



INFORMATION TECHNOLOGY and SYSTEMS

Senior Secondary

Subject Code: ITS315108

External Assessment

2009

Time: Two Hours

On the basis of your performance in this examination, the examiners will provide results on each of the following criteria taken from the syllabus statement:

- Criterion 1** Demonstrate knowledge and understanding of how real world information problems are analysed and solved.
- Criterion 2** Demonstrate knowledge and understanding of the components of an information system, and their inter-relationships.
- Criterion 3** Demonstrate knowledge and understanding of social issues associated with information systems.

Pages: 12
Questions: 16

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CANDIDATE INSTRUCTIONS

Candidates **MUST** ensure that they have addressed **ALL** of the externally assessed criteria on this examination paper.

The paper is divided into **FOUR** sections.

Each section contains **ONE** Case Study.

Candidates must attempt **TWO** sections (ie **TWO** Case Studies).

Candidates must answer **ALL** questions in their chosen sections.

ALL questions in each section are of equal value.

Answer each section in a separate answer booklet.

It is recommended that you spend approximately 60 minutes on each section.

Candidates should take care with the presentation of their answers, which should be comprehensive and to the point. Except where advised otherwise, answers should be composed of complete sentences. Diagrams should be used where appropriate but not to the exclusion of all text. Answers should, in general, be structured in the same order as issues are raised in each question.

All written responses must be in English.

SECTION A

Answer **ALL** questions in this section.

You should spend approximately **60 minutes** on this section.

Use a separate answer booklet for this section.

This section assesses **Criteria 1, 2 and 3**.

Case Study:

Amazon's 'Kindle' is a software and hardware platform for users to obtain and read e-books (electronic books) and other digital media. It comes with 4GB of memory, a 10 inch (25 cm) screen and wireless Internet capabilities, all in a 26cm x 18cm frame, weighing 540g. Users can select and download reading material from more than 275,000 digital titles. New releases and bestsellers are approximately \$10 while classics sell for around \$1.99. Subscriptions to newspapers cost between \$5.99 and \$14.99 per month; magazines between \$1.25 and \$3.49 per month. At present this service is only available in the USA.

Question 1

You have been appointed, as consultant, to examine the feasibility of introducing the 'Kindle' to the Australian market.

- (a) Outline some of the issues obtaining books and magazines for distribution on the 'Kindle'. Discuss briefly the stakeholders you would need to work with to obtain this service?
- (b) Outline some of the issues surrounding the delivery of online books and magazines through the 'Kindle'. Discuss briefly the stakeholders you would need to work with to deliver this service.

Question 2

'Kindle' files are presently stored in the proprietary AZW format, however e-books are more widely published in Microsoft's LIT format, Adobe's PDF format, Palm's PDB format or the generic HTML or TXT formats.

- (a) Discuss some of the issues surrounding the use of proprietary file formats, like Kindle's AZW, in contrast to using generic, standard formats, like Adobe's PDF or W3C's HTML, in light of publishing 'Kindle' files for the Australian market.
- (b) Discuss some of the issues facing e-book publishers and 'Kindle' owners if the decision is made to publish 'Kindle' files in AZW format only.

Section A continues opposite.

Section A (continued)

Question 3

- (a) What technology (hardware, software and communication) would an e-book distributor need to have in place to advertise and sell 'Kindle' products?
- (b) Unlike the Apple iPod, the 'Kindle' has been designed to enable users to organise and manage their content *without* connecting to a computer. Discuss the advantages and disadvantages of this for 'Kindle' owners.

Question 4

Canberra High School is anticipating the availability of 'Kindle', by 2010, and is planning to make use of this technology to supply class sets of text books to its students, in 2011. Discuss the possible ethical, legal and economic issues surrounding this decision. In your answer you may wish to explore areas such as copyright, software piracy, inclusivity, health and safety issues and the associated costs of the 'Kindles'.

SECTION B

Answer **ALL** questions in this section.

You should spend approximately **60 minutes** on this section.

Use a separate answer booklet for this section.

This section assesses **Criteria 1, 2 and 3**.

Case Study:

Ray and Kay Parks are the new managers of 'The Palms Holiday Resort', on Queensland's Sunshine Coast. With almost 200 caravan and camping sites, and 35 luxury villas, this multiple award winning resort caters for all holidaymakers. Some of the facilities offered free to guests include: bathroom amenities, games' rooms, tv lounges, swimming pools, spas, fitness centre, camp kitchens and barbeque facilities.

Question 5

Security of physical access is a high priority for 'The Palms Holiday Resort'. You have been employed, as a consultant, to investigate guest access to the resort and its facilities.

- (a) Outline some of the issues surrounding the use and management of keys and keypad codes, for guests to access the resort and its facilities.
- (b) Outline some of the issues surrounding the use and management of proximity cards and swipe cards, for guests to access the resort and its facilities.

Question 6

You recommend the use of proximity cards to operate the boom gates for entering and exiting the resort. You also recommend the use of swipe cards for the doors to the resort's facilities, such as bathroom blocks, games' rooms and fitness centre. Both types of card are re-programmable.

- (a) Outline possible solutions for issuing and keeping track of these cards.
- (b) Outline possible solutions for ensuring only current guests have access to the resort and its facilities.

Section B continues opposite.

Section B (continued)

Question 7

Ray and Kay Parks want their guests to have Internet access at the resort.

- (a) Outline some of the issues surrounding the provision of Internet access via Internet kiosks, where all hardware is provided.
- (b) What technology (hardware, software and communication) would 'The Palms Holiday Resort' need to provide their guests with Internet access through their own laptops via wireless access points?

Question 8

'The Palms Holiday Resort' has decided to offer its guests Internet access, through an unsecured network, using wireless access points. Discuss the possible ethical, legal and economic issues surrounding this decision. In your answer you may wish to explore areas such as legal liability, duty of care, openness to possible litigation or prosecution due to guests' activities and the associated running costs of the network.

SECTION C

Answer **ALL** questions in this section.

You should spend approximately **60 minutes** on this section.

Use a separate answer booklet for this section.

This section assesses **Criteria 1, 2 and 3**.

Case Study:

The Tasmanian Government is considering a light rail passenger service from Salamanca Place, Hobart, to Granton, called 'Tas Light Rail'. The proposed intermediate stations, for 'Tas Light Rail' are Royal Hobart Hospital, New Town, Moonah, Glenorchy and Claremont. This proposed new service will make use of existing rail infrastructure, lines and carriages, where possible.

Question 9

Non interactive display units will be installed at each station, showing the destination of the next train and the number of minutes to its arrival.

- (a) Outline some of the issues surrounding the link between the display units and the 'Tas Light Rail's published schedule.
- (b) Trains occasionally do not run to schedule. Outline some of the issues surrounding detection of the next train and calculating its arrival time for display.

Question 10

Each station will have money operated (notes and coins) vending machines, to dispense tickets, for 'Tas Light Rail'. Travellers can pay to travel for one to six stations, in a single or return trip. They can purchase a ten or twenty trip ticket, or a budget five day unlimited journey ticket. There are three cost structures linked to the tickets outlined above: Children, Student/Pensioner and Adult.

- (a) What input would these machines need to calculate a ticket? In your answer, nominate a 'button' for each input and illustrate their use by giving instructions for issuing a ticket of your choice.
- (b) On boarding the train, passengers must validate their ticket. Outline some of the issues surrounding validation of tickets.

Section C continues opposite.

Section C (continued)

Question 11

‘Tas Light Rail’ proposes that a digital audio announcement of the next station be made, over the train's public address system, prior to each station.

- (a) Outline some of the issues surrounding the composing and delivery of digital messages, to announce the next station.
- (b) Suggest appropriate technology (hardware, software and/or communication) ‘Tas Light Rail’ would need in each train to make these announcements.

Question 12

‘Tas Light Rail’ has decided to install video surveillance cameras in each carriage for the safety of its passengers and to deter criminal behaviour. Discuss the possible ethical and legal issues surrounding this decision. In your answer you may wish to explore areas such as privacy, ID confirmation, legal liability, and the associated costs.

SECTION D

Answer **ALL** questions in this section.

You should spend approximately **60 minutes** on this section.

Use a separate answer booklet for this section.

This section assesses **Criteria 1, 2 and 3**.

Case Study:

Abebooks is the world's largest online marketplace for books. Bookbuyers love the variety of over 55 million new, used, rare, and out-of-print books offered by more than 12,000 independent booksellers clustered around five global sites, Canada, England, France, Germany and Australia. Abebooks connects those who buy books with those who sell them, taking a commission on all sales.

Question 13

'Karol's Korner' is a successful little book store located in a busy shopping centre in southern Tasmania. Its owner, Carol Reading, runs the entire business together with Anita Sellers, a part time employee, who works three days a week. Carol has employed you to investigate joining Abebooks Australia, in order to increase her potential customer base.

- (a) Outline some of the issues surrounding extending 'Karol's Korner' into an online store.
- (b) Discuss briefly the stakeholders you would need to work with, to bring this about.

Question 14

Online stores need to showcase their products to potential customers as well as keep an inventory of their goods.

- (a) Suggest a possible record structure for 'Karol's Korner' to use for its books database. Your record structure should give possible field names and data types and should be accompanied by an example record, as an illustration.
- (b) Using the record structure, outlined above, suggest possible ways that customers could make online searches for books. Your answer should include an example search, showing the data that would need to be entered into specific fields.

Section D continues opposite.

Section D (continued)

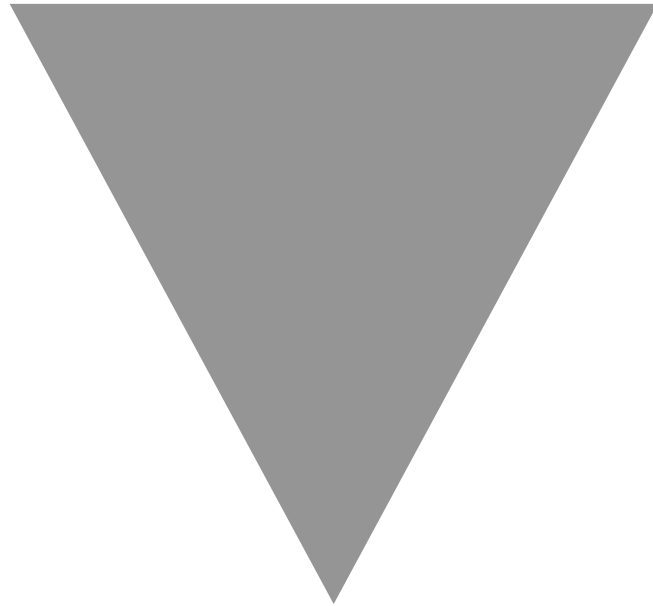
Question 15

Carol has decided to setup a web site for 'Karol's Korner', for marketing and sales.

- (a) Discuss the advantages and disadvantages of setting up and maintaining a web site in house, or outsourcing this to a commercial site.
- (b) What possible technologies (hardware, software and communication) could Abebooks use to allow Carol's customers to track their orders from her shop to their home?

Question 16

Some criticise online shops as they have reduced the numbers of actual employees. Others, however, point out that online businesses actually increase overall employment. Discuss these claims in relation to 'Karol's Korner'. In your answer you may wish to explore areas such as purchasing, advertising, orders and account handling.



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