



**L-Università
ta' Malta**

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE
EXAMINATIONS BOARD

**SECONDARY EDUCATION CERTIFICATE LEVEL
2024 SUPPLEMENTARY SESSION**

SUBJECT: **Information Technology**
 PAPER NUMBER: Synoptic – Unit 1
 DATE: 4th November 2024
 TIME: 2:30 p.m. to 4:35 p.m.

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

For examiners' use only:

Question	1	2	3	4	5	6	7	8	Total
Score									
Maximum	6	12	12	8	8	8	8	8	70

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

Scenario

- St Mary’s school computer lab was recently refurbished, giving it a modern look.
- Peter is the school’s computer technician.

Question 1

K-2 (6 marks)

- Peter wants to ensure that the lab meets the necessary health and safety standards.
- Hence he decided to put up some safety signs in the lab.

a. Match each safety sign with their correct meaning by drawing a line between them:



High voltage



No food or drink



Fire exit



ESD

(2)

b. Categorise the following safety signs, by writing 'X' in the category/categories they belong to.

Safety Signs	Categories		
	Human Hazard	Hardware Hazard	Environmental Hazard
High voltage			
No food or drink			
Fire exit			
ESD			

(2)

- c. • Peter wants to place the safety signs mentioned below in the computer lab shown in Figure 1.
 • The server room contains servers that host the school’s data and website.
 • It also contains a large UPS (Uninterrupted Power Supply) designed to keep the servers running for 30 minutes in case of power failure.

Safety sign 1: Fire extinguisher
 Safety sign 2: High voltage

Determine where the **TWO** safety signs mentioned above should be placed within the computer lab. Indicate their placement in Figure 1 by writing down 1 and 2 in the location where each sign should be placed. (2)

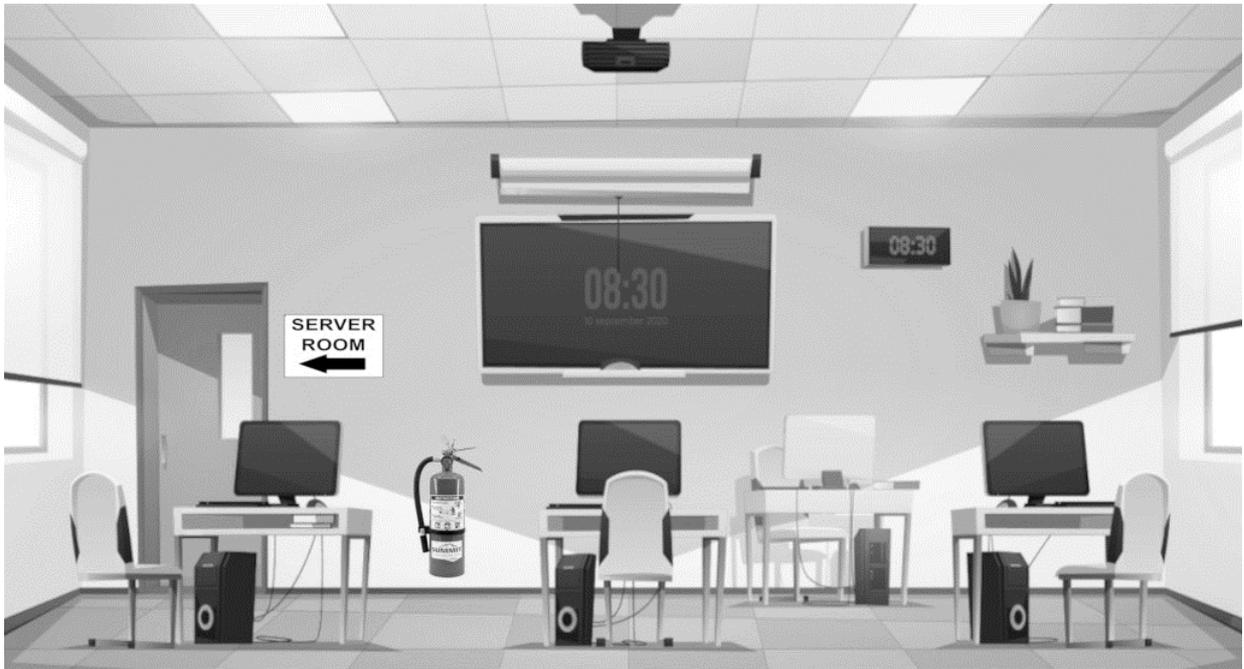


Figure 1: St Mary’s computer lab
 Adapted from: <https://www.shutterstock.com>

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Question 2

C-1 (12 marks)

- As part of his work, Peter is required to replace, install and upgrade internal hardware components.
 - He wants to make sure that the necessary precautions are taken to avoid any possible hazards.
- a. Outline **FOUR** consequences, apart from Electrostatic Discharge (ESD), which can occur if the necessary precautions are not taken when replacing, installing or upgrading hardware components:

Consequence 1: _____
_____ (1)

Consequence 2: _____
_____ (1)

Consequence 3: _____
_____ (1)

Consequence 4: _____
_____ (1)

- b. Determine **FOUR** costs which can be incurred if good practices are not observed during the replacement, installation or upgrade of computer hardware.

Cost 1: _____
_____ (1)

Cost 2: _____
_____ (1)

Cost 3: _____
_____ (1)

Cost 4: _____
_____ (1)

- c. Analyse the cost of implementing **TWO** precautions against the cost of the hazard which would otherwise result.

12

(4)

Question 3

C-2 (12 marks)

- St Mary’s school management team asked Peter to buy new laptops for the school.
- Students will use the laptops to carry out school-related work such as word processing assignments and research.
- The laptops can be used anywhere within the school, including classrooms, computer labs and outdoor areas.
- Peter is considering the laptops listed in Table 1.

Table 1: Laptop Specifications

	Laptop A	Laptop B
Screen Size	15.6"	16"
Memory	16GB DDR4	16GB DDR5
CPU Speed	1.3 GHz (Turbo 4.4GHz)	3.6 GHz (Turbo 4.9 GHz)
Storage	512GB	1TB
Dedicated Graphics Memory	No	12GB
Weight	1.74 kg	2.5 kg

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a. Justify why Laptop A is more appropriate for St Mary’s school compared to Laptop B, in terms of portability and speed:

Portability: _____

_____ (2)

Speed: _____

_____ (2)

- b. i.
- From the next scholastic year, Digital Art will be introduced.
 - The digital art lessons are intended to give students an introduction to the subject. They will learn basic skills such as drawing simple sketches.
 - The Art teacher intends to buy some input and output devices to be used with the new laptops, with the remaining limited money.
 - She asked Peter to buy a couple of entry level graphics tablets.

Justify why Graphics Tablet A should be bought rather than Graphics Tablet B in terms of specifications and cost.

Table 2: Graphics Tablet Specifications

	Graphics Tablet A	Graphics Tablet B
Resolution	2540 lpi	2540 lpi
Active Area	216 x 135 mm	350 x 210 mm
Pressure Sensitivity	2048 levels	4096 levels
Cost	€60	€370

Specifications: _____

_____ (1)

Cost: _____

_____ (1)

- ii. • The Art teacher also asked Peter to buy a printer.
 - She intends to print any necessary pictures including coloured ones.
 - Students will also be allowed to print their work from the schools’ laptops.

Justify why Peter should consider buying Laser Printer A rather than Laser Printer B in terms of use and connectivity.

Table 3: Laser Printer Specifications

	Printer A	Printer B
Colour printing	Colour	Black and White
Functions	Printer / Scanner / Copier / Fax	Printer / Scanner / Copier
Paper type	A4, A3	A4
Connectivity	Wi-Fi, USB, Ethernet	USB, Ethernet

Use: _____

_____ (1)

Connectivity: _____

_____ (1)

- c. • The Art teacher needs to keep copies of the students’ digital artworks.
 - She is not sure whether to use an external Hard Disk or an external Solid-State Disk (SSD).

Justify why a Solid-State Disk (SSD) is more appropriate than a Hard Disk to backup digital work with respect to access speed and longevity of the device.

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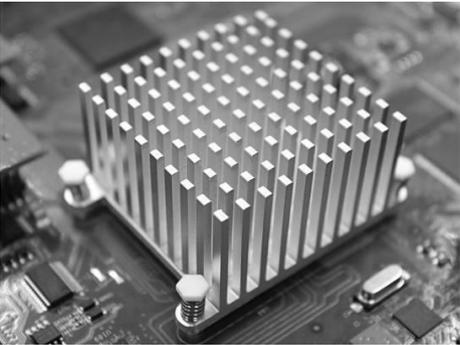
(4)

Question 4

K-4 (8 marks)

Peter, the school technician, was requested to upgrade the desktop computer located in the Art room.

a. Label the following **TWO** internal hardware components.

	Image	Internal Hardware Component Name
i.	<div style="text-align: center;">  <p><i>(Source: https://www.industrybuying.com)</i></p> </div>	<hr/> <p style="text-align: right;">(1)</p>
ii.	<div style="text-align: center;">  <p><i>(Source: https://www.istockphoto.com)</i></p> </div>	<hr/> <p style="text-align: right;">(1)</p>

b. List **FOUR** reasons why a computer upgrade might be required, apart from increasing hardware reliability.

Reason 1: _____ (0.5)

Reason 2: _____ (0.5)

Reason 3: _____ (0.5)

Reason 4: _____ (0.5)

c. Outline **FOUR** implications of upgrading a computer system, apart from software compatibility problems.

Implication 1: _____

_____ (1)

Implication 2: _____

_____ (1)

Implication 3: _____

_____ (1)

Implication 4: _____

_____ (1)

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Question 5

K-5 (8 marks)

Peter needs to access the BIOS to obtain some information about the desktop computer.

a. Present the **TWO** steps required to enter the BIOS/UEFI.

Step 1: _____ (1)

Step 2: _____ (1)

This question continues on next page.

b. Mention **FOUR** basic features of the BIOS/UEFI, apart from CMOS.

Feature 1: _____ (0.5)

Feature 2: _____ (0.5)

Feature 3: _____ (0.5)

Feature 4: _____ (0.5)

c. Outline the content of the **FOUR** basic features you mentioned in Question 5b.

Outline of Feature 1: _____

_____ (1)

Outline of Feature 2: _____

_____ (1)

Outline of Feature 3: _____

_____ (1)

Outline of Feature 4: _____

_____ (1)

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Question 6

K-8 (8 marks)

Following the upgrade of the desktop computer, Peter compiled the RIU (Replacement/Installation/Upgrade) documentation.

a. Name **FOUR** sections forming part of an RIU documentation, apart from 'Signatories and Date'.

Section 1: _____ (0.5)

Section 2: _____ (0.5)

Section 3: _____ (0.5)

Section 4: _____ (0.5)

b. Outline the content of each of the **FOUR** sections of an RIU documentation you named in Question 6a.

Content of section 1: _____

_____ (0.5)

Content of section 2: _____

_____ (0.5)

Content of section 3: _____

_____ (0.5)

Content of section 4: _____

_____ (0.5)

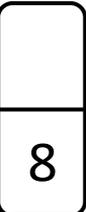
c. Describe **TWO** reasons why it is important to document the RIU of a hardware component.

Reason 1: _____

_____ (2)

Reason 2: _____

_____ (2)



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Question 7

K-9 (8 marks)

During the upgrade, Peter installed some new hardware components which he needed to register.

a. Define the term 'product registration'.

_____ (2)

b. Identify **TWO** methods which can be used to register new products.

by post	via USB	online	via video conference
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Method 1: _____ (1)

Method 2: _____ (1)

c. List **FOUR** advantages of product registration, apart from software updates.

Advantage 1: _____ (1)

Advantage 2: _____ (1)

Advantage 3: _____ (1)

Advantage 4: _____ (1)

8

Question 8

K-10 (8 marks)

From time to time, Peter is required to carry out maintenance on the school's computers.

a. State **TWO** reasons why computer maintenance is important.

Reason 1: _____
_____ (1)

Reason 2: _____
_____ (1)

b. List **TWO** types of computer maintenance, apart from adaptive maintenance.

Type of maintenance 1: _____ (1)

Type of maintenance 2: _____ (1)

c. Define the **TWO** types of computer maintenance you listed in Question 8b.

Type of maintenance 1: _____

_____ (2)

Type of maintenance 2: _____

_____ (2)

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