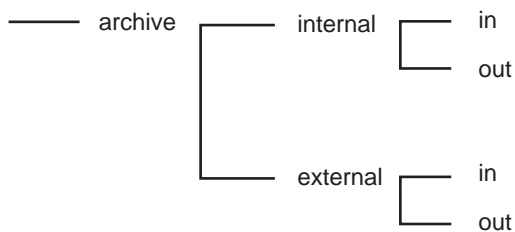
A.



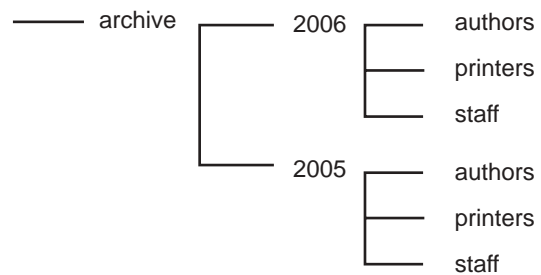
B.



C.



D.

**Question 16**

Peripheral devices are most efficient when connected to a computer through

- A. a series connection.
- B. a USB 2.0 connection.
- C. a wireless connection.
- D. a dial-up modem connection.

**Question 17**

Using an LCD flat screen is more efficient than using a CRT screen because the LCD flat screen

- A. allows you to adjust the brightness.
- B. produces less radiation.
- C. uses less power.
- D. can be easily read from an angle.

**Question 18**

The most efficient strategy to evaluate the security of an existing large network is to

- A. interview the network manager and monitor login errors.
- B. interview all the users and survey the network managers.
- C. monitor the login errors and interview all the network users.
- D. survey the company manager and monitor all network users.

**Question 19**

A printed advertising pamphlet for a local pizza shop needs to be tested for its effectiveness.

Which solution attributes would be tested?

- A. functionality, accessibility, timeliness
- B. communication of the message, usability, hyperlink
- C. ease of use, functionality, communication of the message
- D. communication of the message, presentation, accessibility

**Question 20**

Machines-For-You sells washing machines and clothes dryers. When a sale occurs the manager wants an electronic solution that will record the item purchased and the price paid. At the end of each month he can print off a list of the most popular products and automatically total the value of monthly sales rather than manually calculating this information.

Which one of the following project management plans best represents the process of producing the solution?

**A.**

Task No	Task	Predecessors
1	Create input screen	
2	Enter formulas to count sales and total price	
3	Enter sales for last month	Task 1
4	Test formulas	Tasks 2, 3
5	Compare results with manual figures	Tasks 1, 2, 3, 4

**B.**

Task No	Task	Predecessors
1	Create input screen	
2	Establish validation rules	
3	Enter formulas to count sales and total price	
4	Test formulas	Task 3
5	Enter sales for last month	Tasks 1, 2, 3, 4
6	Compare results with manual figures	Tasks 1, 2, 3, 4, 5

**C.**

Task No	Task	Predecessors
1	Create input screen	
2	Establish validation rules	
3	Enter formulas to count sales and total price	Task 4
4	Enter sales for last month	Tasks 2, 3
5	Compare results with manual figures	Tasks 1, 2, 3, 4

**D.**

Task No	Task	Predecessors
1	Create input screen	
2	Enter formulas to count sales and total price	
3	Test formulas	Task 2
4	Establish validation rules	
5	Enter sales for last month	Tasks 1, 2, 3
6	Compare results with manual figures	Tasks 1, 2, 3, 4, 5



**SECTION B – Short answer questions****Instructions for Section B**

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

**Question 1**

A validation rule states that only alphabetic and/or numeric characters are to be accepted and that an entry must be at least five characters in length.

Which **two** of the following items would be rejected and why?

Smit            at123b            helping            65433            ed@uk.com

Item rejected \_\_\_\_\_

Reason \_\_\_\_\_

\_\_\_\_\_

Item rejected \_\_\_\_\_

Reason \_\_\_\_\_

\_\_\_\_\_

4 marks

**Question 2**

Frogs-R-Us sells chocolate frogs via the Internet. Customers provide their personal details and credit card details via a web form. Frogs-R-Us processes customers' orders every day at 9.00 am. Following verification of payment, Frogs-R-Us mails out the orders.

a. Identify **three** personal details that the customer would need to enter on the web form.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3 marks

b. What output would Frogs-R-Us need to produce to mail out the order?

\_\_\_\_\_

1 mark

Customers are concerned about entering their personal details and credit card details in a web form. The current turnover of Frogs-R-Us requires them to comply with the *Privacy Amendment (Private Sector) Act 2000*.

- c. Identify **one** key provision of this Act and explain what Frogs-R-Us should do to meet this provision.

Key provision \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Explanation \_\_\_\_\_

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2 marks

**Question 3**

At Safety Secondary College students are required to purchase a 256 MB memory stick (flash drive) to backup their own files.

The college has the following current backup strategy for the student data file server.

Each Friday afternoon at 2.00 pm the technician burns three DVD RWs, one for Years 7 and 8, one for Years 9 and 10, and one for Years 11 and 12, on which he stores all files that have been changed during the week. These DVD RWs are stored at the technician's home. The technician has two sets of three DVD RWs which he reurns alternately.

Explain and justify **three** changes you would make to this strategy.

Change 1 \_\_\_\_\_

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Change 2 \_\_\_\_\_

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Change 3 \_\_\_\_\_

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6 marks

**Question 4**

Below is a section of the VicRoads Website.

The screenshot shows the VicRoads website interface. At the top is the 'vic roads' logo. Below it are navigation tabs: Registration, Licensing, Road Safety, Rules, Standards & Regulations, Roads & Projects, and Public Transport & Environment. Under these tabs are icons for Cars, Heavy Vehicles, Motorcycles, Bicycles & Pedestrians, Boats, and Trailers & Caravans. A 'I WANT TO...' section lists services like 'Change my address', 'Pay my registration', 'Get my licence for the first time', 'Renew my licence', 'Buy or sell a vehicle', 'Buy number plates', 'Check finance on a vehicle (Vehicle Security Certificate)', and 'Check my driver history'. A 'Schools are back' banner features a school zone sign and text: 'It's back to school for most Victorian school children on Monday 30 January. So if you are driving near schools remember to slow down and watch for school children. Click here for more information.' At the bottom, there are sections for 'PARTNERS & SUPPLIERS' (Local Government, Contractors and Consultants, Tenders & Contracts) and 'COMMERCIAL SERVICES' (VicRoads Design, GeoPave, Land Information & Survey).

a. Identify and explain a purpose of this website.

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2 marks

b. Identify and explain **one** technique that has been used to enhance the navigation of this website.

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2 marks

**Question 5**

An organisation is upgrading its office network to wireless. The managers have decided to provide sales staff with notebooks rather than desktops.

Which **two** of the following changes would improve the ergonomic work conditions of sales staff?

- A. purchase and use of a separate infrared mouse for each notebook
- B. rearrangement of the office furniture to face the walls
- C. installation of a web cam to monitor staff posture when working
- D. payment of a bonus to staff for attending meetings
- E. employment of a consultant to provide advice on training
- F. requirement of staff to use adjustable chairs when working
- G. provision of a wireless networking tutor on a CD



2 marks

**Question 6**

SportScore is an online company that collects and manages weekly sports results. Votes for best player awards are kept secret until the awards night. Umpires use terminals in a special secure area at the sporting venue to enter their best player votes over the Internet. Rhonda operates the workstation at SportScore's head office, which stores and processes the data entered by the umpires.

For each activity given below, provide an example of the type of security indicated and justify your choice.

Activity	Type of security	Justification
Entering the secure area for umpires	<b>Physical</b> _____ _____	
Umpires using the terminal to connect to SportScore	<b>Electronic</b> _____ _____	
Rhonda accessing the workstation at SportScore's head office	<b>Biometric</b> _____ _____	


6 marks


**Question 7**

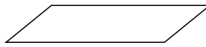
On the first working day of each month Sue updates a specials list and emails it to all business customers. Sue is taking leave and has decided to prepare a flow chart of the process for her replacement.

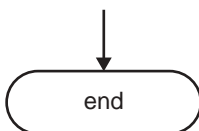
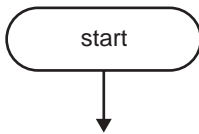
Select **only** the appropriate tasks and complete the flow chart by drawing and connecting the correct symbols below. In each symbol write in the task being done.

- Task A     retrieve template document
- Task B     save document
- Task C     Is it the beginning of the month?
- Task D     create a new document
- Task E     print and mail document
- Task F     enter discounted specials
- Task G     email document
- Task H     Is printer on?

 = process task

 = decision task

 = input/output



6 marks

**Question 8**

**Swap Songs with Strangers**

Adding new songs to your digital music player could become as easy as passing someone in the street. Push Music (a new software package) automatically transfers copies of songs between Wi-Fi enabled MP3 players when they come within 20 metres of each other.

When two or more Push Music users come within Wi-Fi range, their MP3 players set up a ‘conference’ that allows them to exchange music files. To ensure people end up with songs they are likely to enjoy, each MP3 file is accompanied by a data file containing information about the song and how often it is played.

Excerpt from *New Scientist* p. 19, 7 January 2006

- a. If the Australian Government allowed this new software package to be used, identify the legislation that would be breached and explain a key provision that would be broken.

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2 marks

- b. Identify and explain **one** ethical issue associated with using this new software package.

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2 marks

**Question 9**

Classic Barbeques sells many different barbecue products. They have recently begun to sell products from Gasport. Gasport supplies a range of three barbecues – BG 85, RT 90 and SC 55. Classic Barbeques wishes to keep a record of sales and profit for each model of Gasport barbecues sold.

- a. Recommend the software tool that you would use to produce the solution and output and justify your choice.

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2 marks

The manager wants the final output to show the most frequently sold item first.

- b. Identify and describe a software function that could produce the output required by the manager.

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2 marks



**Question 10**

Woodrow Secondary College produces a printed school magazine. A group of senior students uses a variety of equipment to acquire text and images for the magazine.

- a. Identify and explain **two** technical problems the students are likely to face when manipulating the images that are chosen for the magazine.

Problem 1 \_\_\_\_\_

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Problem 2 \_\_\_\_\_

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4 marks

- b. Identify and explain **one** manipulation process the editor might use to make an image fit into a set space in the magazine.

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2 marks

- c. Each image in the magazine must be labelled, and these labels are located in the text caption files. List **two** instructions the students should be given about the naming of the images' files and the associated text captions' files. Give a filename example for each instruction.

Instruction for image file \_\_\_\_\_

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Example of image filename \_\_\_\_\_

Instruction for text caption file \_\_\_\_\_

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Example of text caption filename \_\_\_\_\_

4 marks

**Question 11**

Fast and Furious Couriers guarantee twenty-four hour delivery anywhere within Victoria. In the last year the sending of bills to customers has been delayed because signed delivery dockets are not returned until Friday when all couriers return to the office.

- a. Identify the problem experienced by Fast and Furious Couriers.

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1 mark

New Solutions has recommended that Fast and Furious Couriers give all drivers Personal Digital Assistants (PDAs). The PDA will allow a driver to electronically scan the customer signature and send the signature via the mobile phone network. The PDA will also allow text messages containing pick-up and delivery addresses to be sent to drivers notifying them of their next job rather than using a two-way radio.

- b. Identify and explain **two time efficiencies** which would be gained from New Solutions' recommendations.

Efficiency 1 \_\_\_\_\_

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Efficiency 2 \_\_\_\_\_

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4 marks

- c. Describe **one** method for evaluating if the system saves time for the drivers.

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1 mark

**Question 12**

Star Movies is an independent chain of cinemas located in Victoria. An employee works at the ticket counter for 4 hours each day and at other times tickets are sold at the candy bar. The manager has seen a new touch-screen ticketing machine that will allow movie goers to use cash or a credit card to pay for their ticket after selecting the movie, session and type of ticket on the touch screen. The ticket still needs to be handed to an attendant to enter the cinema.

- a. Identify and explain **one cost efficiency** the manager could gain by implementing this system.

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2 marks

The manager has decided to install the new touch-screen ticketing system.

- b. Recommend and justify a method of changing over to the new system.

Changeover method \_\_\_\_\_

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Justification \_\_\_\_\_

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2 marks

Star Movies requires user documentation to be produced for customers purchasing tickets.

- c. Recommend and justify
  - the type of user documentation that should be produced
  - the location of the documentation.

Type of user documentation \_\_\_\_\_

\_\_\_\_\_

Justification \_\_\_\_\_

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Location of documentation \_\_\_\_\_

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Justification \_\_\_\_\_

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4 marks

The manager of Star Movies would like customer feedback on the new touch-screen ticketing machine. The manager has seen the electronic customer feedback device (TRACKA) shown below.



Customers simply read the question and press the most appropriate response button. The questions on the TRACKA device need to be written by the manager. The following issues about the new ticketing machine need to be included in the feedback.

1. location in the cinema complex
2. clarity of user instructions
3. response time of the touch-screen ticketing machine

The question and responses for the first issue have been completed in the proforma below.

d. Design the TRACKA interface for issues 2 and 3 by developing **one** question and **3–4** possible responses for each. (Yes/No only responses will not be accepted.)

1. Was it easy to find the ticket machine?	The machine was easy to find.	I needed the signs to find the machine.	I needed to ask staff where the machine was.	
2.				
3.				

4 marks