

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD
UNIVERSITY OF MALTA, MSIDA
MATRICULATION EXAMINATION
INTERMEDIATE LEVEL
MAY 2015

SUBJECT:	INFORMATION TECHNOLOGY
DATE:	19 th May 2015
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.

Geoff has a large DVD movie collection. His friends like to borrow his DVDs, and he needs to keep track of who has which DVD. He maintains a list of friends, identified by unique FIDs (friend identifiers) and a list of DVDs, identified by unique DVDIDs (DVD identifiers). For each friend, Geoff needs to record the name and the telephone number which he can call to get the DVD back. For each DVD, Geoff needs to store the star actor name and title. Geoff would like to keep track of his DVDs by means of a data-driven web application.

- a) Draw the E-R diagram for the scenario above. **[4 marks]**
- b) What types of reports would be useful for such a scenario? **[2 marks]**
- c) Identify the type of relationship between friend and DVD. **[2 marks]**
- d) What is a *sub form*? **[1 mark]**
- e) What are *Hyperlinks*? **[2 marks]**
- f) Identify and describe a test plan you would use for a newly designed website. **[4 marks]**
- g) What is the use of an *HTML Validator*? **[1 mark]**
- h) What is *HTML*? Why is it used? **[2 marks]**

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

Question A2

This question is about *Computer-related crime*

- a) Name and describe *two* categories of illegal practices in the use of computer technology. [4 marks]
- b) Briefly define *computer based fraud*. [2 marks]
- c) Mention the *two* main issues being addressed by *Software Copyright Laws*. [2 marks]

Question A3

This question is about *e-Business*

- a) Define the following:
 - i. Business to Consumer (B2C);
 - ii. e-Marketing. [4 marks]
- b) Mention *two* advantages of e-Business for consumers. [2 marks]
- c) How can a toy store gain competitive advantage through *ICT*? [2 marks]

Question A4

This question is about *Internet related definitions*

- a) Define the following:
 - i. CSS;
 - ii. SMTP;
 - iii. Encryption. [6 marks]
- b) What are *Amalgamated Services*? Give an example to illustrate your answer. [2 marks]

Question A5

This question is about *Databases*

- a) What is the role of the *Database Administrator*? [2 marks]
- b) Define the term *DBMS*. [1 mark]
- c) What is the difference between *Primary Key and Foreign Key*? [2 marks]
- d) Mention *three* issues to be considered when designing a database. [3 marks]

Question A6

This question is about *System Software*

- a) Describe the *three* different types of translators. [6 marks]
- b) What is a *Kernel*? [2 marks]

Question A7

This question is about *Computer Networks*

- a) Give an outline of *two* different *network topologies*. [2 marks]
- b) What is a protocol? Provide an example. [2 marks]
- c) Direction of transmission can be *simplex, half-duplex and full-duplex*. Briefly explain the difference between the three. [3 marks]
- d) What is *Cloud Computing*? [1 mark]

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) What is meant by ‘upward’ and ‘downward’ communication? **[2 marks]**
- b) Mention and explain *four* different methods that an organization can use to communicate with its employees. **[4 marks]**
- c) Explain how teleworking and video-conferencing have affected the business environment. **[4 marks]**

Answer ONE question from B2 and B3

These questions are about *Organisations*

Question B2

- a) Differentiate between centralised and decentralised types of organisations. **[4 marks]**
- b) Identify and explain the main steps in the decision-making process. **[6 marks]**

Question B3

- a) What is the role of the *Chief Security Officer (CSO)* in an organisation? **[4 marks]**
- b) An organisation structure can be based on either function, product, location or project. Give a definition of each. **[4 marks]**
- c) What is an organisational chart? **[2 marks]**