

**Section A****Question 1**

- (a) Very few candidates understood the idea of “personalising”: instead they discussed making the lessons interesting with pictures. The term “correspondence” (meaning communication by letters or written communication) also caused some misunderstandings: many took it to mean “communication” in general.
- (b) Many candidates gave correct and detailed explanations of the two methods of getting photos of the food to Sandy, but didn’t choose a method or justify their choice. Sometimes only one method was described – they seemed to have already chosen this as the best solution without mentioning any other possibilities. Criterion 2 requires the candidate to “identify and **choose**... and **justify choice**.” This was also the case in Question 2c, where many details of the different online tools were given, but often without any discussion of the positives and negatives of each, even though this was specifically asked for in the question.
- (c) A number of candidates discussed at length the strengths and weaknesses of online learning. This was not what the question asked. It is important for candidates to read the question carefully and address their answers to that as well as to the relevant criterion.

A number of weaker candidates gave the reason for a particular solution not being feasible: “that students would find it hard to do as they were not technology students but food students”; “that students would need to be computer literate”; or “that students couldn’t afford this”. Stronger candidates addressed the technological considerations such as need for bandwidth or procedural reasons such as the need to meet at the same time.

In general, it is important for students to use the correct terminology. For example, a “camera thingy” does not convey that the student has a good understanding of what they are describing.

Some quotes:

- “You can use 3D software, but you would need to flatten the image before sending it.”
- “I do not recommend scanning the food.”

Question 2

- (a) A significant number of candidates were unsure of how to classify MS Excel e.g. “Database software such as MS Excel” or “I suggest the more powerful MS Access or the lower version, Excel”. Better candidates suggested the use of a national online DB with a web interface. Better candidates also made the point that in using a database various reports could be produced to extract information, such as capitation, from the stored data.
- (b) This question was very well received by candidates, some of whom wrote extensive answers even though the recommended time was 10mins. Unfortunately, a significant number of these candidates then offered two paragraph answers to the longer question, making it difficult to obtain a higher mark having mainly addressed

15 out of 35 minutes allocated to the section. Most candidates contrasted the synchronous nature of phones with the asynchronous nature of email but few suggested the use of a message bank as compensation. Better candidates included mobile phones in their discussion. Most candidates also mentioned the advantage of email file attachments.

- (c) As mentioned above a number of candidates offered short answers to this question after writing an inordinate amount for 2b. Good candidates differentiated between low cost, low bandwidth web cam communication systems such as MS NetMeeting with monitor top cameras and headphone/microphone and studio based video conferencing systems over high bandwidth lines, suitable for medium to large groups. Weaker candidates suggested web cam systems be used for tribunal hearings. Most candidates demonstrated their familiarity with chat sessions and bulletin boards and were able to argue their use for inter/intra club communication. Some entrepreneurial candidates suggested that tribunal sessions could be streamed live and interested people charged access. Follow up chat sessions could be held for people to air their views on proceedings, decisions etc.

Question 3

- (a) Weaker candidates mentioned a presentation package such as PowerPoint, without actually describing its features; in particular the ability to incorporate images, text, sound, animation and the facility to navigate in various ways. There was much mention of how wonderful the software is and how much it costs, but often little indication of its functions.
- (b) Because the question didn't specify strengths and weaknesses, many candidates gave solutions which were not very feasible; for example, permanent video conference links, without discussion of other possible solutions or justification that their solution may have been the best. Email was often suggested for communication, but again, without explanations why it may be useful.
- (c) Answers were either excellent or very poor. Stronger candidates gave many examples of good interactive multimedia products and described what these involved. Poorer ones assumed that the reader knew what interactive multimedia meant and proclaimed how wonderful it was.

In general, many students got bogged down with the idea of producing software rather than the means to:

1. promote it
2. communicate and plan and
3. describe a multimedia presentation.

Failure to read the question carefully resulted in low marks.

Examiner Sample Solutions

Question 1

- (a) To personalise lessons and correspondence calls for mailmerging. Lessons etc. can be set up as standard documents containing merge fields such as the students name and address.

Software recommended would be a standard word processing package with mailmerge facility.

- (b) To provide images in electronic form would require a digital camera to capture the images and to transfer these to a computer. Transfer varies with camera type e.g. Sony Mavica uses standard floppy discs, others may use

a cable or perhaps memory stick. The students would also need software to embed the digital photos in a document and possibly to enhance 'poorer' photos (cropping, changing brightness etc). Software ranges from a web page editor, to a word processor, paint package or desktop publishing package.

(c) Major communication tools include:

- Email
Person to person, fast, personal, two way (full duplex) communication, text and images (non text attachments).
May be limits on number of photos that can be sent as an attachment at one time, but not an insurmountable problem e.g. could send photos separately rather than together.
- Web pages
 - Can be structured with links e.g. to depict stages of food preparation etc
 - Email would also be needed for personal communication
- Telephone
 - This method allows for immediate feedback to be provided on factors such as taste and smell etc
 - Person not always available to receive call (synchronous)
- Video conferencing
 - Provides visual feedback in real time plus voice
 - Expensive to set up. Camera, computer and special software required.

Question 2

- (a) Clubs would need to maintain a database of their members (names, addresses, fees paid etc). This database would provide a figure for the number of members via a statistical report. At a pinch, a spreadsheet could also be used.
- (b) Email has the advantage of being able to archive mail and organise it by classifying into folders etc. Email will always be there waiting for you, unlike phone calls which can be missed. (asynchronous) (Voicemail is an option of course but can be tedious to use when there are many messages to sift through). Interstate phone calls would be more expensive than email. The size of the office may be a factor here – is it manned 9:00am-5:00pm or only occasionally? In the latter case email would be the way to go. Realistically having both options would provide the best solution.
- (c) Video conferencing allows users in disperse locations to meet together. Use cameras, mikes and software, or specialised videoconferencing systems to see and talk. Need communications (ISDN, DSL) link. Groupware, such as NetMeeting, allows real time interaction. Shared software etc. Chat allows text interaction in real time and low cost. Bulletin boards allow sharing of information but not quite in real time. On-line forums through the web.

Question 3

- (a) A presentation package allows for a number of linked pages to be displayed (one at a time). Navigation from page to page may be automatic or manually via a mouse click. Pages can contain images, text, sound and animation at various levels of complexity. As such a reasonably powerful multimedia computer would be required to handle the processing of animation, video clips etc. Also a projection system and infrared/radio mouse.
- (b) Team meetings may call for the formation of a distribution list on the company email system such that a given message automatically reaches everyone on the team when sent. Communication hardware required to

connect to internet. Software to manage the project milestones (eg MS Project) would suffice. Also a time management/diary package such as MS Outlook or Netscape Communicator could help determine meeting times.

Alternatively a secure website could be constructed with some form of display (graphical, tabular) that could be contributed to and updated by each group member (i.e. a form of groupware)

- (c) There are a number of packages available which produce interactive multimedia at various levels. (e.g. Macromedia's Dreamweaver, Flash and Director or MS Frontpage)
Flash and Director have tools for producing animation (tweening and step by step) using a variety of data types (vector graphics, bitmaps, video clips, sound etc)
The presence of a programming language allows behaviours to be assigned to frames in a movie and 'actors' in a movie (e.g. click a button to jump to a new scene)
Loan calculators, games etc can be programmed. The resultant movies can typically be published in a standalone form or embedded in a web page.

Section B

Question 4

Issues: The Internet extends across geographical and political boundaries making policing it very difficult. Sites/material can be moved easily from country to country to bypass restrictions. Cultural differences between countries/groups make censorship difficult to enforce.

Comments: About half the candidates gave satisfactory answers. Many misinterpreted the question, reading it as features on the Internet and outlined methods for blocking sites and discussed search techniques. It seemed to be a common belief that "there are just too many sites" to police.

Question 5

Issues: Laptop computers tend to have similar capabilities these days as far as processing power is concerned, but they are substantially more expensive and suited to different situations.

Comments: This question was answered well in relation to laptop computers, however it was evident that many candidates have little or no experience with palmtops, or chose to ignore this part of the question. More able candidates addressed the criteria while the weaker ones gave a simple discussion on the advantages and disadvantages of each. Issues such as ergonomics, restricted keyboard layout and reliability were often overlooked. Most candidates felt that there would be a place for both with the number of laptops increasing as the price decreases.

Question 6

- (a) *Issues:* It would be possible to teach and test driving using simulators. It is difficult and expensive to construct a simulator that provides real driver feedback and caters for a wide range of environments. Trialing such a method in one or two areas would be a good idea. Psychologically the learner driver would know they were playing and so this method would need to be used in conjunction with the real experience. As the driver will eventually drive on a real road it would be best to experience the real thing.

Comments: This section was attempted by about 50% of the candidates with many addressing the 3 aspects of feasibility – technical, economical and operational. Some thought the suggestion possible because flight simulators and racing car games are currently used for training and/or pleasure. It was evident that many

students do not understand what a virtual reality simulator is and the cost of installation and maintenance of such a system. Differing road conditions, hazards, vehicle models were discussed and many suggested that a combination of simulator training and real life driver training would be preferable, as is currently undertaken with pilot training.

- (b) *Issues:* A number of attempts at publishing on the web have occurred recently with readers using normal computers or special purpose devices such as PDAs. Although printing is an option, the question is do readers really want to read material using such devices. This method may be suitable for technical manuals but as yet most people enjoy the feel of a physical book.

Comments: About 50% of the candidates answered this question, with a wide ranging quality of answers. A clear discussion on the different aspects of feasibility was expected for a good award. Some students discussed the technical and economical issues of reading newspapers on line and the advantages of printing off specific articles. Others discussed the online purchase of novels, chapter by chapter and the ability of pick an option to customise story lines and create interactive novels. Issues such as ergonomics, eye strain and copyright were raised. While the depth of answers varied greatly, most stated it is more pleasurable and practical to read a book in bed, at the beach or in the bath!

Examiner Sample Solutions

Question 4

The internet extends across geographical and political boundaries. This makes attempts at policing it more difficult. E.g. gambling may be banned in Australia but companies may try and overcome the ban by moving offshore. Other overseas gambling sites would be available anyway. Similarly, censorship laws may be restrictive in one society and liberal in another making censorship difficult to enforce. The Internet is also quite fluid, making it easy to move sites/material to bypass restrictions.

Question 5

Laptop computers tend to be on a par with desktops these days as far as processing power is concerned although they tend to be rather more expensive. Nevertheless, they are designed with portability in mind, and that is one of their major strengths. (e.g. a scientist using it in the field or a policeman using it in a patrol car). The major downside tends to be a more awkward keyboard to use and limited adjustment of keyboard/screen positioning.

Palmtops are becoming a useful device to have but are not at the stage of replacing laptops or desktops. The stylus is fiddly to use and screen display is necessarily limited.

With the advent of flat screen technology, the footprint of a desktop is quite small these days and they are generally more pleasant to work with.

For the above reasons I would not predict the imminent demise of the desktop.

Question 6

- (a) It would be possible to teach and test using simulators. After all, this is done for airline pilots.

The effectiveness would be related to the sophistication of the simulators. It is difficult to construct a simulator that provides real driver feedback and caters for a wide range of environments.

On the one hand we could have someone using a mouse and monitor, on the other hand we could use a real car with road conditions, hazards etc being projected to a screen in front of the windscreen. The latter is

obviously preferable but probably prohibitively expensive as far as testing the masses is concerned. Trialing such a method in one or two areas would be a good idea.

Psychologically, a learner driver would know they were only 'playing' and therefore this method would need to be used in conjunction with the real thing. In the end, the driver will drive on a real road and it would be best to experience the real thing.

- (b) A number of attempts at publishing on the web have occurred as mentioned. e.g. recently, an author published the first chapter of his book on the web and readers had to buy subsequent chapters at a small cost of \$2 or thereabouts. Readers may use normal computers (printing of text therefore would be an option) or special purpose devices such as PDAs.

The question is – do people want to read material using such a device? The answer is probably no, although this may depend on the type of material –is it a novel or is it a technical manual?

There has not been a large scale movement towards this type of reading as yet. There is nevertheless a movement in this direction- most of the large newspaper publishing houses provide an on-line version of their paper. The opportunity to make a novel 'living' may attract a different style of 'reader', some of today's interactive games players.

It may be that new technologies such as electronic paper – flexible transparent film that can have text downloaded into it – may tip the scales in favour of this new method. There may also be economic factors (like the banks), the electronic versions may be much cheaper than the traditional hardcopy books. At this stage the general public hasn't been convinced to curl up in bed with their I-bookman.

Section C

Question 7

Asked to select one of four choices, some candidates attempted two, which is the format in later sections. Many candidates chose part (a) and of these, most mentioned size as the key issue. However, amongst the other candidates there was a wide variety of answers. Many ignored the power saving advantage of LCD screens.

Very few candidates chose part(b).

Many candidates chose part(c) which was generally well done.

A few candidates chose part(d) with more than 50% answering incorrectly. Some candidates confused groupware with software licencing and ignored the collaborative nature of groupware.

Question 8

- (a) This was by far the most popular choice but had the lowest standard answer. There was a lot written about what the items could do and the cost of running them but precious little about the technology used to make them possible. Clearly most candidates had little regard for the criterion being assessed.

Many wrote that mobile phones can access email without any qualification or explanation what is required for this to be possible. There seemed to be a confusion between SMS and email. Some described email as a device.

- (b) This was the second most popular choice and many answers addressed the question well but some added very little information to that already provided in the question. Sequential versus direct access was typically ignored when comparing magnetic tape with magnetic discs.
- (c) Generally well done but with minimal detail. The step in the process of analyzing scanned pixel patterns to determine which character was represented was the weakest part of the answers to this question.

Question 9

There was a fairly even choice for this question with part(a) being the most popular.

- (a) Generally well done though an understanding of minicomputers and mainframe computers was often lacking, particularly for minicomputers (which one student thought referred to a gameboy!). Many referred to monochrome as being black and white but in fact it can be a green or orange screen depending on the phosphor (sic!) used in the monitor (no marks deducted).
- (b) There was a variety in the quality of answers with very few demonstrating a good understanding of the features of a database beyond the basic structure of tables, records etc. Candidates strongly believed there was a distinct difference between the two types of software. A strong mathematical (formula) element to spreadsheets versus a record based structure to databases allowing complex searching, data validation, versatile reporting etc.
- (c) Most demonstrated a basic knowledge of the three types of networks and justify their choice for a school laboratory, but only a few demonstrated a knowledge of performance and reliability issues.

Examiner Sample Solutions**Question 7**

- (a) LCD screens are physically much smaller than CRTs (especially with respect to depth), and can operate on battery power. CRTs would defeat the purpose of portable computers making them heavy and unwieldy.
- (b) A gateway is a computer that performs protocol conversion between different types of networks or applications (e.g. switching data signals between satellites and terrestrial networks.)
A bridge may be used to subdivide a LAN into segments (e.g. within a particular building or area of a college) The bridge will keep traffic contained within a segment to improve performance. Bridges are protocol independent.
- (c) System software is software that augments the operation of a computer system and makes the computer easy to use. This includes the ability to run application software, deleting and renaming files etc.
Application software is end-user software we regard as useful; word processors, spreadsheets and accounting or management packages etc.
- (d) Groupware is software that allows a number of people at different locations to contribute to a particular task at the same time (e.g. creating an architectural drawing). i.e. it is collaborative software assisting in scheduling meetings, communicating, sharing ideas etc

Question 8

- (a) Mobile phones allow clear voice communication (point to point). (Their primary purpose)

Mobile phones allow short text messages to be sent and received.

Mobile phones (WAP) can receive web pages (at great expense)

An internet capable computer can be used for voice messaging over the net, although the quality is not 100% at present. Large text messages and a variety of other file types (images, voice etc) can be sent to one or many people. Web access is much more convenient, useful and cheaper with a computer.

- (b) Moving from left to right along the sequence there is a change from off-line media (paper tape and cards and mag tape) to on-line media.
- Punched cards required human intervention in their processing.
- Tape has greater data density than cards (& cheaper) Hardware cheaper also.
- Tape accuracy harder to verify than card accuracy and correction of errors not as easy.
- No wasted space in the case of short records.
- Generally read optically but speed limited because of the physical nature of the media.
- Both paper media easily damaged.
- Magnetic tape has much greater data density, capacity and transfer rate. Used primarily for backup.
- Hard disc similarly has vastly greater capacity than floppy (Gbs vs 1.5 Mb) and access speed. Supports random access.
- (c)
- Scan the document and obtain a monochrome bitmap image.
 - Compare patterns of pixels representing letters to determine which letter is represented.
(This is the tricky part. Sometimes one has a choice between fast and careful in this phase. Is it an “i” or “l” for example) Use of spell and grammar checkers to assist interpreting.
 - Words not in dictionary may be highlighted, allowing correction.
 - Text is made available to an application or provided in a known file format.

Question 9

- (a) monitor – standard computer output device
Standards – high resolution monitor SVGA
1600x1200 pixels, millions of colours
processing chip – CPU – this runs a program by fetching and executing instructions.
It contains a control unit and an ALU. The control unit controls the movement of signals between memory, special registers and the ALU
Typical speed today –700-1500 MHz, 32 and 64 bit
Main memory – contains program and data-solid state RAM, volatile
Typical size – 64Mb, 128Mb, etc
Sec storage devices – permanent storage – Hard disc, CDROM, DVD
Typical HDD size – 20-90 Gb
Printer – standard output device. Typically laser or ink jet, not many dot matrix printers now.
Minicomputer – powerful, midrange to large computer, between desktops and mainframes in processing power. Multitask, multiuser. Typically used by large organizations for specialized tasks such as research projects. Costs hundreds of thousands of dollars.
Mainframes- -more powerful again – Cost \$millions – typically used by banks, airlines, universities etc.
- (b) In spreadsheet software data is placed in cells defined by the intersection of rows and columns.
Formulae are placed in cells also and the results of these are displayed. As such, this is particularly useful for testing data and answering ‘what-if’ type questions.

There are many enhancements in typical packages such as macros to automate certain procedures etc. (e.g. Replace Granny Smith with G.Smith) and database functions. The underlying premise however, for spreadsheets is calculation.

Database software generally allows much stricter control of data structures and validation. Reporting can be performed in a more versatile fashion and filters etc. can be applied. The emphasis is on data storage and reporting the data in many different ways to suit different users of the database. I would not therefore agree with the premise.

- (c) Star network – central distribution device (typically hub or switch) with a connection to each (node). Can be vulnerable to failure because if the central device dies, the whole network goes down. However, failure of one node or cabling to a node doesn't stop the others communicating.
- Bus network – each node handles its own comms control. All comms travel along a common bus and is examined by each device to see if the message is intended for it. Since all devices share the same medium, a break in the bus stops communication for all devices. Bus networks use less cable and allow longer runs of cable.
- Ring network – each device connected to 2 other devices. Whole network forms a complete logical ring. Messages passed around the ring until they reach their correct destination. Using token passing, can guarantee communication will take place, hence often used in manufacturing automation systems.

Suggest use a star network as it has greater reliability and tends to be the industry standard topology for local area networks.

Section D

A significant number of candidates failed to achieve C ratings (or better) in this section. Characteristics of these papers were:

- Failure to write to two of the Question 10 terms and/or poor/general responses to Question 10, combined with poor Question 11 responses (see below);
- Failure to balance the time demands of the whole examination (eg "I ran out of time" written after 8 lines of the essay) – such candidates would be well advised to write a point-form plan if time runs out; and
- Failure to understand the requirements of the essay section – many who did not achieve C's had done poor Question 10 responses and then completed a (too short) essay focusing on one or two points without understanding the complexity of the topics in Question 11 and the range of issues requiring discussion in each part. Question 11.c., for example, seems to have attracted students looking for an 'easy answer' – 'its wrong because it is cheating' – and that was the sum of many arguments.

Question 10

Generally these questions were answered quite well and most candidates were able to balance the time requirements and complete the correct number of terms. This said, a somewhat surprising number wrote on only one term.

In 10(a) some confused Cookies with Caches or were unsure how they are introduced into a system, by whom, and for what purpose.

In 10(b) & 10(c) the major problem was a lack of specifics (eg 'employee monitoring is when bosses monitor employees'). Specific examples were needed to clarify statements.

Question 11

- (a) A common problem for candidates was ensuring they covered a sufficient range of issues. Weaker papers focused on one or two issues (eg backup and viral protection only). Some used the issue of backup systems to write 'all they knew' about secondary storage devices without any real reference to the question. A surprising number suggested that backup storage should be done on 3 1/2" floppy discs, reflecting little understanding of the volume of data generated by businesses/organisations. Many wasted valuable time in lengthy discussions of bomb shelters and 'black box'-like safes. Also an issue was the number of candidates who wrote at length on the System Development Life Cycle without reference to the given topic.
- (b) Again a common problem was covering a sufficient range of issues. Far too many candidates only focused on the chair, VDU and/or general atmosphere of the room. Many wrote in the most general of terms (eg 'get an ergonomic chair and table') without describing the characteristics of such equipment, far less demonstrating that they understood how such characteristics could help reduce potential harm or danger. Similarly few candidates gave any specific information with regard to recommended seating distances or viewing angles. The '90° rule' was mentioned by surprisingly few. The work patterns of the user were generally ignored but for suggesting short breaks from keying (the actual frequency of such breaks was often not mentioned). Other issues such as: recommended limits on key-stroke rates; training in how to use the equipment correctly; job/task rotation; 'warm-up/-down' patterns of keying; and exercising were ignored by most writers. Some of the better responses demonstrated an understanding of the legal obligations of both employer and employee in OHS matters and suggested that their 'friend' should be informed of such issues. Very few mentioned the issue of mental health and related points such as electronic monitoring, technostress, and unrealistic work deadlines. Poorer responses went into enormous detail describing the need for cold drinks, regular food and 'walks outside'. Some even wrote a major part of their response congratulating their friend on finding employment! Many started by defining 'ergonomics' but few were 'text book' definitions.
- (c) Candidates were confused regarding the terms ethics; laws; crimes; plagiarism; copyright; and morals. Phrases such as 'it's a criminal sin' and 'plagiarism is a crime and if caught you will go to jail' reflect this. Many candidates failed to move past 'its bad and its wrong' or 'you would feel guilty' in their answers. A surprising number lay the blame at the service provider's doorstep, suggesting that the government should ban such sites, but did not examine the possibility that such essay banks might serve legitimate educational purposes or that the use (or abuse) of such materials was a conscious choice made by the student. Few examined the concept of plagiarism (other than to say it was cheating and therefore wrong) in contrast to legitimate research and the need to acknowledge and document sources. Stronger responses investigated the idea that copyright may also be an issue and posed the question of the source of the essays and whether their creators had given permission for their dissemination/use. A number of candidates quoted the Privacy Principles and/or Privacy Act in great depth but without showing how either related to the actual question. Unfortunately a surprising number of candidates focused their entire discussion on the chances of being discovered and the consequences of being 'found out' without actually examining the ethical issues raised by the case study. The marker therefore had little choice but to assume these students viewed such actions as 'ok' so long as one was not caught – ratings were assigned accordingly. Similarly a number of candidates focused their discussion on the issue of possible credit card fraud and the dangers of sending credit card details over the Internet and ignored ethical issues.

Examiner Sample Solutions

Question 10

- (a) Cookie- packet of information sent by an HTTP server to a web browser and sent back by the browser each time it accesses the server. Typically used to authenticate a registered user without asking them to sign in again every time they use the site. Can also be used to personalize a site (present different pages to different users), track a particular persons access to a site. However they do take information without a user 'knowing'.
- (b) Code of Conduct – A set of behavioural guidelines for the members of a (professional) organisation to abide by. (Doctors, lawyers, IT professionals) The code is not legally binding but transgressions are handled by peers and may result in expulsion from the organisation.
- (c) Employee monitoring – computers are very good at counting –e.g. the rate at which a checkout person works, or speed of response for a call centre operator. Many unions have banned this practice as part of fair conditions for their workers. One can understand that it would be rather unsettling to know your performance at work was being monitored and compared with others, perhaps unfavourably and unfairly.

Question 11

- (a) Disaster recovery plans – physical deterrents –electronic locks, fingerprint recognition etc to gain access to sensitive areas, security guards
Software – obviously a regular (automatic) backup schedule is required with plans to keep backups in fireproof safes or off-site.
Up to date virus prevention software.
Hardware – backup power supplies for large companies such as Qantas. Similarly backup computers.
Network providers – backup networks?
- (b) Easily adjustable desks and chairs (gas struts) to allow for correct sitting posture with minimum stress on muscles etc. This will also allow for monitor to be at correct position (generally straight ahead of the person so that neck is in relaxed position). Monitor should be high resolution and lighting should be good to reduce eyestrain. No glare. Outlook that allows refocus of eyes on regular basis.
Most modern keyboards would be ergonomically designed, perhaps with hand rests sloping up from the desk to the keyboard.

Other factors might include piped music ?? and restful colours. Humidity, low noise levels. Probably more importantly would be rest breaks allowing for some form of exercise to occur. This can be done at the desk even. (Stretching hands, arms, feet etc). Job / task rotation.
- (c) I would regard the above scenario as unethical if the source of the material was not presented in a webliography (a new addition to the Oxford Dictionary)
Use of reference material is commonplace in essays and reports, provided it is acknowledged.
Despite paying for the data I would consider it ethical to acknowledge the source as it was not original work.
If the folio was to display your research skills, maybe the purchase of essays is more valid, but the implication is that the work is being presented as substantially your own. It gets more blurry as we start working with 'templates' and wizards which have much of the structure and content built.

Section E

Markers found the common problem with this section was that candidates failed to give sufficient detail in the essay questions. Often one example was all that was offered. Many answers were of such little detail that they could have been done by somebody who had not studied the subject. There has been some conjecture that the bulk of candidates work from Section A to Section E in a linear fashion and by the time they get to Section E they are feeling the strain.

Question 12

As was expected this was done by the bulk of the candidates. Far too many answers were of the type.

“e-commerce is where you can buy stuff on the internet”

Good answers indicated what some of this “stuff” was and mentioned a range of services banking, buying selling, B2B, EDI. They also stated how goods or services were selected, paid for and delivered.

Anecdotally, probably 50% of the students had an understanding of an exclusive license. The other 50% described a site licence or a user licence.

This was done quite well, with many candidates using examples to illustrate the difference. However, there were enough context clues in the question to enable those who new nought to have a stab at it!

Question 13

The bulk of the candidates did Technology v Employment option and, as mentioned before, they were very general with their answers. The better essay results were mostly from those who tackled the Law question with some excellent answers. The next best group were those who answered the virus question

- (a) There were good answers here which outlined and compared the qualities of computer viruses with their medical terms. Poorer answers merely listed and described the different types of code(Trojan Horses, Worms etc.) with no reference to what the question had asked.
- (b) Good answers gave examples relating to copyright, privacy, fraud etc. and mentioned the problems of illegal sites outside Australia. Poorer answers dwelt on hackers and how bad it was for the police to catch them.
- (c) There were some good answers which looked at a broad range of issues relating to technology. Removing tedium, enhancing safety, staying competitive were mentioned. Most candidates could cite examples of where jobs had been lost from and where jobs have been or are being created. Poorer answers dwelt on one side of the argument or the other and, as has been mentioned could possibly have been written without having studied Information Systems at all.

Examiner Sample Solutions**Question 12**

- (a) e-commerce –refers to business being done on the web. i.e. Buying and selling. Goods and services can be advertised, credit card purchases made and goods dispatched.
Note: a number of such companies have crashed in the last few months including a couple of grocery outlets in the USA.

Advantages are that business can be done from anywhere in the world – you don't have to travel to a shop. On the other hand you miss the personal, hands on, tyre-kicking experience.

- (b) An exclusive license confers the right to the licensee, to the exclusion of all other people, access to the particular work created by the copyright owner.
- (c) Batch processing – data is accumulated offline and then presented to the computer say once per day or week, for processing. The data therefore gets progressively out of date until the next update occurs.
Transaction processing- refers to on-line interactive processing of data such as bank accounts or airline reservation systems where it is imperative that data be immediately up to date to avoid double booking etc. e.g. at an ATM. Data files are immediately updated.

Question 13

- (a) Viruses are examples of destructive computer code that can range from playful to malicious. As such they can be a major threat. The medical analogy is fairly obvious with respect to the damage they can do to a system and the way in which they can spread from disk to disk or maybe an *infected* email. Viruses can reproduce themselves. Anti virus software typically inspects potentially contaminated files and removes the virus or stops it from spreading, and is commonplace today.
- (b) New laws have had to be enacted to deal with white-collar computer crime. e.g. the nature of intellectual property – the fact that a program can exist in a source and compiled version – is a compiled program regarded as a literary work and therefore have copyright associated with it?
The Australian Copyright Act does define the above as a literary work. The statement was probably more valid a few years ago than today. A huge amount of work is being put into updating the statutes to take into account the information age.
It does take time for legislation to be drafted and enacted. This time delay is important because legislation is 'interpreted' by courts when a law appears to have been broken. The problem comes when the law is applied to a situation that had not been envisaged (didn't exist) when the law was drafted.
- (c) Technology and unemployment – the fact of life seems to be that for a company to stay competitive and keep its head above water, it must computerise. This may result in job losses or maybe re-training. The positive side includes the fact that computers are very good at doing mundane, repetitive tasks. This should therefore free people from these tasks, allowing them to perform more interesting jobs. In addition they are not necessarily constrained to work at the office but perhaps from home. The negative effects of course include job losses, less social interaction if working at home, long hours in front of a screen for some workers such as call-centre employees.

Largely it is a shift in jobs, but the highest cost component is wages, so any system that reduces the number of people needed is usually taken. There is an overall loss of employment, but also a creation of opportunities for new jobs (Web page designers weren't actually needed until the web was 'invented'). Unfortunately the people displaced from jobs (mundane / low skill) are usually not the ones who can take up the new jobs.

All correspondence should be addressed to:

Tasmanian Secondary Assessment Board

PO Box 147, Sandy Bay 7006

Ph: (03) 6233 6364 Fax: (03) 6224 0175

Email: reception@tassab.tased.edu.au

Internet: <http://www.tassab.tased.edu.au>