



L-Università  
ta' Malta

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE  
EXAMINATIONS BOARD

**SECONDARY EDUCATION CERTIFICATE LEVEL  
2023 SUPPLEMENTARY SESSION**

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SUBJECT: **Information Technology**  
PAPER NUMBER: Synoptic – Unit 1  
DATE: 1<sup>st</sup> November 2023  
TIME: 2:30 p.m. to 4:35 p.m.

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**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	8	8	12	8	8	8	12	70



b. List **ONE** risk that might arise from each hazard identified in Question 1a.

Risk from hazard (i): \_\_\_\_\_ (1)

Risk from hazard (ii): \_\_\_\_\_ (1)

c. Outline **ONE** possible precaution which might be taken to minimise each of the risks listed in Question 1b.

Precaution for risk (i): \_\_\_\_\_ (1)

Precaution for risk (ii): \_\_\_\_\_ (1)

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**Question 2**

**K-3 (8 marks)**

'PC Tech' sells different computer systems of various forms and sizes.

a. List **FOUR** different types of computer systems, apart from desktop computer, tablet and gaming rig.

Computer System 1: \_\_\_\_\_ (0.5)

Computer System 2: \_\_\_\_\_ (0.5)

Computer System 3: \_\_\_\_\_ (0.5)

Computer System 4: \_\_\_\_\_ (0.5)

- b. • Mark is a regular client of 'PC Tech'.
- He is fond of gaming.
- He would like to buy some peripheral devices to improve his gaming experience.

Select **ONE** appropriate input device and **ONE** appropriate output device for this scenario.

Braille Keyboard	Printer	VR Headset	Graphics Tablet
Optical Mark Reader (OMR)	Joystick	Scanner	Plotter

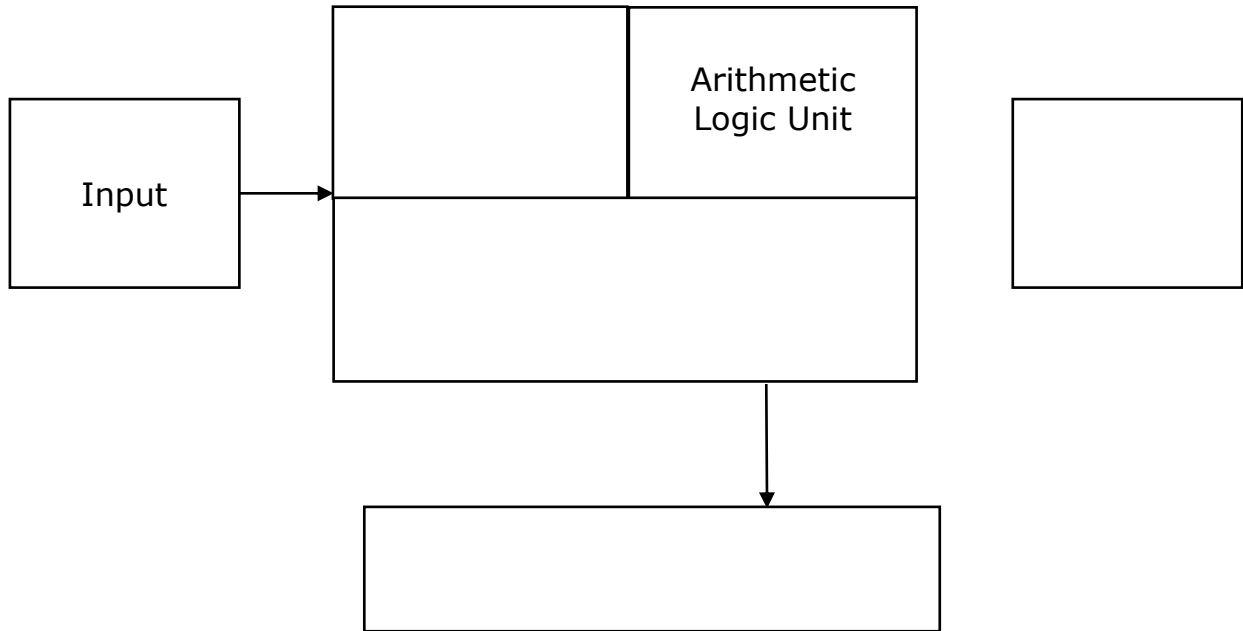
Input Device: \_\_\_\_\_ (1)

Output Device: \_\_\_\_\_ (1)

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c. Mark does not know much about how the data and instructions flow inside a computer. Joe intends to explain this through a data flow diagram.

Complete the following data flow block diagram by filling in the empty boxes using appropriate words, and drawing the missing arrows.



(4) 8

**Question 3**

**K-4 (8 marks)**

Joe suggested that Mark should consider upgrading the internal hardware components of his computer system.

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



	<b>Image</b>	<b>Internal Hardware Component Name</b>
i.	 <p>(Source: <a href="https://www.shutterstock.com">https://www.shutterstock.com</a>)</p>	<hr/> <p style="text-align: right;">(1)</p>

	Image	Internal Hardware Component Name
ii.	 <p>(Source: <a href="https://www.shutterstock.com">https://www.shutterstock.com</a>)</p>	<p>_____</p> <p>(1)</p>

b. List **FOUR** reasons why a computer upgrade may be required.

- Reason 1: \_\_\_\_\_ (0.5)
- Reason 2: \_\_\_\_\_ (0.5)
- Reason 3: \_\_\_\_\_ (0.5)
- Reason 4: \_\_\_\_\_ (0.5)

c. Outline **FOUR** implications related to upgrading a computer system, apart from migration of data.

- Implication 1: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ (1)
- Implication 2: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ (1)
- Implication 3: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ (1)
- Implication 4: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ (1)

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**Question 4****C-3 (12 marks)**

- After speaking to Joe, Mark decided to upgrade his desktop computer.
- Mark's computer currently has 8GB (2 x 4GB) RAM and an on-board graphics card.
- He wants to install more RAM and add a dedicated graphics card to be able to run more high-processing games.
- Table 1 below lists the specifications of Mark's mainboard.

Table 1: Mainboard Specifications

<b>Specifications</b>	
<b>Model name</b>	PRO Z690-P DDR4
<b>Form factor</b>	ATX
<b>Processor socket</b>	LGA1700
<b>Chipset</b>	Intel Z690 Chipset
<b>Graphics interface</b>	2x PCIe x16 slots
<b>Memory type</b>	DDR4
<b>DIMM slots</b>	4 slots <i>Note: The computer already has 8GB (2 x 4GB) RAM installed, which Mark would like to keep</i>
<b>Memory speed</b>	Supports 2133/2666/3200MHz
<b>Maximum memory</b>	128GB
<b>Expansion slots</b>	3x PCIe 3.0 x1 slots 1x M.2 slot
<b>SATA type connection</b>	4x SATA-III 6.0Gb/s
<b>USB ports</b>	1x USB 3.2 Gen 2x2 20Gbps (1 Type-C) 8x USB 3.2 Gen 1 5Gbps (8 Type-A) 6x USB 2.0
<b>LAN</b>	Realtek RTL8125BG 2.5G LAN
<b>Audio</b>	8-Channel (7.1) HD Audio with Audio Boost

- a. Choose the RAM and graphics card which are compatible with Mark’s computer mainboard and which also meet his gaming requirements, by ticking ✓ the box next to the chosen model.

<b>RAM</b>	
i. Kingston FURY Beast 128GB (4 x 32GB) DDR4-3200 CL16 Memory	<input type="checkbox"/>
ii. Crucial CT2K16G3ERSDD4186D 32GB (2 x 16GB) DDR3-1866 CL13 Memory	<input type="checkbox"/>
iii. Corsair Vengeance RGB Pro 32GB (2 x 16GB) DDR4-3200 CL16 Memory	<input type="checkbox"/>

<b>Graphics Card</b>	
i. EVGA 01G-P1-N948-LR GeForce 9400GT 1GB PCI Video Card	<input type="checkbox"/>
ii. MSI Radeon RX 6600 MECH 2X 8G 8GB GDDR6 PCIe x16 Video Card	<input type="checkbox"/>
iii. Asus GTX750-PHOC-1GD5 GeForce GTX750 1GB GDDR5 PCIe x16 Video Card	<input type="checkbox"/>

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- b. Justify the RAM and graphics card chosen in Question 4a, based on compatibility with the mainboard and Mark’s requirements.

Justification of the chosen RAM:

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**Question 5**

**K-6 (8 marks)**

- The technicians of 'PC Tech' upgraded Mark's desktop computer.
- Unfortunately, some issues caused the upgrade to be unsuccessful.

a. List **TWO** issues which can cause an RIU (Replacement/Installation/Upgrade) to be unsuccessful.

Issue 1: \_\_\_\_\_ (1)

Issue 2: \_\_\_\_\_ (1)

b. State **ONE** way which can be used to confirm each issue listed in Question 5a.

Way to confirm issue 1: \_\_\_\_\_  
\_\_\_\_\_ (1)

Way to confirm issue 2: \_\_\_\_\_  
\_\_\_\_\_ (1)

c. Outline **ONE** possible solution to solve each of the **TWO** issues listed in Question 5a.

Possible solution for issue 1: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (2)

Possible solution for issue 2: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (2)

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**Question 6**

**K-7 (8 marks)**

- Technicians working at 'PC Tech' carry out tests when replacing, upgrading, or installing hardware components.
- This way, they make sure that the computer is fully functional before giving it back to the client.

a. List **TWO** ways which can be used to test an RIU (Replacement/Installation/Upgrade).

Way of testing 1: \_\_\_\_\_ (1)

Way of testing 2: \_\_\_\_\_ (1)

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b. Describe the **TWO** ways that can be used to test an RIU (Replacement/Installation/Upgrade) listed in Question 6a.

Description of way of testing 1: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

Description of way of testing 2: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

c. Outline **TWO** examples for each way of testing an RIU (Replacement/Installation/Upgrade) listed in Question 6a.

Way of testing 1

Example 1: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

Example 2: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

Way of testing 2

Example 1: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

Example 2: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

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**Question 7**

**K-8 (8 marks)**

- Following the upgrade, the necessary tests were carried out on Mark’s computer.
- The computer was given back to Mark along with an RIU (Replacement/Installation/Upgrade) documentation.

a. Name the **FOUR** sections which form part of an RIU documentation, apart from ‘Proposed Solution’.

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 named in Question 7a.

Content of section 1: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (0.5)

Content of section 2: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (0.5)

Content of section 3: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (0.5)

Content of section 4: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (0.5)

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iii. Explain the approach required to carry out this computer maintenance.

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b. Scenario 2: Mary is a web designer. She wants to make sure that she does not lose any of her works.

i. Identify the appropriate type of computer maintenance for this scenario.

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ii. Justify why you chose this type of computer maintenance.

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iii. Explain the approach required to carry out this computer maintenance.

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