



**Victorian Certificate of Education
2004**

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Letter

Figures

Words

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**INFORMATION PROCESSING
AND MANAGEMENT
Written examination**

Tuesday 9 November 2004

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	13	13	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 25 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 electronic communication 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

A digital camera’s image resolution is usually described in terms of

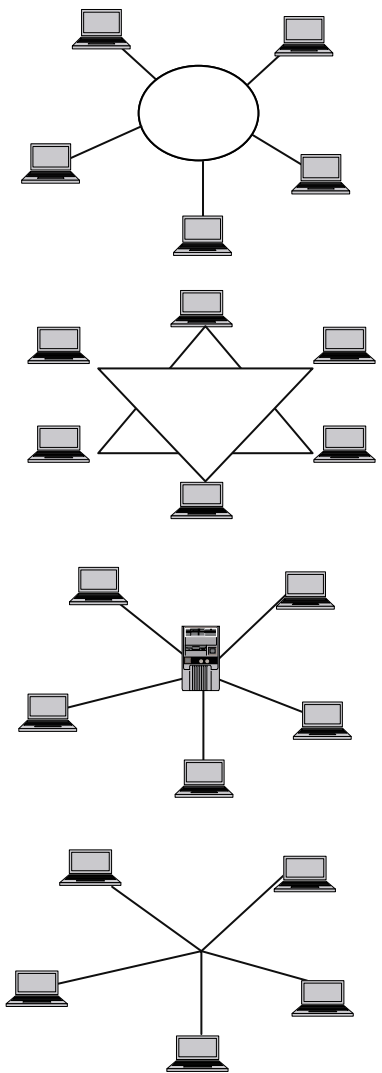
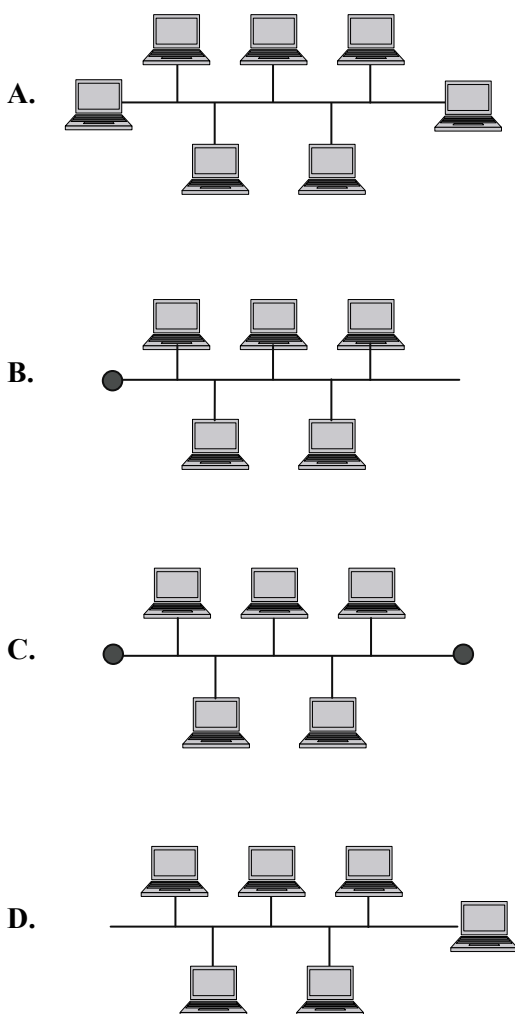
- A. dpi
- B. cps
- C. bps
- D. ppm

Question 2

Which set of diagrams best illustrates a bus and a star network topology?

Bus

Star



Question 3

'Speed limit signs tell you the maximum speed you can drive in normal conditions.' This statement is taken from the VicRoads web site.

The purpose of the statement is to

- A. inform.
- B. entertain.
- C. persuade.
- D. influence.

Question 4

Which one of the following is a characteristic of data?

- A. tabulated
- B. structured
- C. summarised
- D. unorganised

Question 5

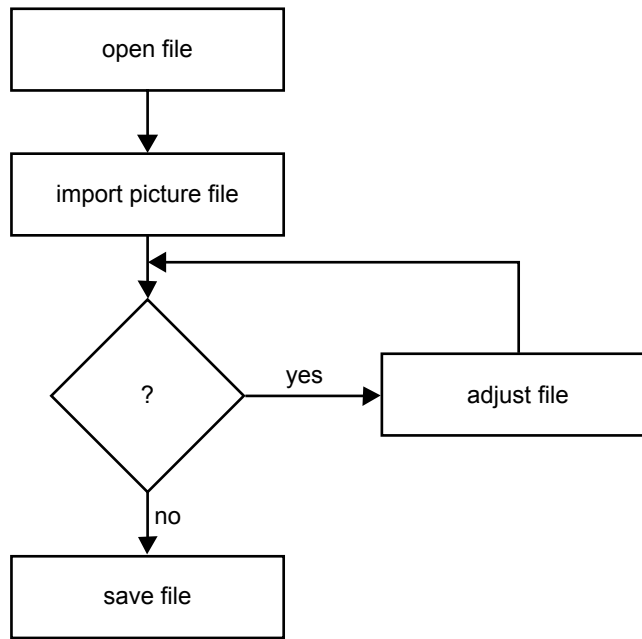
As part of the introduction of a new information system an organisation defines specifications for the input, processing and output requirements.

Which stage of the Systems Development Life Cycle is occurring?

- A. design
- B. development
- C. implementation
- D. evaluation

Question 6

Part of a flow chart for creating a web page is shown below.



What would go in the diamond symbol?

- A. print page
- B. spell check
- C. crop picture
- D. test hyperlinks

Question 7

An audience can be characterised by its

- A. structure.
- B. culture.
- C. usability.
- D. completeness.

Question 8

One of the key provisions of privacy legislation is best described as

- A. restricting the illegal copying of software.
- B. controlling the rights of government agencies.
- C. restricting the collection of personal information.
- D. controlling the use of information collected by organisations.

Question 9

A company wants to test if a solution is meeting consumer needs.

The best technique to use would be

- A. survey staff the day after implementation.
- B. survey clients the day after implementation.
- C. survey staff three months after implementation.
- D. survey clients three months after implementation.

Question 10

The sales manager of Gleaming White Cleaning Products is ordering his monthly supply of chemicals based on the summary of daily sales reports he receives.

The type of decision being made is

- A. tactical.
- B. strategic.
- C. operational.
- D. organisational.

Question 11

An electricity supply company develops an information system to allow its customers to pay their bills over the Internet.

The organisational goal most likely to be achieved by this system is

- A. to maximise profits.
- B. to increase market share.
- C. to improve customer service.
- D. to provide a safe working environment.

Question 12

Employee number	Employee name	Hourly rate	Hours worked	Gross pay	Taxation paid	Net pay
		\$		\$	\$	\$
A001	Malcolm	10.00	12			
A003	Trish	12.00	17			
A007	Susie	11.00	5			

The table above shows the part-time employees' wages for an organisation for the week ended 29 October. Part-time employees can work a maximum of 20 hours per week.

What type of data validation technique would be used on Hours worked?

- A. rate check
- B. date check
- C. spell check
- D. range check

Question 13

The introduction of privacy legislation caused changes in the ways that businesses operate.

What type of impetus for change is privacy legislation?

- A. social
- B. economic
- C. procedural
- D. technological

Questions 14 and 15 refer to the table below.

Task no	Task description	Days of the week						
		Mon	Tues	Wed	Thurs	Fri	Sat	Sun
1	Install hardware							
2	Install software after hardware installed							
3	Write user documentation							
4	Train operator after software installed							
5	Test system after operator trained							
6	Send invitations to opening							

Question 14

In the table above the critical path consists of tasks

- A. 1, 2, 4 and 5
- B. 1, 3, 4 and 5
- C. 1, 2, 5 and 6
- D. 1, 2, 4 and 6

Question 15

In the table above how many tasks can run over time without affecting the completion date?

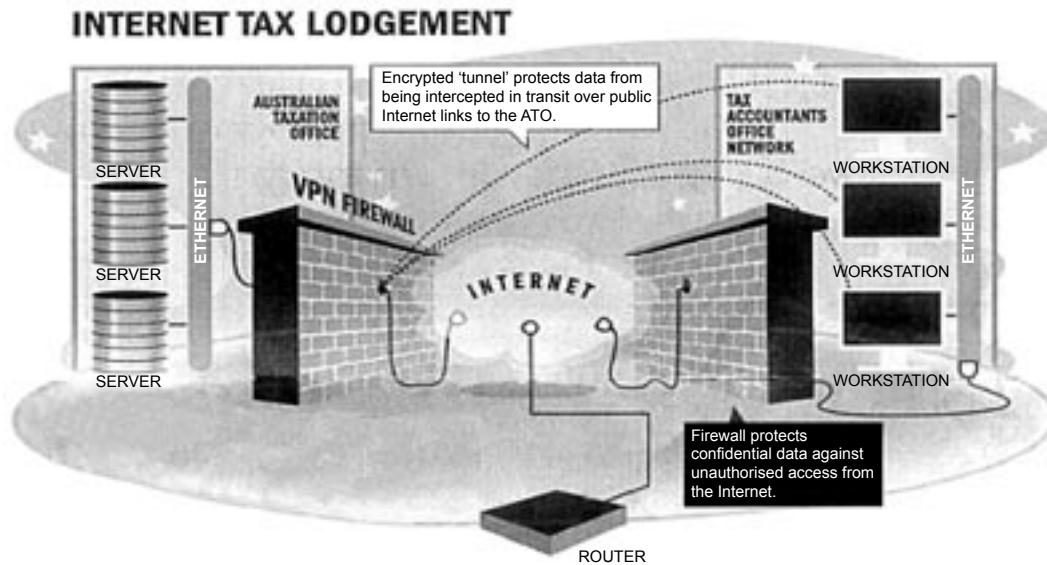
- A. one
- B. two
- C. three
- D. four

Question 16

Which of the following would best test the usability of a solution?

- A. test the information is readable
- B. test the solution is easy to operate
- C. test the information produced is accurate
- D. test the solution performance matches the design

Questions 17 and 18 refer to the diagram below.

**Question 17**

In the diagram above an 'Encrypted tunnel' is used.

Encryption is best described as sending data

- A. out of order.
- B. in a coded format.
- C. over a public network.
- D. in small packets with headers.

Question 18

In the diagram above the Virtual Private Network (VPN) firewall used by the Australian Taxation Office (ATO) is intended to

- A. block ATO staff from accessing the Internet.
- B. allow anyone to access the ATO's Ethernet local area network.
- C. allow registered tax accountants access to ATO's local area network.
- D. block viruses from entering the ATO's local area network.

Question 19

A new information system is to be installed using a parallel changeover method.

One advantage of this changeover method is

- A. it is the cheapest way of changing over to a new system.
- B. the old system is still available to use if problems are found in the new system.
- C. any problems in the new system can be fixed before it is installed in the entire organisation.
- D. the system is installed in parts, so that problems in one part can be fixed before other parts are installed.

Question 20

A full backup of a company's file server is completed every Friday night. Partial backups are completed on the other week nights. A virus, which affected a variety of files, was downloaded and activated on Wednesday night. In which order must the steps be followed to restore the files?

- A. remove damaged files, then update virus software, followed by restoring the files from Monday, Tuesday and Friday backups
- B. update virus software, then remove damaged files, followed by restoring the files from Monday, Tuesday and Friday backups
- C. remove damaged files, then update virus software, followed by restoring the files from Friday, Monday and Tuesday backups
- D. update virus software, then remove damaged files, followed by restoring the files from Friday, Monday and Tuesday backups

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

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

Question 1

Shown below is a drop-down box for a field on a web page survey.

Age

0–10
11–20
21–40
41–60
61+

- a. Identify the step of information processing in which this drop-down box would be used.

1 mark

- b. State **two** advantages of using a drop-down box.

Advantage 1 _____

Advantage 2 _____

2 marks

Question 2

Many modern computers are being sold without floppy disk drives.

a. Explain the role of a floppy disk drive.

1 mark

b. State **two** reasons why floppy disk drives are no longer considered necessary.

Reason 1 _____

Reason 2 _____

2 marks

Question 3


A web page showing images of a company’s products with appropriate descriptions is longer than one screen. Recommend and justify an appropriate technique the web designer could use to improve the navigation of this page.

Technique _____

Justification _____

2 marks

Question 4

	Coles Supermarkets Australia Pty Ltd Tax Invoice ABN 45 004 189 708		A
			B
	RINGWOOD	Store: 0637	
	Phone: (03) 98794122	Receipt: 8334	
	Fax: (03) 98768759		
	Open 6am - Midnight 7 Days a Week		
C	Date: 21-Jan-2004	Time: 11:58	
	Reg 13 Served By: Ann - 300		
		\$	D
E	MEDIUM TOMATOES	0.48	
	0.087 kg NETT @ \$5.48/kg		
	D/L PRIMO BACON MOLE RAW	1.06	
	SAVINGS EGGS 12PK	2.43	
	HEL GAS BREAD CLASSIC SEED	2.50	
	Sub Total	\$6.47	
	Rounding	-0.02	
	Total for 4 items	\$6.45	
	Cash	7.00	
	Change	0.55	
	GST INCLUDED IN TOTAL	\$0.00	F

Joe makes some purchases at a supermarket and receives the output shown. Identify **one** example of each of a mandatory, optional and preferred convention by inserting the appropriate letter in the table below.

Convention	Example
mandatory	
preferred	
optional	

3 marks

Question 5

Brittany wants to purchase a printer for her home computer to produce hard copies of the photographs she is taking with her digital camera. The computer salesperson says, ‘The most important thing to consider is price – printers change so quickly that you should spend as little as possible’. Identify **two** capabilities of a printer that Brittany needs to consider and explain why she needs to consider them in her purchase.

Capability one _____

Explanation _____

Capability two _____

Explanation _____

4 marks

Question 6

As part of organising the next Over 40s World Olympics the following tasks have been identified for the development of the new information system.

Tasks

Task no	Task description	Other information	Duration (days)
1	Create system specification	None	3
2	Trial software	Cannot start until system specification completed	2
3	Customise and test software	Commences after software trial	4
4	Purchase and test hardware	Cannot start until system specification completed	3
5	Install software	Requires hardware and software testing to be completed	2
6	Train staff	Can occur as soon as software is customised	1

Complete the chart below so that all tasks are entered.

Chart

Task no	Task description	No of days	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F
1	Create system specification	3															
2	Trial software	2															
3	Customise and test software	4															
4	Purchase and test hardware	3															
5	Install software	2															
6	Train staff	1															

3 marks

Question 7

On the Edge Communications provides both on-line support and queued telephone support services to its customers. Choose **one** of the support services offered and explain **one** advantage and **one** disadvantage for the company and **one** advantage and **one** disadvantage for the customer.

Service chosen _____

Company

Advantage _____

Disadvantage _____

Customer

Advantage _____

Disadvantage _____

4 marks

Question 8

Identify **two** items of hardware from the list below which would be used in a Wide Area Network (WAN). Explain the role of each item selected.

Items of hardware

- fibre optic cable
- hub
- microwave transmitter
- print server
- router
- twisted pair cable

Item	Role
1. _____	<hr/> <hr/> <hr/>
2. _____	<hr/> <hr/> <hr/>

4 marks

Question 9

An employment office has three different types of computers on its network.

Counter computers – these are located in the public area and are used by clients to search for jobs.

Office workstations – these are used by staff to assist job seekers and to access the central files containing clients’ records.

File Server – this computer stores the central files and allows employees to print.

For each type of computer, recommend **one** physical and **one** electronic security strategy that could be used to secure the data stored. You must provide a different example for each type of computer.

Type of computer	Physical security strategy	Electronic security strategy
Counter	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
Office	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
File Server	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>

6 marks

Question 10**Flirting with Disaster**

Australian firms are putting their faith in disaster recovery plans that may not work . . . Most businesses relying heavily on IT have a recovery plan – usually some form of systematic backup . . . but has it been tested? . . . Big banks now have their data warehouses located at least 20 kilometres outside the metropolitan areas . . . Hewlett-Packard operates 44 data recovery centres worldwide, including two in Sydney. Known as hot sites, they are housed in anonymous buildings, in undisclosed locations, away from city centres . . . They depend on clients maintaining a strict data backup regime, with tapes produced at regular intervals and stored away from their data centre.

Excerpts from *The Age*, Next, p5, Tuesday 14 October 2003

- a. Why should a backup or recovery plan be tested?

1 mark

- b. Explain why a hot site is located in ‘an anonymous building’ and ‘away from the city centre’.

2 marks

c. Outline **two** reasons why tapes are recommended backup media.

Reason one _____

Reason two _____

2 marks

d. A large company which operates six days a week from 7.00 am to 7.00 pm completes a full backup every Saturday night after closing. An incremental backup is completed at midday on Tuesday and Thursday. Tapes are stored on site in a fireproof safe. Would you consider this to be a 'strict backup regime'? Justify your answer.

3 marks

Question 11

Riverview Restaurant plans to replace its handwritten meal ordering system with a system using hand-held wireless PCs (iPAQs) linked to a server. Waiters will enter the client’s food and drinks order on to the iPAQ at the client’s table and the order will be sent to the server for processing in the kitchen and bar. The new system is also capable of identifying stock used and calculating the customer’s bill.

- a. Identify the impetus for change.

_____ 1 mark

- b. What type of network is described?

_____ 1 mark

- c. Identify **one** printed and **one** electronic output produced by the system.

Printed output _____

Electronic output _____

2 marks

- d. Discuss **three** ways that the new system will improve the efficiency of running the business.

3 marks

- e. The manager plans to use the data gained from the iPAQ to determine how individual staff are performing. Identify and explain **one** ethical concern you would have about this use of the data.

2 marks

Question 12

Freshwater Ponds DVD Lending Library opens from 10.00 am to midnight, seven days a week, and plans to introduce a new cataloguing system called EasyCat. The library’s four full-time and eight part-time staff will need to be trained in the use of the EasyCat program.

- a. EasyCat makes the following recommendations for training the library staff. For each recommendation, explain **one** concern you would have if it were implemented.

Recommendation 1: all library staff undertake training at the same time

Recommendation 2: the training be conducted three weeks before the new system is installed

Recommendation 3: all staff be provided with a technical manual

3 marks

- c. The chief librarian has indicated the following **two** areas she considers essential to be covered in the user manual.

Justify the inclusion of each of these areas in the user manual provided to staff who hire out videos.

- i. How to accurately calculate the hiring fee when hiring multiple videos to a client

- ii. How to save, backup and exit the system at the end of the day

2 marks

Question 13

Top Shades makes and installs sun blinds for windows and needs to provide accurate quotes on company letterhead to clients. Currently, Top Shades sends the supervisor to measure the windows on which the blinds will be installed. Then the supervisor estimates the cost, adds \$100 to ensure the company makes a profit and provides the customer with a handwritten quote. Top Shades wants a more precise solution that allows any of the staff to complete a quote. They will all be sharing a laptop computer with an ink-jet printer connected.

- a. Identify **two** items (other than the clients' name and contact details) of input data that would need to be collected by the staff member to prepare the quote.

Item 1 _____

Item 2 _____

2 marks

- b. List **one** constraint on the solution.

1 mark

- c. Select any **two** of the steps of the problem solving methodology listed below. Explain what occurs in each step and provide an example of what Top Shades would do in the selected steps to implement their quoting system.

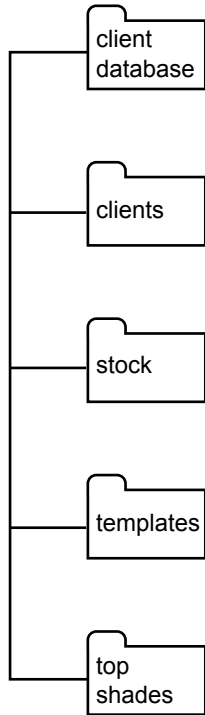
Steps

- Design
- Develop
- Test

Step	Explanation and example
1. _____	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
2. _____	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

4 marks

- d. Top Shades intends to install the following folders on its laptop.



Using the diagram above, identify the folder into which you would store each of the following files.

- i. the solution folder _____
- ii. the individual quotes folder _____

2 marks

- e. The manager has suggested that files be named consecutively; for example, Quote 1, Quote 2, Quote 3. Explain **two** difficulties staff will have with this suggestion and recommend a more appropriate file-naming system.

Difficulty one _____

Difficulty two _____

Recommendation _____

3 marks