



**GENERAL COMMENTS**

The comments made in this report are based on the *Information Technology VCE Study Design* for 2007–2010. The 2007 examination tested a wide range of key knowledge and skills as listed in Units 3 and 4 of the *Information Technology VCE Study Design*.

It was very pleasing to see that students were able to demonstrate their understanding of the key knowledge associated with the study design. Many responses to the range of scenarios in Section B indicated that teachers had covered the course content in appropriate breadth and depth. Generally, students’ ability to apply their knowledge appeared better than in previous years. In the questions associated with spreadsheet and database management software, for example, students were clearly able to draw on a wide range of practical exercises completed during their studies to demonstrate knowledge of key skills associated with the study design.

Teachers are reminded that the study design lists a number of skills that students are expected to study when using the spreadsheet and database management software to develop solutions to problems. These include: create user interfaces; apply mathematical calculations to data; create macros to perform repetitive tasks; construct queries and sorts; and create reports that assist in decision making.

Students who did not obtain full marks often had not read the question with enough care. For example, in Question 12a, students were asked to select one laptop and one smart phone feature and describe how each would help process or input useful data for crews working in the country. Many students selected features that were not associated with the input or processing of data or they did not relate their response to crews working in the country.

**SPECIFIC INFORMATION**

**Section A – Multiple-choice questions**

The table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	Comments
1	93	1	6	1	
2	6	48	3	43	Many students were distracted by electronic and physical (option B) and did not correctly identify the security measures used to prevent unauthorised access to data and information as electronic and electronic.
3	6	90	2	2	
4	11	21	58	10	
5	32	51	4	13	
6	7	83	4	6	
7	45	13	23	18	
8	37	7	10	47	
9	17	2	18	63	
10	1	6	7	86	
11	6	2	10	81	
12	3	2	90	5	
13	5	86	1	8	
14	71	13	13	4	
15	30	12	53	5	Many students chose number as the data type (option C); however, the phone number shown contained ‘spaces’ and ‘brackets’ which are text data types (option A).
16	15	68	5	12	The majority of students chose option B. The query contains the comparison operators ‘<>’ (not equal to) and ‘<’ (less than). Both conditions must apply under the logical operator ‘and’. This query will return the <i>Movie_Title</i> ‘Fun and Games’ which has the ID 3 (option A).



Question	% A	% B	% C	% D	Comments
17	39	21	28	11	Many students were distracted by an organisational goal (options A and B). The scenario described an organisational objective at the tactical level of decision making (option C). An organisational objective is a small, achievable and measurable task undertaken to achieve a goal.
18	3	73	18	6	
19	20	7	54	19	
20	23	34	23	21	The fairly even distribution across the incorrect options suggested that many students did not understand either the one-to-many relationship or its representation in the diagram. The correct response was option B, as it was the only diagram where the Book_ID was shown as one (unique) in the Book table and the Borrower_ID was shown as one (unique) in the Borrower table.

Students generally answered questions in this section well and the vast majority of students answered all questions.

### Section B – Short answer questions

For each question, an outline answer (or answers) is provided. In some cases the answer given is not the only answer that could have been awarded marks.

The short answer section was answered well. Students provided a wide variety of examples to support their descriptions of procedures, people, software and equipment in organisational settings.

#### Question 1a.

Marks	0	1	2	Average
%	5	21	74	1.7

Full marks were awarded to responses which selected positions A, D or H and provided an explanation of how placing the Newsletter link in the chosen position enabled users to intuitively and confidently locate the information they required.

It was very pleasing to see that most students gained the marks allocated.

#### Question 1b.

Marks	0	1	2	Average
%	4	20	76	1.7

Answers needed to discuss the legal obligations that principals and schools have with respect to the ownership and privacy of information, such as the use and disclosure of information, and provide examples of appropriate procedures and equipment for preventing unauthorised access to school reports placed online, such as password protection.

#### Question 2a.

Marks	0	1	2	Average
%	14	39	47	1.3

'Portability' and 'capacity' were appropriate features. Students also needed to provide explanations relevant to the needs of the library, the technician, or the types of files stored.

#### Question 2b.

Marks	0	1	2	3	4	Average
%	14	8	25	16	36	2.5

	Recommendation	Justification
storage location	<ul style="list-style-type: none"> <li>onsite in a fireproof secure cabinet</li> <li>offsite in a secure location</li> </ul>	<ul style="list-style-type: none"> <li>so that it can be re-instated quickly</li> <li>so that it is not damaged in a disaster</li> </ul>
backup schedule	<ul style="list-style-type: none"> <li>daily or incremental backup after hours</li> </ul>	<ul style="list-style-type: none"> <li>because new video clips are added every day</li> </ul>

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Students were asked to recommend and justify the procedures associated with the equipment chosen as backup media for the library's movies, video clips and articles. Most students were able to recommend and justify a storage location but fewer could also recommend and justify a schedule in order to obtain full marks for this question.

### Question 3a.

Marks	0	1	2	3	4	Average
%	4	2	15	9	70	3.4

Correct answers included:

- it is not addressed to an individual, so it is probably a bulk mail out and a scam
- banking details are not entered on an insecure site, so it is not a genuine email.

Most students described threats to the integrity of data and the security of information presented in this email.

### Question 3b.

Marks	0	1	Average
%	22	78	0.8

Accepted responses included:

- delete
- move the email to trash.

### Question 3c.

Marks	0	1	Average
%	64	36	0.4

Any of:

- immediately
- face to face warning
- at a staff meeting
- via a public address announcement.

Full marks were awarded where the answer indicated that the network manager could be certain the message was received quickly and by as many users as possible.

### Question 4a.

Marks	0	1	2	Average
%	14	28	58	1.5

Any two of:

- search box
- link to 'Training'
- the table of contents.

Other explicit examples of navigation features visible on the screenshot were also accepted.

### Question 4bi-ii.

Marks	0	1	2	Average
%	47	23	30	0.9

4bi.

Accepted efficiency measures included the time taken or effort required to display the required information.

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**4bii.**

Appropriate measures included:

- count the mouse clicks
- record the time for information to appear.

Answers which correctly described surveying users about the time or effort associated with the help screens were also awarded full marks.

**Question 5a–b.**

Marks	0	1	2	3	Average
%	15	20	22	43	<b>2.0</b>

**5a.**

Task 25 is a milestone, as it has zero duration.

**5bi.**

A predecessor is a task which must occur before another task can start.

**5bii.**

With no predecessor, Task 24 can start at any time.

Most students were able to identify a milestone and define a predecessor in the context of planning and monitoring the creation of a database to sell sports equipment online.

**Question 6a.**

Marks	0	1	Average
%	59	41	<b>0.4</b>

Acceptable answers included either of:

- to provide closed or limited access to research data
- so that the media or rival scientists cannot use the research findings without permission from the research group.

**Question 6b.**

Marks	0	1	2	Average
%	52	26	22	<b>0.7</b>

Answers which described the graph, headings or icons in terms of proportion, orientation, clarity and consistency, colour or contrast, usability or accessibility, appropriateness or relevance were awarded full marks. For example, 'contrast is achieved in the heading where a dark relief is used with a light coloured font' and 'consistency is achieved through the use of similar shapes (squares and rectangles) and the use of a single font type'.

**Question 6c.**

Marks	0	1	2	Average
%	65	9	27	<b>0.6</b>

Acceptable design tools included:

- annotated diagrams
- screen mock-ups
- storyboards
- layout diagrams.

Students should know the design tools and design elements, which are listed in the study design on pages 28, 32 and 48.

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## Question 7a.

Marks	0	1	Average
%	44	56	0.6

A spreadsheet is easier to set up than a database, and requires less training to use.

A database, once it is set up, has better input and reporting features than a spreadsheet.

## Question 7b.

Marks	0	1	2	Average
%	40	33	27	0.9

Susan can use the spreadsheet to set out columns for all conference and customer details. She can set formulas to calculate totals and use a sort function to arrange the data into whatever groups she needs.

Susan can use the database to set up forms to input online data directly into the right table. She can use a report wizard to print or display the timetables she needs.

A variety of other answers were also accepted, provided the student showed that they could analyse current information processing practices and identify appropriate database management or spreadsheet features, functions, formats or validation techniques to produce the required information.

## Question 7c.

Marks	0	1	2	Average
%	7	36	57	1.5

Any four of the following data items to be included on a receipt were accepted.

- Conference items, such as:
  - conference name
  - time
  - location.
- Payment items, such as:
  - credit card details
  - amount received
  - cost of conference.
- Client items, such as:
  - client name
  - client email address.

## Question 7d.

Marks	0	1	Average
%	25	75	0.8

The manner and purpose of collection of personal information.

Any one of the privacy principles listed in the *Privacy Act 1988* was accepted. It was very pleasing to see that most students obtained the mark for this question

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## Question 7e.

Marks	0	1	2	Average
%	22	39	40	1.2

Susan must explain the reason for collecting the data in a statement of purpose which must be clear and easily accessible on the Conferences-R-Us website.

Other acceptable answers correctly named a key principle of the *Privacy Act 1988* and explained what Conferences-R-Us must do to monitor or control storage, or to communicate, or to dispose of the personal information collected via their website.

## Question 8a.

Marks	0	1	Average
%	47	53	0.6

The network enables the artists working in different studios to quickly or easily collaborate or share data, information, ideas and files.

## Question 8b.

Marks	0	1	Average
%	72	28	0.3

Correct responses explained that a client server network provides a network manager with a central, electronic overview, or it allows the monitoring of security or file management.

Other answers were also accepted where it was clear that the advantage described derived from both central and electronic control or monitoring.

## Question 8c.

Marks	0	1	Average
%	40	60	0.6

In the event of a power surge the Uninterruptible Power Supply gives the artists time to save the file they are working on.

Most students were able to explain the benefit of an Uninterruptible Power Supply within a strategy to prevent accidental equipment malfunction.

## Question 9a.

Marks	0	1	2	Average
%	27	43	30	1.0

Following are some examples of acceptable answers.

- Primary keys must be unique. Given that two people can have the same surname, surname alone cannot be used as a primary key.
- When a postcode is included in the suburb field, you cannot sort by postcode or it cannot be validated easily. 'Street' only has a number and no street name, which will make it impossible to deliver letters.

## Question 9b.

Marks	0	1	2	Average
%	33	30	38	1.1

### 9bi.

Boolean is a logical data type. It only allows one of two options to be entered – yes or no.

### 9bii.

Adam has used it because fees paid only has two options, paid or not paid

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## Question 9c.

Marks	0	1	2	3	Average
%	19	25	34	22	<b>1.6</b>

Adam would need to:

- create a separate field for postcode (and delete it from the suburb description)
- make the new field a numeric or integer data type
- add a validation rule 2999<Postcode<4000.

The majority of students were able to comment on the structure of the database and the choice of a primary key. They also described and explained the use of the Boolean data type in the context of the question. However, it was clear that many students understood the concepts associated with the electronic data validation in the given context but could not correctly list all of the steps required.

## Question 10a–b.

Marks	0	1	2	Average
%	34	33	33	<b>1.0</b>

### 10a.

The patients' records chosen for archiving have not been accessed for 12 months.

### 10b.

Archiving frees up space in the memory and makes searching the database faster.

## Question 10c.

Marks	0	1	2	3	4	Average
%	17	26	31	19	8	<b>1.8</b>

Legal obligation: Karen has to work within the provisions of the *Health Records Act 2001*. For example, she must be sure that patients have consented to the disclosure of information given in confidence.

Ethical conflict: Although the medical research may be beneficial to society and, in some circumstances, it may be legal for Karen to send the records to a research project, it may not be ethical. Karen may be worried about breaking the trust between patients and doctors if she reveals information given in confidence.

Many students described one of the other 11 principles in the *Health Records Act 2001* to correctly answer the first part of this question. Although many students could identify a legal reason why the medical clinic should monitor or control the storage, communication or disposal of information, they were not able to explain an ethical dilemma. Many students seemed to have a vague understanding that Karen would be uncomfortable about sending the information given in confidence, but they could not frame an answer in terms of Karen 'weighing up' or choosing between two equally difficult or equally beneficial options.

## Question 11a.

Marks	0	1	Average
%	23	77	<b>0.8</b>

=SUM(D7:D18), or an equivalent correct formula

## Question 11b.

Marks	0	1	Average
%	61	39	<b>0.4</b>

The \$ sign indicates an absolute reference, or that the reference remains the same when D7 changes to D8, D9, ... D18 as the formula is dragged or filled down.

## Question 11c.

Marks	0	1	2	Average
%	36	36	28	<b>0.9</b>

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A pie or bar chart of the 'Duration of Call' or 'Cost of Call' data would quickly show a comparison of call duration or percentage cost per carrier.

A number of other chart types and appropriate explanations were also considered worthy of full marks.

### Question 11d.

Marks	0	1	2	Average
%	69	21	10	<b>0.4</b>

Select cells A7 to D18 and use the sort function in ascending order.

It was disappointing to note that so few students were able to answer this question correctly.

### Question 11e.

Marks	0	1	2	3	4	Average
%	38	2	19	2	38	<b>2.0</b>

Appropriate data to test the formula included the following.

Test	Data	Expected Result
1	B2=170.20 B3=80.20 Or other examples of figures which tested the ""option	NO ALERT ""
2	B2=190.20 B3=80.20 Or other examples of figures which tested the "ALERT" option	ALERT

A wide range of responses were accepted, so long as the data provided correctly tested for an ALERT and "no entry".

### Question 12a.

Marks	0	1	2	Average
%	36	36	28	<b>0.9</b>

Laptop feature: Photoshop will help crews to process (recolour, crop or resize) images of the land they are mapping.

Smart phone feature: A full keyboard or camera will help crews input data quickly while moving around the country.

### Question 12b.

Marks	0	1	2	Average
%	28	37	35	<b>1.1</b>

Modem: A modem will allow crews to use the analogue phone network to send digital images to head office.

### Question 12c.

Marks	0	1	2	Average
%	5	10	85	<b>1.8</b>

Acceptable answers included:

- camera pictures and video
- Internet access
- wireless broadband
- Windows Mobile 5.0
- Internet Explorer Mobile.



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Constant advances in mobile technology meant that other features on the list could be accepted as likely to assist video conferencing.

## Question 12d.

Marks	0	1	2	Average
%	42	16	42	1.0

Encryption: Encrypted data is 'scrambled' so that even if it is intercepted it is unreadable to hackers. Only the person at head office with the correct encryption key can 'unscramble' the data and read it.

It was pleasing to note that many students were able to explain how various laptop and smart phone features helped input data or process information and to describe how a modem would support communication between crews working in the country and head office. The majority of students also explained very clearly how encryption works. A smaller number also described the procedures associated with the key that needs to accompany it.