

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD

UNIVERSITY OF MALTA, MSIDA

MATRICULATION EXAMINATION
INTERMEDIATE LEVEL
SEPTEMBER 2014

SUBJECT:	INFORMATION TECHNOLOGY
DATE:	6th September 2014
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.

Recent physical renovations to a school have enhanced services provided by the library to its students. The addition of five computer workstations allows for a fuller integration of technology into the students' curriculum, including access to the online catalogue, Internet and other online resources. Students can now also access their enhanced school website from where they can keep up to date with what is going on in the school. They can also access their marks online as well as their timetables and exam schedules.

- a) The above technology includes a new database. Name the type of database that would have been selected. **[1 mark]**
- b) Name the type of relationship that would exist between an entity *Book* and an entity *Student*. **[1 mark]**
- c) These types of relationships are usually depicted in the form of a diagram. What is the name of this diagram? **[1 mark]**
- d) Name any FOUR attributes with their equivalent data types you would expect to find in table BOOK. The first one has been done for you. **[3 marks]**

	NAME OF VARIABLE	DATATYPE
1	Publisher	Text
2		
3		
4		

- e) What are *macros* used for in a database? [1 mark]
- f) A good user interface is also important. Explain what is meant by a *good user interface*. [2 marks]
- g) Name TWO advantages that the website can offer to the student. [2 marks]
- h) What would usually be included in the footer of the website? [1 mark]
- i) It is important that an organisation incorporates both *internal* and *external* links in its website. Explain the words in italics. [2 marks]
- j) It should be ensured that the website is *Cross-Browser Compatible*. Define the words in italics. [2 marks]
- k) The above website offers the *Mail-To* facility. What does this command do? [2 marks]

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

Question A2

This question is about Information: The tools required to handle it

- a) Is Random Access Memory (RAM) an example of primary or secondary storage? [1 mark]
- b) Give TWO examples of: [4 marks]
- i. magnetic based storage;
 - ii. optical based storage.
- c) Name the THREE levels of decision making. [3 marks]

Question A3

This question is about the role of Information and Communication Technology (ICT) today.

- a) Define *plagiarism* as opposed to *piracy*. [2 marks]
- b) Mention TWO advantages and ONE disadvantage of e-learning. [3 marks]
- c) Public Portals as common entry points to public services are becoming key elements of the e-government infrastructure.
- i. Give ONE example of such a portal used by the Maltese Government. [1 mark]
 - ii. Name TWO e-services offered by the Government. [2 marks]

Question A4

This question is about Internet Related Software.

While high speed on Internet connections offers significant advantages it also raises new network *security concerns*.

- i. Name and explain TWO types of internet fraud. **[4 marks]**
- ii. Give TWO solutions to the above problem. **[4 marks]**

Question A5

This question is about Systems Development.

a) There are FOUR methods of changing from an old system to the new system. Name them and explain ONE of them. **[5 marks]**

b) *Unit* testing is the first step in the Testing Life Cycle. List the other THREE types of Testing. **[3 marks]**

Question A6

This question is about categories of software.

a) Define *Operating System*. **[1 mark]**

b) Describe the difference between *multitasking* and *multiprogramming* by identifying their major characteristics. **[4 marks]**

c) MacOS is one example of an operating system. List another THREE examples of an operating system. **[3 marks]**

Question A7

This question is about database systems.

a) Neither *validation* nor *verification* can ensure complete accuracy and therefore the *integrity* of the data stored within the database. Explain the words in italics. **[3 marks]**

b) Explain any TWO different types of “keys” involved to link up tables in a database. **[2 marks]**

c) Mention THREE types of information you would find in a data dictionary. **[3 marks]**

Please turn the page.

Section B: HUMAN COMMUNICATION & BUSINESS ORGANISATION

Answer question B1 and One other question from this section

Question B1

- a) XYZ College offers a two year course to students who wish to continue their studies at XYZ University. The College structure consists of one Principal who is in charge of the whole college, one Vice Principal who assists the Principal, four Area Coordinators in charge of four areas of discipline, two Subject Coordinators in each area who have to answer to their respective Area Coordinator and the academic staff who answer to their Subject Coordinator. There is also a Head of Administration who is in charge of all administration as well as the technical staff found in the College. There are about 2000 students who attend the College.
- i. Draw an organisational chart for the above mentioned college. **[6 marks]**
- b) What is *lateral communication*? **[2 marks]**
- c) Give TWO examples of how *visual communication* can be effective in the College. **[2 marks]**

Answer ONE question from B2 and B3

Question B2

- a) A business has THREE main functional areas. Name and describe them. **[6 marks]**
- b) Explain any TWO differences between a *Centralised organisation* and a *Decentralised* one. **[4 marks]**

Question B3

- a) While there are risks involved in online social networking, there are also various advantages. Mention TWO such advantages. **[2 marks]**
- b) A Curriculum Vitae (CV) is an example of written communication. What would such a CV usually include? **[4 marks]**
- c) VoIP is a revolutionary technology that has the potential to completely rework the world's phone systems.
- i. What does *VoIP* stand for? **[1 mark]**
 - ii. Mention THREE advantages of such a technology. **[3 marks]**