

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD
UNIVERSITY OF MALTA, MSIDA
MATRICULATION EXAMINATION
INTERMEDIATE LEVEL
SEPTEMBER 2017

SUBJECT:	INFORMATION TECHNOLOGY
DATE:	1st September 2017
TIME:	9:00 a.m. to 12:05 p.m.

Directions to Candidates

Workings are considered as part of the answer and must be shown.

SECTION A: COMPUTING PRINCIPLES

Answer Question 1 and any FOUR other questions from this section.

1. This question is compulsory.

Databases are used to store data about customers, sales, purchases, etc. Small local privately owned companies that want to sell or supply goods to different customers will benefit from having a website that connects to a database. The website's transactions can be recorded in a database. Good design principles both for the website and the database are imperative.

- a) Explain the importance of a good intuitive interface when designing the database mentioned in the above scenario. (2)
- b) Describe **TWO** validation techniques one can use when designing this database. (4)
- c) Why are macros useful? Give **ONE** practical example. (3)
- d) Provide **TWO** reasons why resizing images for use on a website is better done in a photo editor rather than using HTML. (4)
- e) Give **ONE** practical example of how a web designer can solve the bandwidth problem when developing a new website. (2)
- f) Outline the importance of legibility when it comes to designing a website. Explain **TWO** main principles a web designer must keep in mind in relation to legibility. (3)

(Total: 18 marks)

Answer any FOUR of questions 2, 3, 4, 5, 6 and 7

2. This question is about Networks and the Internet

- a) List and briefly describe **TWO** types of networks commonly found. (2)
- b) Explain the terms
 - i) FTP;
 - ii) TCP/IP. (2)
- c) Explain any **TWO** differences between
 - i) HTTP;
 - ii) HTTPS. (2)
- d) What modern term is used to define computer and file sharing over the web? (2)

(Total: 8 marks)

3. This question is about e-government

- a) Briefly explain what is meant by e-government. (1)
- b) Give any **TWO** examples for each of the following:
 - i) admin to business request;
 - ii) admin to citizen request. (4)
- c) Define and give **ONE** example of:
 - i) an informational service;
 - ii) a transactional service. (3)

(Total: 8 marks)

4. This question is about Computer Systems

- a) List and describe any **TWO** modern input devices used in a supermarket store. (2)
- b) List and explain any **TWO** differences between RAM and ROM. (2)
- c) Give **ONE** advantage of traditional hard disks and **ONE** advantage of solid state drives. (2)
- d) List and briefly explain any **TWO** modern output devices. (2)

(Total: 8 marks)

5. This question is about the Internet

- a) Explain any **TWO** differences between an
- i) intranet;
 - ii) extranet. (2)

b) Briefly explain the following:

- i) firewalls;
- ii) malware;
- iii) key loggers;
- iv) encryption. (4)

- c) Give any **TWO** examples of web based fraud. (2)

(Total: 8 marks)

6. This question is about Systems Development

- a) Explain the importance of a feasibility study when developing new software systems. List and explain any **THREE** factors that are important for a feasibility study. (5)

- b) What diagrams and notations are useful for system analysis? Briefly explain. (3)

(Total: 8 marks)

7. This question is about Health and Safety in ICT

- a) List and explain any **TWO** problems that can arise from computer usage. (4)

- b) State **TWO** measures should employers provide for employees using computer systems so as to minimise the problems mentioned above in part (a). (2)

- c) Give any **TWO** reasons why computer health and safety issues are becoming a concern in the modern work environment. (2)

(Total: 8 marks)

Please turn the page.

SECTION B: HUMAN COMMUNICATION & BUSINESS ORGANISATION

Answer question 1 and ONE other question from this section.

1. This question is compulsory.

- a) List and explain any **THREE** ways how electronic communication is affecting business organisations. (6)
- b) Give **ONE** advantage and **ONE** disadvantage of mobile telephony. (2)
- c) Give **TWO** valid reasons why a company has to disseminate information to the external world. (2)

(Total: 10 marks)

Answer ONE question from 2 and 3.

- 2. a) An organisation has several important characteristics. Clearly explain the following:
 - i) closed vs open systems;
 - ii) formal and informal systems. (4)
- b) Clearly explain and give **ONE** example of the following:
 - i) authority;
 - ii) delegation;
 - iii) responsibility. (6)

(Total: 10 marks)

- 3. A typical company is composed of several functional areas. Identify any **FIVE** of these areas and clearly explain their function.

(Total: 10 marks)