MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD
UNIVERSITY OF MALTA, MSIDA

MATRICULATION CERTIFICATE EXAMINATION
INTERMEDIATE LEVEL
SEPTEMBER 2012

SUBJECT:	INFORMATION TECHNOLOGY
DATE:	10th September 2012
TIME:	4.00 p.m. to 7.00 p.m.

Directions to Candidates

Note that marks will be awarded for neatness and accuracy. Workings are considered as part of the answer and must be shown.

Section A: COMPUTING PRINCIPLES

Answer Question A1 and any **FOUR** *other questions from this section.*

Question A1
This question is compulsory.
Giselle works as a secretary at the University of Malta. Her responsibilities include scholarship billing during the academic year for various scholarships. At the moment, billing is done manually, however it is planned that in the future a systems analyst will be assigned the task of designing an automated module dedicated to scholarship billing.

This file-based system makes use of dozens of auxiliary spreadsheets and Word processing documents to generate invoices and reports.

This process is clumsy, time-consuming, and full of errors so Giselle has decided to take up a course in Systems Design and Databases so as to be able to design a *database system* for this purpose.

a) What advantage would a database offer? **[2 marks]**

b) A relational database would be the ideal choice. What is a *relational database*?
[2 marks]

c) What is the job of the systems analyst? **[4 marks]**

d) A feasibility study would be one of the first things carried out by the systems analyst. Suggest what the systems analyst might include in the Feasibility Study?
[4 marks]

e) Once the system is up and running, it would still require maintenance. Identify any THREE characteristics that make a system easy to maintain. **[3 marks]**

Answer ANY FOUR of questions A2, A3, A4, A5, A6 and A7

Question A2
This question is about software

a) A girl's school holds students' data on a computer file (database). The school needs to send an urgent circular to all parents and it does this through the use of *mail-merge*. Briefly describe what mail-merge involves.   **[4 marks]**

b) The Head of School has decided to purchase a new computer system including software. The new software includes an *operating system* and some *generic software*.
   i.   What is an *operating system*?   **[2 marks]**
   ii. Briefly describe TWO functions of an operating system.   **[4 marks]**

Question A3
This question is about Internet related software

a) Describe TWO ways in which staff can put security of data at risk.   **[4 marks]**

b) E-commerce includes the buying and selling of products or information over the internet. It also includes the processes that are established to support a company in such a practice. One such process includes the *trade cycle*.
   i.   As an example of the trade cycle, you have a consumer who goes into the site of a well-known company to find a specific product. Explain the stages involved in the trade cycle with reference to this example.   **[4 marks]**
   ii. Briefly describe Electronic Data Interchange (EDI)?   **[2 marks]**

Question A4
This question is about Information

Validation and *Verification* are two methods used to ensure that data entered in a system is entered accurately and efficiently.
a) Explain the terms in italics.   **[4 marks]**
b) There are different types of validation. Explain any TWO types.   **[4 marks]**
c) What is meant by the term *parity bit*?   **[2 marks]**

Question A5
This question is about *Management Information Systems*

Strategic, *Tactical* and *Technical* decisions form part of the key steps in the *decision-making* process. Describe the words in italics.   **[10 marks]**

Question A6
This question is about *ICT in modern societies*

It is very easy to see how learning environments are evolving in today's world. Having such a young generation already living in the digital world, it is very clear that ICT will affect the complete learning process today and in the future.

Give examples of how ICT is already being used in the education sector.   **[10 marks]**

Question A7
This question is about *Systems Software*

a) *Compilers* and *Interpreters* are two different types of translators. Briefly give TWO differences between them.   **[4 marks]**

b) What do you understand by a *utility program*? Give TWO examples of such a program.   **[3 marks]**

c) Nowadays most software packages offer a GUI. Name THREE characteristics of a GUI.   **[3 marks]**

Please turn the page.

Section B: HUMAN COMMUNICATION & BUSINESS ORGANISATION

Answer question B1 and ONE other question from this section

Question B1

Upward Communication is needed in all types of organisations, whether large or small.

a) What purposes does this type of communication serve? **[5 marks]**

b) Another type of communication is *Downward Communication*. List and describe TWO types of downward communication and TWO types of upward communication.
[4 marks]

c) Last week, Gianni, who works in a small organisation cleared out his desk and left the building, apparently for good.
Everyone in the organisation could not understand why. They did not have an official answer so they began speculating about possible reasons.

Despite its many faults, grapevine communication does have a function in organisations. *"It fills in gaps left behind by conventional and official communication"*.

   i. Define the *Grapevine type of Communication*. **[2 marks]**
   ii. Mention TWO advantages and TWO disadvantages of grapevine communication?
[4 marks]

Answer ONE question from B2 and B3

Question B2

An **organisational chart** represents the structure of an organisation in terms of rank. It also shows *relationships* between staff in the organisation.

   i. Briefly describe the FOUR types of working relationships. **[8 marks]**
   ii. What is *departmentalisation*? **[2 marks]**

Question B3

"In today's world, mobile communication is not a trend, but a phenomenon".

a) What is the benefit of mobile communication in organisations? **[6 marks]**

b) Describe any TWO types of mobile devices that can be used by organisations.
[4 marks]