



L-Università  
ta' Malta

MATSEC  
Examinations Board



# Marking Scheme

SEC Information Technology Unit 1

**Main Session 2024**  
**10<sup>th</sup> May 2022**

Marking schemes published by the MATSEC Examination Board are not intended to be standalone documents. They are an essential resource for markers who are subsequently monitored through a verification process to ensure consistent and accurate application of the marking scheme.

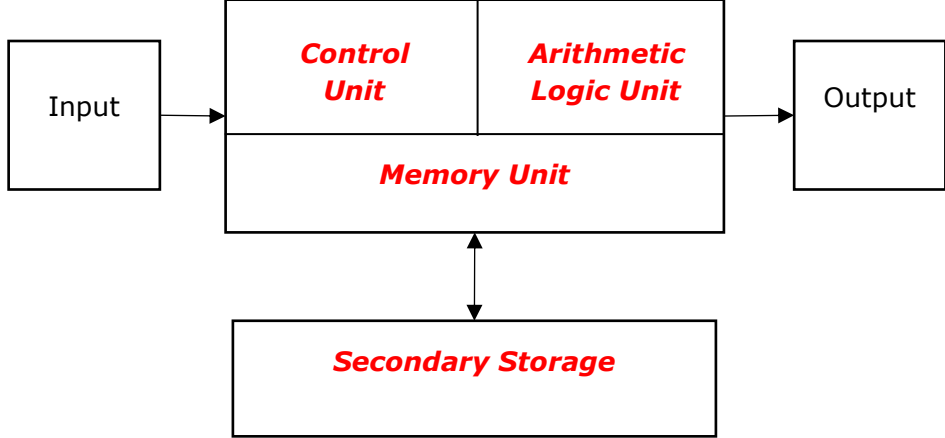
In the case of marking schemes that include model solutions or answers, it should be noted that these are not intended to be exhaustive. Variations and alternatives may also be acceptable. Examiners must consider all answers on their merits, and will have consulted with the MATSEC Examinations Board when in doubt.

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Criteria Reference	The candidate should be able to:	Question Number	Maximum marks that can be achieved	Allocation of marks	Example of Expected Answer
<b>K-1</b>			<b>4</b>		
	MQF 1: Identify hazards in an IT environment.	1a	1	Award 0.5 marks for each correctly identified hazard.	Students are expected to identify the hazards represented in the images provided: i. Trailing cables ii. Lifting heavy objects
	MQF 2: List risks that might arise from hazards in an IT environment.	1b	1	Award 0.5 marks for each correct risk listed.	Students are expected to list <b>ONE</b> risk which might arise from each hazard mentioned in Question 1a. The following are possible answers: <i>Risk from Hazard 1:</i> Tripping <i>Risk from Hazard 2:</i> Human injuries  Other valid answers are also to be accepted.
	MQF 3: Outline precautions to minimize potential risks.	1c	2	Award 1 mark for each correct precaution outlined.	Students are expected to outline <b>ONE</b> possible precaution which might be taken to minimise each risk listed in Question 1b. Possible answers include: <i>Precaution for Risk 1:</i> No trailing cables should be left lying around, instead these should be placed in cable guards. <i>Precaution for Risk 2:</i> Good ergonomics (or appropriate lifting techniques) should be used when lifting heavy objects so that the knees, and not the back are bent when lifting objects.  Other valid answers are also to be accepted.

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			<b>4</b>		
<b>K-3</b>	MQF 1: List different types of computer systems.	2a	1	Award 0.25 marks for each correct computer system listed.	<p>Students are expected to list <b>FOUR</b> different types of computer systems except for <i>laptop</i> and <i>desktop computer</i>. The following are possible answers:</p> <ul style="list-style-type: none"> <li>• Server</li> <li>• Tablet</li> <li>• E-book reader</li> <li>• Gaming rig</li> <li>• Smartphone</li> <li>• Embedded device</li> <li>• Wearable</li> </ul> <p>Other valid answers are also to be accepted.</p>
<b>K-3</b>	MQF 2: Select appropriate input and output devices for a given situation.	2b	1	Award 0.5 marks for each correct input and output device selected.	<p>Students are expected to select an appropriate input and output device for a blind employee. The following are the only possible answers:</p> <p><i>Input Device:</i> Braille keyboard</p> <p><i>Output Device:</i> Headphones</p>

Criteria Reference	The candidate should be able to:	Question Number	Maximum marks that can be achieved	Allocation of marks	Example of Expected Answer
	MQF 3: Present a data flow block diagram.	2c	2	Award 0.5 marks for each correct answer.	 <p>Note: If the terms Control Unit and Arithmetic Logic Unit are swapped they should still be considered as correct.</p> <p>Other terms with equivalent meaning can be used and hence accepted.</p>

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Criteria Reference	The candidate should be able to:	Question Number	Maximum marks that can be achieved	Allocation of marks	Example of Expected Answer
			6		
C-2	MQF 1: Justify the appropriate computer system for a given scenario.	3a	2	Award 1 mark for each correct justification.	<p>Students are expected to justify why Laptop B was chosen instead of Laptop A in terms of <i>speed</i> and <i>cost</i>. Possible justifications include:</p> <ul style="list-style-type: none"> <li>i. <i>Speed</i>: Laptop B has faster processing speeds than Laptop A making it faster when it comes to programming new applications.</li> <li>ii. <i>Cost</i>: Even though Laptop B is faster, the overall cost for Laptop B is less than that of Laptop A make it more cost efficient.</li> </ul> <p>Other valid answers are also to be accepted.</p>
	MQF 2: Justify the appropriate input and output devices for a given scenario.	3b	2	Award 0.5 marks for each correct justification.	<p>Question 3b (i)</p> <p>Students are expected to justify why Graphics Tablet B was chosen instead of Graphics Tablet A in terms of <i>specifications</i> and <i>cost</i>. Possible justifications include:</p> <ul style="list-style-type: none"> <li>i. <i>Specifications</i>: Graphics Tablet B allows for more precise and good quality designs since it has better resolution and more pressure sensitivity compared to Graphics Tablet A.</li> <li>ii. <i>Cost</i>: Even though the cost of Graphics Tablet B is higher than that of Graphics Tablet A, the cost is reasonable given its specification as well as it is better to invest in Graphics Tablet B given that this will be used by professional graphics designers.</li> </ul>

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Criteria Reference	The candidate should be able to:	Question Number	Maximum marks that can be achieved	Allocation of marks	Example of Expected Answer
					<p>Question 3b (ii)</p> <p>Students are expected to justify why Printer B was bought instead of Printer A in terms of <i>connectivity</i> and <i>after-sales service</i>. Possible justifications include:</p> <ul style="list-style-type: none"> <li>i. <i>Connectivity</i>: Since the graphics designers will be using a laptop, Printer B is better since they can connect to it wirelessly through Wi-Fi, unlike Printer A which can only be used through a USB connection.</li> <li>ii. <i>After-sales service</i>: Printer B comes with a 2-year warranty, making it better than Printer A which has only 1-year warranty. This way the company has more coverage in case of any issues which might arise with the printer.</li> </ul> <p>Other valid answers are also to be accepted.</p>
	MQF 3: Justify the appropriate storage requirements for a given scenario.	3c	2	Award 1 mark for each appropriate justification.	<p>Students are expected to justify why external Solid-State Drives (SSD) are more appropriate than DVDs for data backup in terms of <i>capacity</i> and <i>longevity</i>. Possible justifications include:</p> <ul style="list-style-type: none"> <li>i. <i>Capacity</i>: External SSDs can store at least 120 GB whereas DVDs can store a maximum of 17 GB (dual-layer double-sided). So SSDs are more ideal for data backups since they can store larger amounts of data compared to DVDs.</li> </ul>

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					<p>ii. <i>Longevity</i>: An external SSD has a longevity between 5 and 10 years, whereas DVDs have a longevity of about 2 to 5 years. Hence SSDs are better for data backup as they have a longer longevity and thus store data for a longer time.</p> <p>Other valid answers are also to be accepted.</p>
<b>K-4</b>			<b>4</b>		
	MQF 1: Label different internal hardware components.	4a	1	Award 0.25 marks for each correct labelling.	<p>Students are expected to label the <b>FOUR</b> internal components represented in the given images:</p> <ol style="list-style-type: none"> <li>i. Sound card</li> <li>ii. CPU</li> <li>iii. Heat sink</li> <li>iv. Power Supply Unit (PSU)</li> </ol>
	MQF 2: List the reasons for which a computer upgrade may be required.	4b	1	Award 0.25 marks for each correct reason listed.	<p>Students are expected to list <b>FOUR</b> reasons indicating why a computer upgrade might be required. Possible reasons include:</p> <ul style="list-style-type: none"> <li>• user requirements not met by existing hardware/software</li> <li>• increase storage capacity</li> <li>• increase processing speed</li> <li>• increase hardware reliability (intermittent faults)</li> <li>• cater for minimum software requirements.</li> </ul> <p>Other valid answers are also to be accepted.</p>

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Criteria Reference	The candidate should be able to:	Question Number	Maximum marks that can be achieved	Allocation of marks	Example of Expected Answer
	MQF 3: Outline the implications of upgrading a computer.	4c	2	Award 1 mark for each correct implication outlined.	<p>Students are expected to outline <b>TWO</b> implications related to computer upgrades. Possible implications include:</p> <ul style="list-style-type: none"> <li>• <b>User training/re-training</b> might be needed so that users would know how to use the newly installed hardware device or software.</li> <li>• <b>Hardware compatibility problems</b> might occur as hardware which worked on an operating system might not work on another.</li> <li>• <b>Software compatibility problems</b> might occur when installing a new operating system/hardware, since software which used to run on the previous specifications or settings might no longer run.</li> <li>• <b>Decommissioning of hardware</b> would be necessary when faulty or unwanted computer components need to be disposed.</li> <li>• <b>Migration of data</b> might be necessary so that data from the old storage device is moved to the new one to ensure that all the files are copied to any new storage device.</li> </ul> <p>Other valid answers are also to be accepted.</p>
			<b>4</b>		
<b>K-6</b>	MQF 1: List issues which can cause an RIU to be unsuccessful.	5a	1	Award 0.5 marks for each correct issue listed.	<p>Students are expected to list <b>TWO</b> issues which might cause an installation to be unsuccessful. Possible issues include:</p> <ul style="list-style-type: none"> <li>• loose or wrongly inserted connections</li> <li>• internally broken cables</li> <li>• dead-on-arrival (DOA) components</li> </ul> <p>Other valid answers are also to be accepted.</p>

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Criteria Reference	The candidate should be able to:	Question Number	Maximum marks that can be achieved	Allocation of marks	Example of Expected Answer
	MQF 2: State ways to confirm issues which can cause an RIU to be unsuccessful.	5b	1	Award 0.5 marks for each correct way stated.	<p>Students are expected to state <b>ONE</b> way to confirm each issue listed in Question 5a. Possible answers include:</p> <p><b>Loose or wrongly inserted connections</b></p> <ul style="list-style-type: none"> <li>• check for loose connections <b>OR</b></li> <li>• check that connections are in the correct port</li> </ul> <p><b>Internally broken cables</b></p> <ul style="list-style-type: none"> <li>• test suspected cables on a working computer system <b>OR</b></li> <li>• test suspected cables with a cable tester</li> </ul> <p><b>Dead-on-arrival (DOA) components</b></p> <ul style="list-style-type: none"> <li>• test suspected components on a working computer system <b>OR</b></li> <li>• check for bent pins</li> </ul> <p>Other valid answers are also to be accepted as long as these are linked with the specific issues listed in Question 5a.</p>
	MQF 3: Outline a solution to each cause of unsuccessful RIU.	5c	2	Award 1 mark for each correct solution outlined.	<p>Students are expected to outline <b>ONE</b> possible solution for each issue listed in Question 5a. Possible solutions include:</p> <p><b>Loose or wrongly inserted connections</b></p> <ul style="list-style-type: none"> <li>• Ensure that loose cable connections are secured in their place. <b>OR</b></li> <li>• Ensure that cables are connected in their appropriate port. <b>OR</b></li> <li>• Install/Place component in its appropriate slot.</li> </ul> <p><b>Internally broken cables</b></p> <ul style="list-style-type: none"> <li>• Replace the damaged cable with a working one.</li> </ul>

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Criteria Reference	The candidate should be able to:	Question Number	Maximum marks that can be achieved	Allocation of marks	Example of Expected Answer
					<p><b>Dead-on-arrival (DOA) components</b></p> <ul style="list-style-type: none"> <li>Replace the faulty (DOA) component with new working component.</li> </ul> <p>Other valid answers are also to be accepted as long as these are linked with the specific issues listed in Question 5a.</p>
<b>K-8</b>			<b>4</b>		
	MQF 1: Name the sections of an RIU documentation.	6a	1	Award 0.5 marks for each correct section named.	<p>Students are expected to name <b>TWO</b> sections which form part of an RIU documentation, except for <i>Reason for the RIU</i> and <i>Solution Proposed</i>. The following are possible answers:</p> <ul style="list-style-type: none"> <li>actual implementation</li> <li>testing</li> <li>signatories and date</li> </ul>
	MQF 2: Outline the content of the various sections of an RIU documentation.	6b	1	Award 0.5 marks for each correct outline.	<p>Students are expected to outline the content of the <b>TWO</b> sections of an RIU documentation they mentioned in Question 6a. Possible outlines include:</p> <p><i>Actual implementation:</i> This section includes details about the removed and/or installed components, installed software and drivers, and the implemented solution.</p> <p><i>Testing:</i> This section includes a list of the tests carried out on the computer systems to ensure that it is working properly.</p> <p><i>Signatories and date:</i> This section includes the signature of the technician, along with the date when the documentation was signed.</p> <p>Other valid answers are also to be accepted.</p>

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Criteria Reference	The candidate should be able to:	Question Number	Maximum marks that can be achieved	Allocation of marks	Example of Expected Answer
	MQF 3: Describe the importance of documenting an RIU.	6c	2	Award 1 mark for each correct description.	<p>Students are expected to describe <b>TWO</b> reasons why documentation is important. Possible answers include:</p> <ul style="list-style-type: none"> <li>• Documentation allows to keep a record of the work done on a computer system. This allows persons to know which components have been installed or removed, since the specifications and serial numbers of these components are also included. A record of any installed drivers/software is also kept.</li> <li>• Documentation is also important with regards to warranties of installed components since it includes details about the warranty period and the type of service to be provided while covered by the warranty.</li> <li>• The documentation contains a record of all the tests carried out on the computer system and their respective results. This way the technician/user would know whether the installed hardware and computer system are functional or not.</li> <li>• The documentation is also important as it can be a point of reference when troubleshooting a similar problem on another computer system, as it shows how the problem was solved. Hence similar problems would be solved in a shorter period of time.</li> </ul> <p>Other valid answers are also to be accepted.</p>

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K-9			4		
	MQF 1: Define product registration.	7a	1	Award 0.5 marks for each part of the definition.	<p>Students are expected to define <i>product registration</i>. The following is a possible definition:</p> <p>Part 1: Product registration refers to <b>informing the manufacturer of any new product which is installed</b>.</p> <p>Part 2: It also <b>provides the manufacturer with any required personal details</b>.</p> <p>Other valid answers are also to be accepted.</p>
	MQF 2: Identify the methods of registering products.	7b	1	Award 0.5 marks for each correct method identified.	<p>Students are expected to identify the <b>TWO</b> methods used for the registration of products. The following are the only possible answers:</p> <ul style="list-style-type: none"> <li>• Online</li> <li>• By Post</li> </ul>

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Criteria Reference	The candidate should be able to:	Question Number	Maximum marks that can be achieved	Allocation of marks	Example of Expected Answer
	MQF 3: List the advantages of registering products.	7c	2	Award 0.5 marks for each correct advantage listed.	<p>Students are expected to list <b>FOUR</b> advantages of product registration. Possible advantages include:</p> <ul style="list-style-type: none"> <li>• Users are informed about any available <u>hardware updates</u>.</li> <li>• Users are informed about any available <u>software updates</u>.</li> <li>• <u>Technical assistance</u> is easily provided to users.</li> <li>• Product registration is a <u>proof of purchase</u> in itself.</li> <li>• A <u>service level agreement</u> between the manufacturer and the user is established.</li> <li>• Users can benefit from <u>promotional offers</u> intended for those who have their product registered.</li> </ul> <p>Other valid answers are also to be accepted.</p> <p><i>If students mention the underlined phrases, full marks should be awarded.</i></p>

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Criteria Reference	The candidate should be able to:	Question Number	Maximum marks that can be achieved	Allocation of marks	Example of Expected Answer
<b>K-10</b>			<b>4</b>		
	MQF 1: State reasons why computer maintenance is important.	8a	1	Award 0.5 marks for each correct reason stated.	<p>Students are expected to state <b>TWO</b> reasons why computer maintenance is important. Possible answers include:</p> <ul style="list-style-type: none"> <li>To keep the computer in a good state of repair.</li> <li>To keep the computer system working according to the changing user needs.</li> <li>To reduce the chances of costly repairs.</li> </ul> <p>Other valid answers are also to be accepted.</p>
	MQF 2: List the different types of computer maintenance.	8b	1	Award 0.5 marks for each correct type of computer maintenance.	<p>Students are expected to list <b>TWO</b> types of computer maintenance, other than <i>corrective</i> and <i>perfective</i>. Possible answers include:</p> <ul style="list-style-type: none"> <li>Preventative</li> <li>Adaptive</li> </ul>
	MQF 3: Define the various types of computer maintenance.	8c	2	Award 1 mark for each correct definition.	<p>Students are expected to define the <b>TWO</b> types of computer maintenance they listed in Question 8b. Possible definitions include:</p> <p><i>Preventative maintenance</i> refers to maintenance which is performed on a computer system to reduce the likelihood of possible failures in the future.</p> <p><i>Adaptive maintenance</i> refers to any changes which must be done on a computer system to cater for other changes which took place and which might affect the system.</p> <p>Other valid answers are also to be accepted.</p>

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Criteria Reference	The candidate should be able to:	Question Number	Maximum marks that can be achieved	Allocation of marks	Example of Expected Answer
			6		
C-5	MQF 1: Identify the appropriate computer maintenance for given scenarios.	9a-b i.	2	Award 1 mark for each correct computer maintenance identified.	<p>Students are expected to identify the type of computer maintenance that should be used for each of the <b>TWO</b> situations presented. The answers should be:</p> <p><b>Situation 1:</b> Preventative</p> <p><b>Situation 2:</b> Corrective</p>
	MQF 2: Justify the chosen computer maintenance for given scenarios.	9a-b ii.	2	Award 1 mark for each correct justification.	<p>Students are expected to justify the type of computer maintenance identified in Question 9a-b i. for each situation. Possible justifications include:</p> <p><b>Situation 1:</b> Preventative maintenance is best used in this scenario since it tries to prevent data loss from occurring since if data is lost it is more difficult to recover the data back, if possible at all.</p> <p><b>Situation 2:</b> Corrective maintenance is best used in this scenario since without the primary hard disk drive the laptop wouldn't work.</p> <p>Other valid answers are also to be accepted.</p>

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Criteria Reference	The candidate should be able to:	Question Number	Maximum marks that can be achieved	Allocation of marks	Example of Expected Answer
	MQF 3: Explain the necessary approach to carry out the computer maintenance for given scenarios.	9a-b iii.	2	Award 1 mark for each correct approach explained.	<p>Students are expected to explain <b>ONE</b> approach to carry out the computer maintenance necessary for each situation. Possible approaches include:</p> <p><b>Situation 1:</b> A copy of data should be backed-up on a separate secondary storage device on a regular basis. In this way, if data is lost, it can be easily replaced by copying the backed-up data to the location where the lost data was being stored.</p> <p><b>Situation 2:</b> The computer system is to be opened so that the faulty hard disk drive is removed. A new working hard disk drive is installed instead of the faulty one. Software, such as the operating system, needs to be installed as well.</p> <p>Other valid answers are also to be accepted.</p>