



INFORMATION TECHNOLOGY and SYSTEMS

Senior Secondary

Subject Code: ITS315108

External Assessment

2008

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:

'Lulu' is an online publishing centre. Similar to 'PhotoBucket', which enables users to upload, store, organise and share digital photos, 'Lulu' also provides publishing tools, enabling the user to format, collate and select binding for their manuscript, in readiness for sale. At no cost to the author, the completed books are stored on 'Lulu's' servers and later printed, bound and distributed, as they are ordered. 'Lulu' takes 20% of each sale, enabling the author to concentrate on the creative process.

Question 1

You have been employed as a consultant to work with 'Lulu', to advise on the process of producing a book in the hands of the customer, from its electronic form.

- (a) What advice would you give to 'Lulu' with regard to where it prints, binds and distributes its clients' books?
- (b) Many publishing houses outsource their printing, binding and distributing to overseas companies as a cost-cutting exercise. What factors need to be considered when deciding whether or not to outsource?

Question 2

Record keeping is integral to the running of any business.

- (a) Identify the data that you would advise 'Lulu' to collect, on a regular basis, in order to produce an income/expenditure monthly statement.
- (b) Describe two ways in which this data could be collected.

Section A continues opposite.

Section A (continued)

Question 3

'Lulu's' directors are keen to capture a major slice of the home publishing market.

- (a) What technology (hardware, software and communication) would clients need to publish their manuscripts, using 'Lulu's' online facilities?
- (b) What technology (hardware, software and communication) would 'Lulu' need to conduct the online sales of its clients' books?

Question 4

A film company wishes to make a blockbuster movie of one of 'Lulu's' published manuscripts. Considering all stakeholders, what are the ethical, legal and economic issues that 'Lulu's' directors should address?

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:

Keeping track of all your information can become a chore if you keep your files in different locations. Perhaps you store some files on a computer, others in folders on a network server, and still others on mobile devices such as portable music players, personal digital assistants (PDAs), or mobile phones. How can you be certain you're working with the most recent versions of your files when you have copies scattered everywhere?

'BConnected' is a communications company developing 'LiveNet', a tool to assist companies and individuals to access digital data, using online servers to synchronise files stored on multiple devices.

Question 5

- (a) Identify the problems that can occur when you use multiple devices to view, edit and organise your information.
- (b) Select two of these problems and identify what 'LiveNet' could do to address them.

Section B continues opposite.

Section B (continued)**Question 6**

Not every file that is held on each device needs to be synchronised to every other device. For example, you may not wish to have your mobile phone **ring tones** on your desktop computer, nor your **diary entries** on your portable music player. For the system to work effectively, each user's preferences, in this regard, must be able to be entered.

- (a) 'LiveNet' has started designing a table to allow users to record their preferences about which data would be synchronised with which device. Copy and extend this table in your answer booklet to include two more devices and three more types of data.

Data (names, categories, tags, etc)

Device	Ringtone	Movie	Photo
Laptop			
Phone			

- (b) Draw up possible user instructions to accompany the user preference table, created in Question 6 (a).

Question 7

BConnected's directors are keen to promote 'LiveNet'.

- (a) What technology (hardware, software and communications) would be suitable for 'LiveNet' users to synchronise their desktop and laptop files, via Internet?
- (b) What technology (hardware, software and communication) would be suitable for 'LiveNet' users to synchronise their mobile digital devices (e.g. PDAs and phones) via Internet?

Question 8

The management of 'BConnected' is concerned about online data access and security issues for the 'LiveNet' system. Considering all stakeholders, what are the implications of the 'LiveNet' system that management need to consider?

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:

Dutch inventors have unveiled a car refuelling robot costing \$A123 000. The robotic arm, that extends from a regular petrol pump, carefully opens the car's fuel filler, unscrews the cap, picks up the fuel nozzle and directs it towards the tank opening.

Question 9

Each car is identified on arrival at the filling station, matching it to a database of fuel cap location, design and fuel type.

- (a) Show a possible design of this section of the robot's database, giving appropriate field names, field types and sample data for three partial records.
- (b) Discuss further database entries, as record fields, that the robotic arm would possibly need concerning the physical layout of different cars and vehicles.

Question 10

Each vehicle needs to be identified when it arrives.

- (a) A camera-type device could assist in identifying each vehicle. What data could the camera be configured to capture that would assist in this identification? Describe another device that would also assist in the identification.
- (b) What are the limitations of the camera and the other device in identifying vehicles?

Section C continues opposite.

Section C (continued)

Question 11

The robotic arm could allow petrol stations to be partially or fully automated.

- (a) What possible technology (hardware, software and communication) would petrol stations using the robotic arm require to control customer access to their petrol pumps?
- (b) What possible technology (hardware, software and communications) would petrol stations require, along with the robotic arm, to be fully automated?

Question 12

The managers of a chain of petrol stations are thinking of installing these robotic arms. Considering all stakeholders, what are the implications that these managers should consider?

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:

Angel Fish has been a keen angler as long as she can remember. Over the years she has designed and made a variety of lures for catching specific fish. On the advice of friends, Angel now wishes to turn her pastime into a business called, 'Fish Allures', that she can manage from home.

Question 13

Angel is keen to run this business from home.

- (a) Identify reasons why Angel might not always have sufficient stock to meet orders.
- (b) What data would Angel need to collect to produce information that will help her meet these orders?

Question 14

One possible solution Angel could try, to advertise her products to potential national and international clients, would be the use of the Internet.

- (a) Identify alternative solution(s) for Angel to advertise her products both nationally and internationally.
- (b) Discuss the advantages and disadvantages of your alternative solution(s) compared with the use of the Internet.

Section D continues opposite.

Section D (continued)

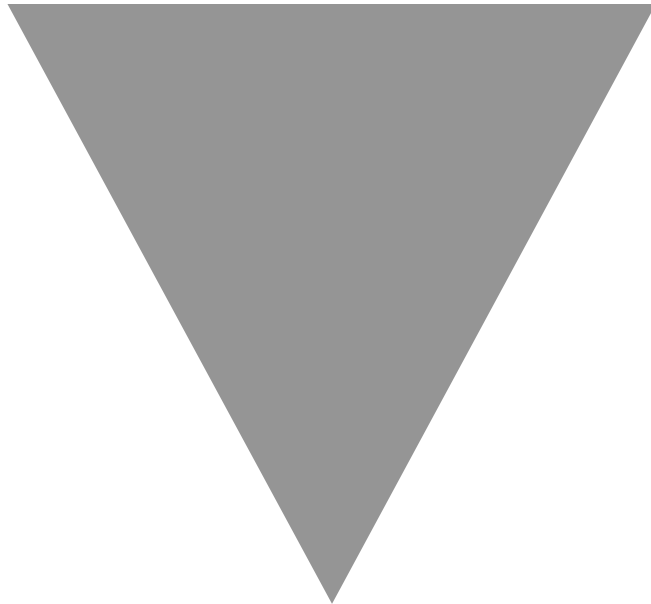
Question 15

Angel has decided to use a web-based shop front for 'Fish Allures' to sell her products.

- (a) What possible technologies (hardware, software and communication) could Angel use to create an interactive website so potential customers can place orders?
- (b) What possible technologies (hardware, software and communication) could Angel use to provide her customers with secure payment options?

Question 16

Online business transactions should only proceed once verifiable identity information has been established between buyer and seller. Considering the views of the customer, how can Angel balance the need to establish identity with personal privacy, to allow successful shopping?



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