



L-Università
ta' Malta

MATSEC
Examinations Board



Marking Scheme

SEC Information Technology Unit 2

Main Session 2023

10th May 2022

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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.

Marking Scheme (Main Session 2023): SEC Information Technology Unit 2

Criteria Reference	The candidate should be able to:	Question Number	Maximum marks that can be achieved	Allocation of marks	Example of Expected Answer
K-1			4		
	MQF 1: List the different types of media.	1a	1	Award 0.5 marks for each correct type of media listed.	<p>Students are expected to list TWO different types of media. The following are possible answers:</p> <ul style="list-style-type: none"> • Text • Animation <p>Other valid answers, except for audio, images, video and ABS/PLA filament, are also to be accepted.</p>
	MQF 2: Relate the different types of media with the human senses.	1b	1	Award 0.5 marks for each correctly related type of media with the human senses.	<p>Students are expected to relate each of the TWO types of media listed in Question 1a with one of the human senses. Possible answers include:</p> <p><i>Human sense related to text: Sight</i> <i>Human sense related to animation: Sight</i></p> <p>Other valid answers are also to be accepted.</p>
MQF 3: Identify the hardware required for specific media.	1c	2	Award 0.5 marks for each correctly identified hardware device.	<p>Students are expected to identify TWO hardware devices for each of the TWO types of media listed in Question 1a. Possible answers include:</p> <p><i>Hardware required for text: Keyboard OR monitor OR printer OR scanner</i></p> <p><i>Hardware required for animation: Mouse OR monitor OR graphics tablet OR scanner OR 3D scanner</i></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
K-2			4		
	MQF 1: State the main characteristics of image formats.	2a	1	Award 0.25 marks for each correct image format characteristic stated.	<p>Students are expected to state FOUR main characteristics of image formats. Characteristics can be listed in any order. The following are possible answers:</p> <ul style="list-style-type: none"> • Compression • Colour depth • Compatibility • Vector/Raster <p>Other valid answers, except for image size and resolution, are also to be accepted.</p>
	MQF 2: Identify the characteristics of an image format.	2b	1	Award 0.5 marks for each correct image characteristic identified.	<p>Students are expected to identify the TWO main characteristics, image size and resolution, for the given image. The answers are:</p> <p><i>Image size:</i> 800 x 600 pixels OR 282.2 x 211.7 mm</p> <p><i>Resolution:</i> 72 x 72 ppi (N.B: Do not accept 800 x 600 as a valid answer.)</p> <p>Note: If units are not given, answers should still be considered as correct.</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 characteristics of an image format.	2c	2	Award 1 mark for each correct image characteristic described.	<p>Students are expected to describe 'image size' and 'resolution' as characteristics of PNG images. The following are possible answers:</p> <p><i>Image size:</i> Image size refers to the width and height of the image, typically measured in pixels or millimetres. Image files differ in size as this depends on how big or small the image is.</p> <p><i>Resolution:</i> Resolution refers to how many pixels are displayed per inch of an image. The larger the number of pixels, the better the resolution and hence the quality of the image.</p> <p>Other valid answers are also to be accepted.</p>
			4		
K-4	MQF 1: Name different audio file characteristics.	3a	1	Award 0.5 marks for each correct audio file characteristic named.	<p>Students are expected to name TWO characteristics of audio formats.</p> <p>Possible answers include:</p> <ul style="list-style-type: none"> • Bitrate • Compression <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: Relate between different types of audio files and their characteristics.	3b	1	Award 0.25 marks for each appropriate compression type.	<p>Students are expected to related the FOUR given audio files with their correct characteristics. The answers are:</p> <table border="1"> <thead> <tr> <th>Audio File Types</th> <th>Characteristics</th> </tr> </thead> <tbody> <tr> <td>FLAC</td> <td>Lossless</td> </tr> <tr> <td>WAV</td> <td>Uncompressed/Lossless</td> </tr> <tr> <td>MP3</td> <td>Lossy</td> </tr> <tr> <td>LPCM</td> <td>Uncompressed/Lossless</td> </tr> </tbody> </table>	Audio File Types	Characteristics	FLAC	Lossless	WAV	Uncompressed/Lossless	MP3	Lossy	LPCM	Uncompressed/Lossless
Audio File Types	Characteristics														
FLAC	Lossless														
WAV	Uncompressed/Lossless														
MP3	Lossy														
LPCM	Uncompressed/Lossless														
	MQF 3: Describe the different audio file characteristics.	3c	2	Award 1 mark for each correct audio file characteristic described.	<p>Students are expected to describe the TWO audio file characteristics named in Question 3a. The following are possible descriptions:</p> <p><i>Compression:</i> Compression refers to the reduction of the overall file size. There are various types of compression mechanisms: lossless compression where files retain the same quality and lossy compression where the quality of the audio file is reduced.</p> <p><i>Bitrate:</i> Bitrate is the amount of data transferred into audio, over a period of time. It is generally measured in kilobits per second (kbps). A higher bitrate implicates better audio quality.</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
K-5			4		
	MQF 1: Name different video file characteristics.	4a	1	Award 0.5 marks for each correct video file characteristic named.	<p>Students are expected to name TWO characteristics of video files. The following are possible answers:</p> <ul style="list-style-type: none"> • Compression • Bitrate • Aspect ratio • Frame dimensions <p>Other valid answers, except for duration (length) and frame rate, are also to be accepted.</p>
	MQF 2: Identify the characteristics of a given video file type.	4b	1	Award 0.5 marks for each correct video file characteristic identified.	<p>Students are expected to identify the TWO characteristics, frame rate and duration (length), for the given video file. The answers are:</p> <p><i>Frame rate:</i> 60.05 frames/second <i>Duration (Length):</i> 00:00:17 OR 17 seconds</p> <p>Note: If units are not given, answers should still be considered as correct.</p>
MQF 3: Describe the different video file characteristics.	4c	2	Award 1 mark for each appropriate description.	<p>Students are expected to describe TWO characteristics of video files. The following are possible answers:</p> <p><i>Frame rate:</i> A video is made up of multiple still images called frames. The frame rate is the number of such frames displayed per second. Frame rate is generally measured in frames per second.</p>	

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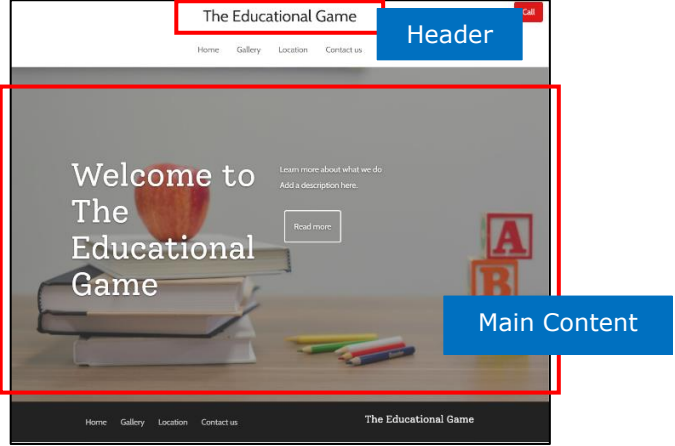
Criteria Reference	The candidate should be able to:	Question Number	Maximum marks that can be achieved	Allocation of marks	Example of Expected Answer
					<p><i>Duration (Length):</i> Duration refers to how long a video is. Hence it is a measure of time from the beginning to the end of a video.</p> <p>Other valid answers are also to be accepted.</p>
			6		
C-3	MQF 1: Explain the limitations of a given audio and video file for a given scenario.	5a	2	Award 1 mark for each correct limitation explained.	<p>Students are expected to explain ONE limitation of .wav files and ONE limitation for .avi files with respect to the provided scenario. The following are possible answers:</p> <p><i>Explanation of .wav limitation:</i> .wav files usually have a bitrate of around 1400Kbps. Such bitrate is rather large for a sound file which is to be uploaded online on Facebook since it takes long to upload as well as it will consume more bandwidth.</p> <p><i>Explanation of .avi limitation:</i> While .avi files can be uploaded on Facebook, these are not recommended. This is so since they are usually large in terms of file size, making them inappropriate for uploading and streaming online.</p> <p>N.B. Even if the same limitation is explained, students should still be awarded marks.</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 2: Justify an appropriate audio and video file for a given scenario.	5b	2	Award 1 mark for each appropriate justification.	<p>Students are expected to justify why .mp3 audio files and .mpeg4 video files are more appropriate with respect to the provided scenario. The following are possible answers:</p> <p><i>Justification of .mp3:</i> the bitrate of an .mp3 file type can go up to 320Kbps. This is much smaller compared to that of .wav files. Hence, file upload will be faster and it will not consume as much bandwidth as a .wav file. Still, even though .mp3 files have a smaller bitrate, their overall sound quality is still good for Facebook online content.</p> <p><i>Justification of .mpeg4:</i> .mpeg4 file types are web-friendly formats since they are small in size, and hence ideal to upload videos on Facebook. Compared to .avi, .mpeg4 files still offer good quality images.</p> <p>N.B. Even if the same limitation is explained, students should still be awarded marks.</p> <p>Other valid answers are also to be accepted.</p>
	MQF 3: Justify an appropriate container for a given scenario.	5c	2	Award 1 mark for each appropriate justification.	<p>Students are expected to justify why .mp4 video containers are more appropriate than Matroska (.mkv) video containers for the given scenario, based on <i>file size</i> and <i>compatibility</i>. Following is a possible justification:</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
					<p><i>Justification based on file size:</i> .mp4 containers produce files which are relatively small in size, compared to .mkv containers. Hence .mp4 files make it easier to upload and stream good quality content on Facebook.</p> <p><i>Justification based on compatibility:</i> While both .mp4 and .mkv are supported by Facebook, it better to use .mp4 files as it is one of the file formats specifically supported by Facebook.</p> <p>Other valid answers are also to be accepted.</p>
K-7	MQF 1: List the basic elements of a website.	6a	4	Award 0.5 marks for each correct element listed.	<p>Students are expected to list TWO basic elements of a website apart from navigation menu and footer. The following are possible answers:</p> <ul style="list-style-type: none"> • Header • Main content* <p><i>* With reference to Main Content, images, videos, forms, paragraphs, lists, tables, etc. are not to be considered as valid answers, since these are part of the same element.</i></p>
			1		

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: Identify the basic elements of a given website.	6b	1	Award 0.5 marks for each correct element, listed in Question 6a, identified.	<p>Students are expected to identify the TWO basic elements of a website they listed in Question 6a.</p> 
	MQF 3: Outline the purpose of the basic elements of a website.	6c	2	Award 1 mark for each correctly outlined purpose.	<p>Students are expected to outline the purpose of the TWO basic elements of a website they listed in Question 6a. The following are possible answers:</p> <p><i>Header:</i> The header is the top-most part of the webpage. It typically contains information such as the name of the company and its logo.</p> <p><i>Main content:</i> The main content is the main part of a website containing information for the users in different forms, such as paragraphs, images and videos.</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
C-4			6		
	MQF 1: Select appropriate elements for a given scenario.	7a	2	Award 1 mark for each appropriate element selected.	<p>Students are expected to select the appropriate navigation menu and footer for the website. The answers are:</p> <ul style="list-style-type: none"> • Navigation Menu 1 • Footer 1
	MQF 2: Justify the appropriate elements for a given scenario.	7b	2	Award 1 mark for each correct justification.	<p>Students are expected to justify the TWO elements selected in Question 7a. The following are possible answers:</p> <p><i>Justification for Navigation Menu:</i> Navigation Menu 1 is more appropriate for the website since it provides the user with more hyperlinks to the various sections of the website than Navigation Menu 2. Hence it makes it easier to navigate from one webpage to another to obtain the necessary information.</p> <p><i>Justification of Footer:</i> Footer 1 is more appropriate than Footer 2 since it provides links to various social media platforms. This is important since the website should have features which allow visitors to contact the creators of the game through social media.</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: Argue whether the website should be static or dynamic for a given scenario.	7c	2	Award 2 marks for an appropriate argumentation stating that the website should be static.	<p>Students are expected to provide adequate arguments in favour of a static website. The following is a possible answer:</p> <p>For this scenario, a static website is better than a dynamic website. This is because the website should provide different users, including learners, educators and parents, with the same information about the educational game. Given that the same content should be displayed, personalisation which is achieved through a dynamic website, is not necessary.</p> <p>Other valid answers are also to be accepted.</p>
			4		
K-9	MQF 1: Define HTML and its use.	8a	1	<p>Award 0.5 marks for a correct definition.</p> <p>Award 0.5 marks for a correct use.</p>	<p>Students are expected to define HTML and its use. The following is a possible answer:</p> <p><i>Definition:</i> HTML (Hypertext Markup Language) is a standard markup language.</p> <p><i>Use:</i> It is used to construct the structure and define the content of web pages.</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 2: List HTML tags.	8b	1	Award 0.25 marks for each correct HTML tag listed.	<p>Students are expected to list TWO HTML basic tags and TWO HTML 5 tags.</p> <p>The following are possible answers for HTML basic tags:</p> <ul style="list-style-type: none"> • <html> • <title> • <body> • <h>/<h1> • <head> • <link> • <p> • <a> <p>The following are possible answers for HTML 5 tags:</p> <ul style="list-style-type: none"> • <article> • <aside> • <dialog> • <figure> • <section> • <footer> • <header> • <main> • <nav> <p>N.B.: If the angle brackets (<>) are not included, marks should still be awarded.</p> <p>Other valid answers are also to be accepted.</p>
	MQF 3: Relate attributes to the respective HTML tags.	8c	2	Award 0.5 marks for each correctly related attribute to its respective HTML tag.	<p>Students are expected to relate the FOUR given attributes to the respective statement stating the use of the attribute in relation to their respective HTML tag. The answers are:</p> <ol style="list-style-type: none"> i. id ii. alt iii. href iv. source (src)

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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
K-10			4		
	MQF 1: Define CSS and its use.	9a	1	Award 0.5 marks for each part of the definition.	<p>Students are expected to define CSS and its use. The following is a possible answer:</p> <p>(i) CSS (Cascading Style Sheets) is a language used in conjunction with HTML to separate the design of a webpage from its content. (ii) This allows for better control over the layout and presentation of the HTML.</p> <p>Other valid answers are also to be accepted.</p>
	MQF 2: Distinguish between different types of CSS.	9b	1	Award 1 mark for appropriately distinguishing between internal and inline CSS.	<p>Students are expected to distinguish between internal and inline CSS. The following is a possible answer:</p> <p>When using inline CSS, styling is only applied to a specific element on the webpage and not to other similar elements within the same page. On the other hand, internal CSS sets styling rules for a particular HTML element, example <code><p></code>, which styles are applied to all similar elements found within that webpage.</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: Outline CSS selectors and declarations.	9c	2	Award 0.5 marks for each CSS selector and declaration correctly outlined.	<p>Students are expected to outline the FOUR given CSS selectors and declarations. The following are possible answers:</p> <ul style="list-style-type: none"> i. The paragraph (element) selector indicates that any paragraph element, created using HTML, needs to be styled according to the declarations contained within the curly brackets. ii. The background-color declaration is used to set a blue background colour behind the paragraph. iii. The color declaration sets the colour of the text forming the paragraph to yellow. iv. The font-family declaration specifies that the font Verdana should be used for the paragraphs. <p>N.B.: For Question 9c (ii) to (iv) a general outline of the declarations should not be accepted. Marks should only be awarded if the outline provided by the student refers to the value of the declaration as per given code snippet.</p> <p>Other valid answers are also to be accepted.</p>