MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD

UNIVERSITY OF MALTA, MSIDA

MATRICULATION EXAMINATION
INTERMEDIATE LEVEL
SEPTEMBER 2016

SUBJECT:	INFORMATION TECHNOLOGY
DATE:	31st August 2016
TIME:	9:00 a.m. to 12:05 p.m.

Directions to Candidates

Note that marks will be awarded for neatness and accuracy. Workings are considered 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.

Databases offer several advantages to organisations for data storage and data retrieval. Databases can also be linked to the Internet. A designer has been commissioned to create a database for an Art Gallery. The database would store various information about paintings.

a) Identify *three* fields that would typically be present in such a database.

[3 marks]

b) What is a *primary key*? Identify a primary key for the scenarios mentioned.

[2 marks]

c) Identify a *foreign key* that would typically be present in such a database. Why is a foreign key important in this database?

[2 marks]

d) Give an example of referential integrity in this scenario.

[2 marks]

The owners would like to create a website for the Art Gallery. The designer asked for a sitemap.

a) Draw a site map for this site. The site map should include at least *five* pages.

[2 marks]

b) Mention and explain *two* design principles the designer must keep in mind when creating the interface of this site.

[2 marks]

c) Name and explain a suitable *test plan* for the website.

[3 marks]

d) What are *META Tags*?

[2 marks]

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

QUESTION A2

This question is about *Data and Information*

    a) Describe the difference between *data* and *information*.

[2 marks]

    b) What is a *forum*?

[2 marks]

    c) Why is it important to have accurate and valid data?

[2 marks]

    d) Mention **one** benefit and **one** limitation of *online libraries*.

[2 marks]

QUESTION A3

This question is about *Computer Systems*

    a) Explain the following, with examples of the typical area of use:
        i.   Supercomputers;
       ii.   Desktops;
      iii.   PDA.

[6 marks]

    b) Differentiate and explain *primary* versus *secondary storage*.

[2 marks]

QUESTION A4

This question is about *e-Business*

    a) Define and explain the following:
        i.   ELF radiation;
       ii.   RSI.

[6 marks]

    b) 'ICT can be used to gain a competitive advantage over competitors.' Briefly explain the validity of this statement.

[2 marks]

QUESTION A5

This question is about *ICT in Science and Engineering*

   a) Explain the use of the following terms:
-      i.   CAD;
-     ii.   SPSS.

[4 marks]

   b) Describe how *simulations* can prove beneficial for the aviation companies.

[2 marks]

   c) What is a *Geographic Information System (GIS)?*

[2 marks]

QUESTION A6

This question is about *Computer Related Crime*

   a) Explain the term *Computer Based Crime*. Give **one** example.

[2 marks]

   b) What is *malicious code*?

[2 marks]

   c) Clearly distinguish between *plagiarism* and *piracy*.

[4 marks]

QUESTION A7

This question is about *System Development*

   a) What are *ERDs* used for?

[1 mark]

   b) Describe any **three** different criteria which can be used for system evaluation.

[3 marks]

   c) Explain any **two** differences between *Top-Down* and *Bottom–Up* approach when designing a system.

[4 marks]

Please turn the page.

Section B: HUMAN COMMUNICATION & BUSINESS ORGANISATION

Answer question B1 and One other question from this section

QUESTION B1
This question is compulsory.

a) List any *two* advantages and any *two* disadvantages of verbal communication.

[2 marks]

b) List any *two* technologies used for verbal communication.

[2 marks]

c) List and briefly explain any *two* types of written communication.

[2 marks]

d) Briefly discuss the importance of a *User Support System*.

[2 marks]

e) Briefly define *teleworking*. What modern technologies support teleworking?

[2 marks]

Answer ONE question from B2 and B3

QUESTION B2

Explain what is meant by change in a business organisation. List and discuss any *five* important factors associated with change.

[10 marks]

QUESTION B3

Describe *five* Internet utilities that can be used as human communication tools.

[10 marks]