



Victorian Certificate of Education 2008

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Figures

Words

Letter

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INFORMATION TECHNOLOGY: IT APPLICATIONS

Written examination

Tuesday 11 November 2008

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 22 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

The main reason for evaluating a new website is to

- A. ensure all the bugs have been found and corrected.
- B. check its goals and objectives have been achieved.
- C. ensure all the online user documentation is up to date.
- D. test the query functions to ensure they are working correctly.

Question 2

In Australia, digitally altering the background and colours of an artist's work and then selling it as your own is illegal according to the

- A. *Copyright Act 1968.*
- B. *Privacy Act 1988.*
- C. *Information Privacy Act 2000.*
- D. *Health Records Act 2001.*

Question 3

Incremental backup

- A. ensures all archived data is up to date.
- B. provides redundant copies of new software.
- C. reduces time by saving only data which has changed.
- D. increases the time spent saving data.

Question 4

The owner of a large retail organisation wants to improve customer service over the next three years.

This is an example of an organisational

- A. goal at a tactical level of decision making.
- B. goal at a strategic level of decision making.
- C. objective at a tactical level of decision making.
- D. objective at a strategic level of decision making.

Question 5

Joe is in a hurry to save his mathematics homework and get to school. He removes a flash disk/memory stick before the screen prompt indicates it is safe to do so. When Joe opens the flash disk/memory stick at school he finds his mathematics homework file is missing.

This is due to

- A. an accident.
- B. a power failure.
- C. a technical fault.
- D. a procedural failure.

Question 6

The Input-Process-Output (IPO) chart below is set up to represent part of a solution to an information problem.

Input	Process	Output
Price Quantity	Total = Price × Quantity	Display Total

The solution design should include a plan to

- A. validate price and quantity and test total.
- B. validate price and total and test quantity.
- C. test price and quantity and validate total.
- D. test price and total and validate quantity.

Question 7

Below is a section of a database used to effectively manage data at the Health First Clinic.

Health First Clinic		
Objects	Name	Description
Form	Patients	Add, edit and print patient information
Form	Employees	Add and edit staff information

Identify the **patients form** that best meets the description.

A.

B.

C.

D.

Use the following information to answer Questions 8–10.

The design for a spreadsheet to record cash sales during February 2008 is shown below.

	A	B	C	D	E	F	G
1							
2		February 2008 Cash					
3		\$					
4	Days	Week 1	Week 2	Week 3	Week 4		Total \$
5	Monday						
6	Tuesday						
7	Wednesday						
8	Thursday						
9	Friday						
10	Saturday						
11	Sunday						
12							
13						Total	
14							
15	Difference						

Question 8

The formula to calculate the Total in cell G13 is

- A. =SUM(G5:G13)
- B. =SUM(G5:G11)
- C. =SUM(E5:E11)
- D. =SUM(B13:G13)

Question 9

The most effective formula for B15 to show the difference between cash sales on the best and worst days of Week 1 is

- A. =MAX(B5:B11)
- B. =COUNT(B5:B11)
- C. =AVERAGE(B5:B11)
- D. =(MAX(B5:B11) – MIN(B5:B11))

Question 10

To show changes over a 4-week period in the total cash taken each Friday the most effective chart type would be

- A. pie.
- B. area.
- C. scatter.
- D. column.

Use the following information to answer Questions 11–13.

The design and test data for a customer form is shown below. The CustomerID field is the primary key.

Customers	
CustomerID	SMA0623
Company Name	SMARTICONS
Title	Mr
Contact Name	Kim Jones
Address	28 High Street
City	SYDNEY
Postcode	2003
Phone	0200245678
Fax	0234567892
Last Order \$	674.89

Question 11

The CustomerID field

- A. must have an entry and cannot be sorted.
- B. is a unique identifier and cannot be sorted.
- C. is a unique identifier and must have an entry.
- D. is an autonumber data type and must have an entry.

Question 12

A drop list or combo box in this form would be an efficient validation technique for the field labelled

- A. Fax
- B. Title
- C. Phone
- D. CustomerID

Question 13

A query to search for all customers based in Adelaide whose most recent order was less than \$1000 would be

- A. City = Adelaide and Last Order\$ = 999
- B. City = Adelaide and Last Order\$ >1000
- C. City <> Melbourne and Last Order\$ < 1000
- D. City = Adelaide and Last Order\$ < 1000

Question 14

The efficiency of onscreen help provided for users of a spreadsheet package could best be evaluated by

- A. counting the number of incomplete customer records.
- B. observing the time it takes users to retrieve the help they need.
- C. asking users in an online survey if they are happy with the onscreen help.
- D. checking the Help Desk log for the number of data errors in the onscreen help.

Question 15

The IT Help Desk has been asked to create a macro that will centre the company name ‘**Sell Quickly Online With Us**’ in cells A1 to A8 whenever the assigned keys are pressed.

When recording the macro the IT Help Desk should

- A. not merge any cells and have no formatting.
- B. merge cells A1 to A8 and have no formatting.
- C. not merge any cells but include all formatting.
- D. merge cells A1 to A8 and include all formatting.

Question 16

A school’s chess club needs a network that will allow it to play games from any location on the school’s single campus. The game files have to be secure and the results recorded centrally.

The most appropriate transmission media for the club would be

- A. infrared.
- B. coaxial cable.
- C. wireless.
- D. CAT5 – unshielded twisted pair.

Question 17

A prototype website is a

- A. full working solution that has been fully tested and debugged.
- B. full working solution that has not been fully tested and debugged.
- C. screen design for a solution that is sent to team members for their comments.
- D. model of a solution that demonstrates functionality, interface and some links.

Question 18

Individual members of a virtual team aiming to solve a problem collaboratively would expect to

- A. meet regularly in person to discuss issues.
- B. have the right to delete shared files.
- C. have access to shared files via a network.
- D. have the right to personally choose any name for the files they create.

Question 19

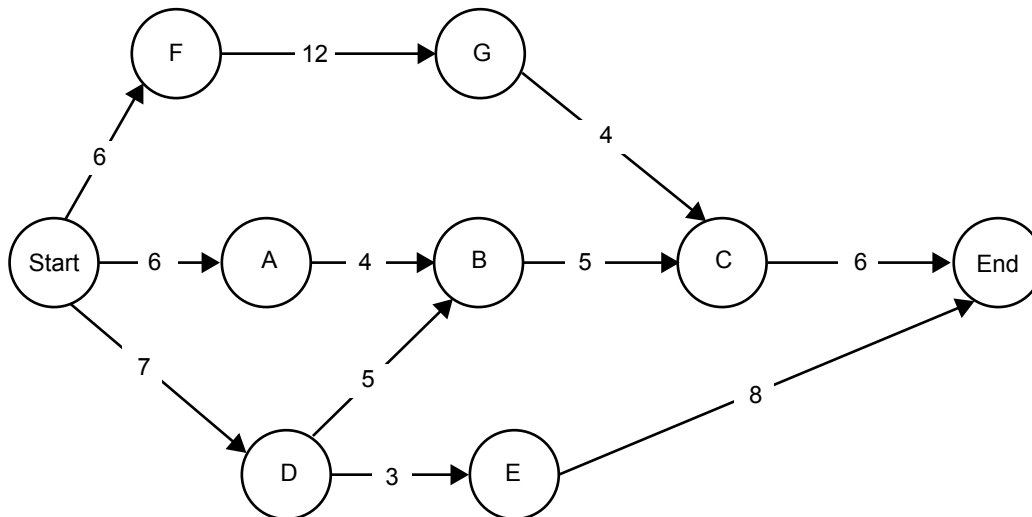
James has created a simple query to help his little brother check the answers to multiplication exercises.

Exercise No	First Number	Second Number	Answer
{AutoNumber}	0	0	

Record: 1 of 1

To test that the calculated field in this query works correctly, James should enter data in the fields

- A. First Number, Second Number
- B. First Number, Second Number, Answer
- C. Exercise Number, First Number, Second Number
- D. Exercise Number, First Number, Second Number, Answer

Question 20

The critical path on the PERT chart shown above is

- A. Start, D, E, End
- B. Start, A, B, C, End
- C. Start, D, B, C, End
- D. Start, F, G, C, End

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

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

Question 1

Market research indicates that teenagers make up most of the audience for an online chat room about spy movies.

- a. List two audience characteristics that need to be considered when developing this chat room.

2 marks

- b. Explain how one of these characteristics should influence the content of the site's home page. Give an example to support your answer.

2 marks

Question 2

The following 17 links are needed on the home page of a school website.

Art, Biology, Chemistry, Drama, English, Fees, Location Map, Mathematics, Medical Care, Parent Association, Parent Information, Pastoral Care, Student Welfare, Subjects, Visitor Information, Weekly Calendar, Newsletter

Select four links as headings on the opening page and insert them in the boxes labelled W, X, Y, Z.

Select two other appropriate links to be placed under **each** heading.

W	X	Y	Z
---	---	---	---

1. _____	1. _____	1. _____	1. _____
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2. _____	2. _____	2. _____	2. _____
----------	----------	----------	----------

4 marks

Question 3

FreshFood is a company that delivers food to online customers. The screen shown below is used to order fruit.

FreshFood				
Buy	Fruit Item	Quantity kg	Quality	Price per kg \$
<input type="checkbox"/>	Apples green		☆☆☆	1.95
<input type="checkbox"/>	Apples red		☆☆	1.50
<input type="checkbox"/>	Bananas		☆☆☆☆	4.95
<input type="checkbox"/>	Cherries		☆☆☆☆☆	16.50
<input type="checkbox"/>	Dates		☆☆☆	6.30
<input type="checkbox"/>	Grapes muscat		☆☆	2.50

- a. Select one formatting feature of the table shown above and explain how it adds to the clarity of the information.

Feature _____

Explanation _____

2 marks

- b. Identify two conventions and explain how each adds to the usability of the information product.

Convention 1 _____

Explanation _____

Convention 2 _____

Explanation _____

4 marks

Question 4

Gina manages the medical records database for a hospital in Melbourne, Australia with 15 000 patients.

a. Name the law which covers Gina’s responsibilities for patients’ data.

1 mark

b. Describe a security procedure the doctors should follow after finishing accessing patient data from the hospital’s network.

1 mark

c. A patient has a new doctor in another clinic who requests the patient’s records from the hospital. Identify one legal obligation the hospital has when sending the records.

1 mark

Doctors have been asked to send complete patient records of all 18 year olds to the Australian Government Health Commission.

A patient’s parents want to understand what ethical dilemmas may arise if the records are sent.

d. For each of the following, write a question the parents could ask to identify these ethical dilemmas.

i. Doctor _____

ii. Patient _____

iii. Health Commissioner _____

3 marks

The hospital has implemented a firewall to ensure that the medical records database is not accessed by unauthorised users.

e. Describe one advantage of a firewall for the hospital. Give an example to support your answer.

2 marks

- f. Describe one disadvantage of the firewall being the only way of preventing unauthorised access to the medical records database. Give an example to support your answer.

2 marks

Question 5

	ProductID	Product Name	Category
+	78	Kit-Kats	Confections
▶+	79	Flake	Confections
+	80	Corn Chips	Confections
+	81	Salt and Vinegar	Confections
*	(AutoNumber)		

Record: 79 of 81

The close icon (which is red) on the screen shown above is described by a graphic designer as intuitive. Do you agree with the graphic designer? Justify your answer.

2 marks

Question 6

MusicWarehouse is a company that sells CDs by mail order. Sue, who owns the company, has used database management software to create the **Category** and **Product** tables for the stock records.

Category Table (CategoryID is the primary key)

CategoryID	Category Name	Category Description	Picture
1	Pop	Justin Timberlake, Gwen Stefani, Maroon 5	Graphic of pop
2	Country	Slim Dusty, Olivia Newton John . . .	Graphic of country
3	Classical	Bach, Beethoven, Chopin . . .	Graphic of classical
4	Opera	Tosca, Carmen, Rigoletto, La Traviata	Graphic of opera

Product Table (ProductID is the primary key)

ProductID	Product Name	CategoryID	Unit Price \$	Quantity in Stock
1	Gwen Stefani Live	1	15.50	23
2	Bach Strings	3	19.60	15
3	Viva Carmen	4	23.00	9
4	Maroon 5 Unplugged	1	11.75	34

a. Recommend a data type for the ProductID field. Justify your answer.

2 marks

The following error message is displayed when 31.00 is entered in the Unit Price field.

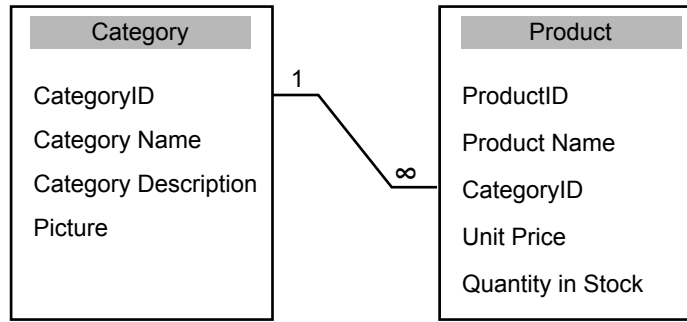
‘The Unit Price must be between and including \$10 and \$25’

b. Write the rule for this message (including symbols).

1 mark

c. Explain the role of the error message in enhancing the quality of the information.

2 marks



Sue has created a **one-to-many** relationship between the CategoryID fields in these tables.

d. i. Define a **one-to-many** relationship.

ii. Explain one advantage of this one-to-many relationship.

2 marks

Question 7

Henry wants to evaluate the new website for his bowling team. He begins by listing the tasks and labelling them as A, B, C, D, E and F on the Gantt chart shown below.

Task No.	Task Name	Duration Days	Predecessors	March														
				M	T	W	Th	F	S	S	M	T	W	Th	F			
1	A	2				Non-Working Day						Holiday						
2	B	3																
3	C	4	2															
4	D	1	3															
5	E	0																
6	F	1	4															

- a. Complete the Gantt chart above by
- filling in the calendar
 - indicating the predecessor dependencies
 - indicating the milestone.

2 + 2 + 1 = 5 marks

b. Explain the purpose of the milestone.

1 mark

Question 8

Stefano runs an online book selling business. To increase his business, Stefano wants to introduce a 10% discount for new customers paying by credit card. He designs a macro so that when an order is processed, new customers get a 10% discount.

Place the number corresponding to the correct action in the appropriate position in the flowchart shown below.



Actions

- | | |
|----|-------------------------------|
| 1. | Calculate cost |
| 2. | Discount the total |
| 3. | Enter order details |
| 4. | Is this an existing customer? |
| 5. | No |
| 6. | Print receipt |
| 7. | Start |
| 8. | Stop |
| 9. | Yes |

3 marks

Question 9

Geography teachers at Seaside Secondary College have created a prototype website that will allow Year 10 students to access class notes, project instructions and local maps. Students will be able to upload data to the website to assist with the preparation of their projects.

It is proposed that teams of students be allocated Internet-enabled mobile phones, with high resolution cameras, for their first project.

- a. i. Name the type of network these teams are using.

- ii. Describe one advantage of this type of network for the students studying geography.

2 marks

- b. Identify a potential problem for the school when these teams transmit data to the website.

1 mark

The geography teachers have been asked to evaluate the effectiveness of this prototype website.

- c. i. Recommend one criterion which could be used for this evaluation.

- ii. Explain why you chose this criterion.

2 marks

Question 10

ToysOnline advertise and sell toys online. Two screen mock-ups for a new home page are shown below.



The owner of ToysOnline does not like either screen mock-up.

- a. Hand draw a new design that is complete and appropriate for the content. Indicate fonts, colours, links and layout.

A large, empty rounded rectangular box with a thin black border, intended for the student to hand-draw a new website design.

5 marks

Design elements

- proportion
- orientation
- clarity
- consistency
- colour and contrast
- usability and accessibility
- appropriateness and relevance

- b. Choose two design elements from the list shown and explain how each has been considered in your design.

Design element 1 _____

Explanation _____

Design element 2 _____

Explanation _____

4 marks

Question 11

A group of thirteen professional sports coaches, located all over Australia, communicate as a virtual team. They discuss rule changes and umpiring decisions collaboratively. They use the Internet and Acme Office 2004 for their communications.

- a. Describe how the coaches could use the Internet to make group decisions.

2 marks

- b. Discuss how the coaches can avoid journalists gaining access to their discussions before any decisions are released officially. Give an example to support your answer.

2 marks

Two coaches recently installed the latest Acme Office 2008 suite on their computers. The other eleven coaches complain that now they cannot open attached files from these two coaches.

- c. Explain why this problem has occurred.

1 mark

- d. Recommend a **strategy** to stop this type of problem. Justify your answer.

2 marks

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Question 12

The spreadsheet below is used by AutoFresh to manage the cash and stock in automatic drink and food machines in school canteens. Each machine can dispense 100 drinks of each type.

	A	B	C	D	E	F	G	H
1	Hot Drink Type	Cost per Drink \$	Sales	Re-order	Total per Drink \$	School Share per Drink Type \$		
2	White Coffee	2.20	50	YES	110.00	3.50		
3	Cappuccino	2.50	34		85.00	1.70		
4	Black Coffee	2.00	67	YES	134.00	4.69		
5	White Tea	2.20	30		66.00	1.50		
6	Black Tea	2.00	38		76.00	1.90		
7	Peppermint Tea	2.00	23		46.00	1.15	School Share	
8	Green Tea	2.00	8		16.00	0.24	Sales	\$ per sale
9	Chamomile Tea	2.00	12		24.00	0.60	0	0.03
10	Hot Chocolate	2.50	35		87.50	1.75	10	0.05
11	Chicken Soup	2.00	27		54.00	1.35	40	0.07
12	Vegetable Soup	2.20	34		74.80	1.70		
13								
14	Total		358		773.30	20.08		

- a. Which cell indicates the total amount of cash in the machine?

1 mark

The Re-order column indicates YES if sales are over 40.

- b. Write the formula for cell D2 that returns the correct answer.

1 mark

AutoFresh pays the school a share of the money based on the number of sales per month of each hot drink type. They are calculated

for 1–9 sales the school receives 3 cents per sale
 for 10–39 sales the school receives 5 cents per sale
 for 40–100 sales the school receives 7 cents per sale

- c. Write the formula for cell F2 that will calculate the school share of sales and which can be dragged or replicated in cells F3 to F12.

1 mark

The spreadsheet designer has been asked by AutoFresh managers to provide a formula that returns the highest sales of all the types each month in cell C15.

	A	B	C	D	E	F	G	H
1	Hot Drink Type	Cost per Drink \$	Sales	Re-order	Total per Drink \$	School Share per Drink \$		
2	White Coffee	2.20	10					
3	Cappuccino	2.50						
4	Black Coffee	2.00	25					
5	White Tea	2.20	15					
6	Black Tea	2.00	37					
7	Peppermint Tea	2.00	28				School Share	
8	Green Tea	2.00	14				Sales	\$ per sale
9	Chamomile Tea	2.00	29				0	0.03
10	Hot Chocolate	2.50	15				10	0.05
11	Chicken Soup	2.00	12				40	0.07
12	Vegetable Soup	2.20	5					
13								
14	Total							
15								

The formula = **Max(C2:C12)** is entered in cell C15.

d. Provide test data for cell C3 to test the formula.

Test	Data	Actual Outcome
1	C3 =	C15 =

1 mark

e. Suggest how the spreadsheet could be altered to enhance the meaning of the information shown in C15.

1 mark

The AutoFresh managers currently receive reports containing pie graphs/charts of sales figures at the end of each month. AutoFresh managers want to print pie graphs or charts of the Sales at other times in the month.

The Help Desk creates a macro to complete this task.

f. i. Explain why the Help Desk chose a macro.

ii. Describe how this helps to meet the managers' information needs.

2 marks