

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

**SECONDARY EDUCATION CERTIFICATE LEVEL**

**MAY 2017**

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<b>SUBJECT:</b>	<b>Information Technology</b>
<b>PAPER NUMBER:</b>	Controlled – Unit 1
<b>DATE:</b>	25 <sup>th</sup> May 2017
<b>TIME:</b>	10:00 a.m. to 11:35 a.m.

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**THIS PAPER SHOULD BE RETURNED TO THE INVIGILATOR  
AFTER THE EXAMINATION.**

**Name of candidate** \_\_\_\_\_

**I.D. number** \_\_\_\_\_

**School** \_\_\_\_\_

**Class** \_\_\_\_\_

**Notes to Students:**

- Answer **ALL** questions in the space provided.

**Scenario**

A new photocopying service shop is opening in your city and the owner has asked for your assistance in order to set up the new photocopying machines being bought. Mariah, the shop owner, is not very familiar with computers and the related technologies. Your task is to help her better understand the machines being delivered by answering the questions below.

**Question 1**

**K3 (4 marks)**

The new photocopiers being installed are a computing machine. In the space below present the data flow diagram of a computer system. Make sure to include the following components in your diagram:

Input, Output, Secondary Storage, Processing (ALU, CU, MU)

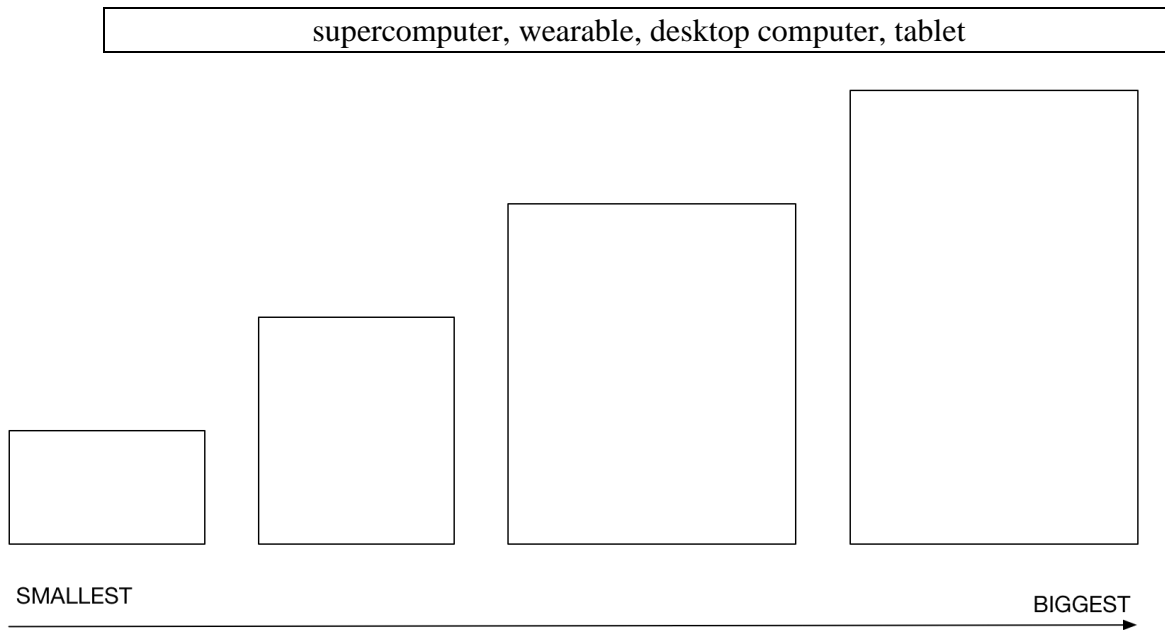


**Question 2**

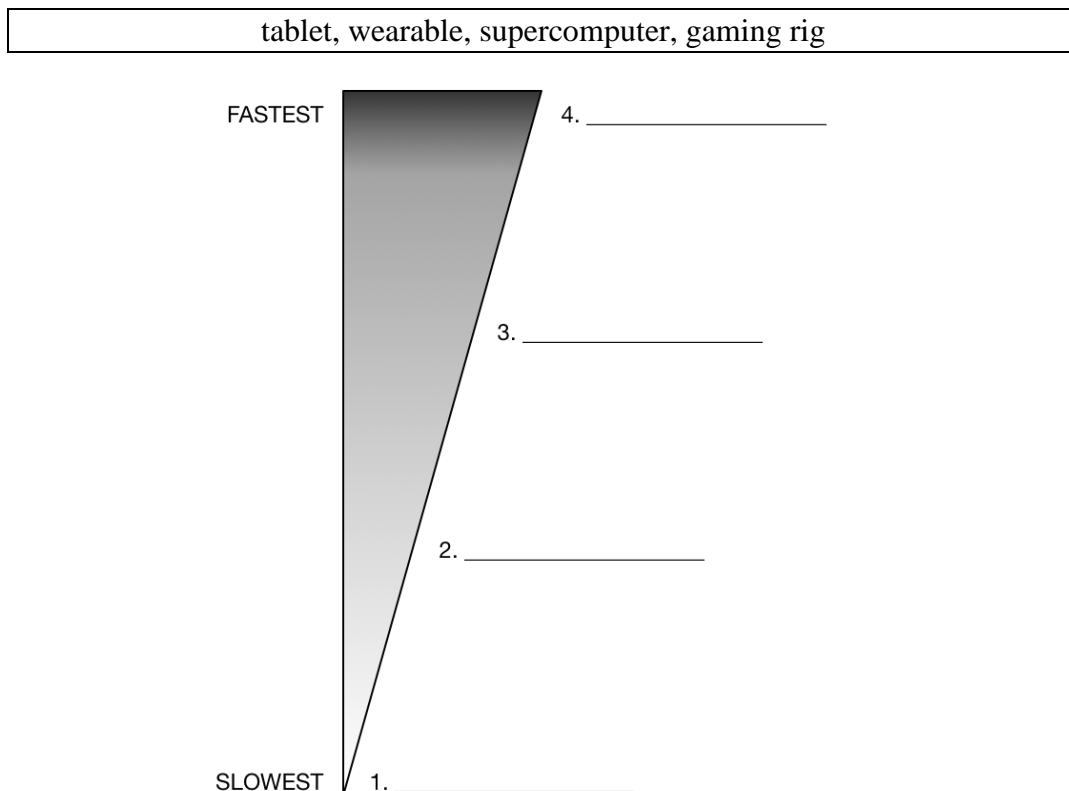
**K1 (4 marks)**

Mariah has discovered that there are indeed several different types of computer systems; but she still cannot grasp what is the main difference between the different computer systems.

a. Fill in the boxes with the computers systems listed below according to their size.



b. Fill in the diagram with the computer systems listed below in order according to their processing speed.



**Question 3**

**K5 (4 marks)**

For her shop, Mariah will need a number of peripherals. Select, from the list below, the appropriate peripheral device for each situation.

keyboard, optical character reader, 3D scanner, printer, monitor, plotter, hard disk, optical disk drive, flash drive, braille keyboard, eye tracking system, puff-suck switch.

- a. She has purchased a 3D printer for her shop, and she would like to offer a service whereby customers can come in with a physical object and be able to replicate it using the 3D printer.

Peripheral device required: \_\_\_\_\_

- b. Mariah wants to offer a service whereby clients can print designs such as those of ships, machines and plans for buildings.

Peripheral device required: \_\_\_\_\_

- c. At her new shop, Mariah would like to offer a service whereby printed documents containing text are converted into digital versions whereby the text is editable.

Peripheral device required: \_\_\_\_\_

- d. Which laser based peripheral device can be used by Mariah at her shop so that clients can bring soft copies of the files required to be printed?

Peripheral device required: \_\_\_\_\_

**Question 4**

**K6 (4 marks)**

Almost all of the machines installed at the shop require network connectivity. Outline the following basic terms related to data communication and network technology:

- a. Peer-to-peer

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- b. Ethernet cable

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c. Bandwidth

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d. Router

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**Question 5**

**K9 (4 marks)**

You have noticed that Mariah has not thought about securing the network at her shop. Outline the role of firewalls in safeguarding computer networks. In your outline, provide Mariah with a description of a firewall and **THREE** roles that the firewall can provide.

Short description of firewalls.

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Role 1

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Role 2

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Role 3

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**Question 6**

**C4 (6 marks)**

You are trying to explain to the shop owner that she should make use of different standard user accounts when setting up the operating system on the computer.

- a. Distinguish between the administrator account and the guest account by highlighting **THREE** differences between the two types of accounts.

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Folders can also be shared using different permissions.

- b. Distinguish between the read and the modify permissions by highlighting **THREE** differences between the two types of folder sharing permissions.

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**Question 7**

**C5 (6 marks)**

Whilst discussing firewalls with Mariah, the issue of network security threats was mentioned. This is especially important for Mariah since she wants to build her business using modern and online technology.

a. Explain to Mariah the following network security threats:

i. Malware

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ii. Botnet

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iii. Tunnelling

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b. Explain the following network protection systems:

i. Disk Freezing

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ii. Restore point

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iii. Sand boxing

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**Question 8**

**C1 (6 marks)**

Mariah needs to purchase a new laptop. She has a budget of €1000 for a fast computer and which is light to carry. She does not need a large storage device and having a touchscreen; although desirable, is not a must. Some of her work will include 3D modelling and hence a good video card is required. She has asked for your opinion on which computer system represents the best price:performance ratio.

	<b>System 1</b>	<b>System 2</b>	<b>System 3</b>	<b>System 4</b>
<b>Model</b>	TravelMate P648-M	Yoga	G Series	Spectre
<b>Processor Type and Speed</b>	Intel Core i7-6500U Quad Core 2.5 GHz (Turbo 3.1 GHz)	Intel Core i7-6500U Quad Core 2.5 GHz (Turbo 3.1 GHz)	Intel Core i7 6700HQ Quad Core 2.6 GHz (Turbo 3.5 GHz)	Intel Core i5-6200U Dual Core 2.3 Ghz
<b>Memory</b>	4 GB	8 GB	8 GB	8 GB
<b>Hard Drive Size and Type</b>	128 GB SSD	256 GB SSD	1 TB HDD 7200 RPM	256 GB SSD
<b>Screen Size</b>	14"	14" Touchscreen	15.6"	13.3" Touchscreen
<b>Max Resolution</b>	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
<b>Graphics</b>	Intel HD Graphics	AMD Radeon R5 with 2 GB dedicated memory	Nvidia GeForce GTX 960M with 2 GB dedicated memory	Intel HD Graphics
<b>Other Features</b>	Card Reader Webcam Wi-Fi Bluetooth	Card Reader Webcam Wi-Fi Bluetooth	Card Reader Webcam Wi-Fi Bluetooth	Card Reader Webcam Wi-Fi Bluetooth



<b>Ports</b>	1x HDMI 1x VGA 3x USB 3.0 1x Network 1x Audio Jack	1x Network 1x HDMI 1x USB 2.0 2x USB 3.0 1x Audio Jack	1x Network 1x HDMI 1x USB 2.0 2x USB 3.0 1x Mini DisplayPort 1x USB 3.0 Type-C 1x Audio Jack	3x USB 3.0 1x HDMI 1x Mini DisplayPort 1x Audio Jack
<b>Weight</b>	1.7 kg	1.73 kg	2.3 kg	1.45 kg
<b>Price</b>	€879.99	€899.99	€999.99	€999.99

a. Which system would you recommend to Mariah?

- System 1
- System 2
- System 3
- System 4

b. Justify your choice by comparing the computer systems according to **THREE** criteria.

i. Criteria 1

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ii. Criteria 2

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*Please turn the page.*

iii. Criteria 3

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