



L-Università  
ta' Malta

MATSEC  
Examinations Board



## Marking Scheme

SEC Information Technology Unit 2

Main Session 2020

21<sup>st</sup> May 2019

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.

Question 1	K1	Describe different multimedia systems	4 marks	
Students are to pick <b>FOUR</b> out of the six systems mentioned below			Mark	Total
<p>Student is expected to provide a valid description of holograms. A typical answer might be as follows:</p> <p>The display of a fully three-dimensional subject formed by light beams which is seen without the aid of special glasses.</p>			1 mark for each correct description	4
<p>Student is expected to provide a valid description of information kiosks. A typical answer might be as follows:</p> <p>A computer terminal featuring specialised hardware and software designed within a public exhibit that provides access to information.</p>				
<p>Student is expected to provide a valid description of CAD. A typical answer might be as follows:</p> <p>CAD or Computer Aided Design is the use of computer software to create and edit technical drawings and documentation. These designs can be created in both 2D and 3D.</p>				
<p>Student is expected to provide a valid description of websites. A typical answer might be as follows:</p> <p>A set of related web pages accessible via a network.</p>				
<p>Student is expected to provide a valid description of social media. A typical answer might be as follows:</p> <p>Social media are websites or applications that focus on empowering users to share content with their audience.</p>				

	<p>Student is expected to provide a valid description of virtual reality. A typical answer might be as follows:</p> <p>The virtual reality is a computer-generated simulation of a world in which the user can interact usually using special equipment such as a helmet and gloves.</p>		
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Question 2	K2	List the format of different multimedia components				4 marks	
						Mark	Total
a)		<b>Multimedia component</b>	<b>Format 1</b>	<b>Format 2</b>	<b>Format 3</b>	Audio: 0.25 per correct file format	0.75
		Audio	wav	flac	vob	Image: 0.25 per correct file format	0.75
		Image	jpeg	tiff	rif	Video: 0.25 per correct file format	0.75
		Video	mov	mpeg	mkv	Animation: 0.25 per correct file format	0.75
		Animation	swf	flc	fli		
b)	<p>Students are to list <b>FOUR</b> file formats for the text component, such as:</p> <ul style="list-style-type: none"> <li>- doc</li> <li>- docx</li> <li>- txt</li> <li>- text</li> <li>- rtf</li> <li>- asc</li> <li>- sub</li> </ul> <p><i>Any other file formats that take into consideration the required criteria can also be accepted.</i></p>					0.25 per correct example	1

Question 3	K3	Relate between different image file types with their qualities	4 marks											
			Mark	Total										
<table border="1"> <thead> <tr> <th>Statements</th> <th>T/F</th> </tr> </thead> <tbody> <tr> <td>a) TIFF is a vector file format.</td> <td>F</td> </tr> <tr> <td>b) An example of an uncompressed file format is BMP.</td> <td>T</td> </tr> <tr> <td>c) PDF is a lossless file format.</td> <td>T</td> </tr> <tr> <td>d) BMP can have a 24-bit colour depth.</td> <td>T</td> </tr> </tbody> </table>			Statements	T/F	a) TIFF is a vector file format.	F	b) An example of an uncompressed file format is BMP.	T	c) PDF is a lossless file format.	T	d) BMP can have a 24-bit colour depth.	T	1 mark each for each correct answer	4
Statements	T/F													
a) TIFF is a vector file format.	F													
b) An example of an uncompressed file format is BMP.	T													
c) PDF is a lossless file format.	T													
d) BMP can have a 24-bit colour depth.	T													

Question 4	K6	Relate between different types of video files and their characteristics	4 marks	
			Mark	Total
a)	<p>Students should list <b>FOUR</b> lossy video file formats, such as:</p> <ul style="list-style-type: none"> <li>- avi</li> <li>- wmv</li> <li>- mp4</li> <li>- mkv</li> <li>- h.264</li> <li>- mpeg</li> <li>- mov</li> </ul> <p><i>Any other video file formats that take into consideration the required criteria can also be accepted.</i></p>		0.5 for each correct format	2
b)	AVI		0.5	0.5
c)	H.264		0.5	0.5
d)	WMV		0.5	0.5
e)	AVI*		0.5	0.5

Question 5	K7	Define audio related terminology	4 marks	
			Mark	Total
a)		Amplification	0.25	0.25
b)		<p>Student is expected to provide a valid definition of Tempo. A typical example follows:</p> <p>This is the speed at which audio should be played.</p>	0.75	0.75
c)		<p>Student is expected to provide a valid definition of Threshold. A typical example follows:</p> <p>The threshold marks the highest loudness that the signal has to be before compression is applied.</p>	0.75	0.75
d)		Reverb OR Echo	0.25	0.25
e)		Cross fade	0.25	0.25
f)		<p>Student is expected to provide a valid definition of Delay. A typical example follows:</p> <p>An audio effect which records an input signal to an audio storage medium, and then plays it back after a period of time.</p>	0.75	0.75
g)		Treble	0.25	0.25
h)		<p>Student is expected to provide a valid definition of Loop. A typical example follows:</p> <p>A loop is a continuous seamlessly repeating section of audio.</p>	0.75	0.75

Question 6	K8	Define video related terminology	4 marks	
			Mark	Total
a)	Student is expected to provide a valid definition of PAL/NTSC. A typical example follows:  Two common video standards. NTSC is the video system used in America. PAL is the most used video system in Europe.		1	1
b)	Student is expected to provide a valid definition of aspect ratio. A typical example follows:  The ratio of the width to the height of an image or screen.		1	1
c)	Student is expected to provide a valid definition of 4K. A typical example follows:  A display device or content having a horizontal resolution of 4000 pixels.		1	1
d)	Student is expected to provide a valid definition of Keyframe. A typical example follows:  A keyframe is a drawing which marks the beginning and end of a transition.		1	1

Question 7	K10	List the advantages of using CSS with HTML	4 marks	
		Student is expected to provide <b>FOUR</b> advantages.	Mark	Total
		Typical advantages follow: <ul style="list-style-type: none"> <li>• interactivity</li> <li>• design and templates</li> <li>• separation of presentation from content</li> <li>• internal and external CSS</li> </ul>	1 mark for each correct advantage	4

Question 8	C3	Justify the most appropriate audio and video files for a given scenario	6 marks	
			Mark	Total
a)		No	1	1
b)		A typical reason follows:  AVI have a smaller compression rate which result in larger file sizes. As such AVI is not the best format for streaming.  <i>Any other reasons that address the scenario requirement can be accepted.</i>	1	1
c)		A typical reason follows:  ACC produces higher quality audio when compared to an audio of the same size using MP3.  <i>Any other reasons that address the scenario requirement can be accepted.</i>	1	1

d)	<p>Aspect Ratio: 16:9</p> <p>A typical justification follows:</p> <p>16:9 is the ratio that is compatible with all the different types of adverts on Facebook.</p> <p><i>Any other reasons that address the scenario requirement can be accepted.</i></p>	<p>1 mark for correct aspect ratio</p> <p>2 marks for correct justification</p>	3
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Question 9	C5	Explain different HTML tags and their respective attributes in a given code snippet	6 marks	
			Mark	Total
a)		lang	0.5	0.5
b)		1 row 2 columns	0.25 for correct row, 0.25 for correct column	0.5
c)		<tr>	0.5	0.5
d)		The <ol> tag defines an ordered list.	0.5	0.5
e)		<p>A typical answer can be:</p> <p>&lt;li&gt; is used to define a list item in an ordered or unordered list.</p>	1	1
f)		<p>A typical answer can be:</p> <p>&lt;div&gt; tag is used to create different sections in the HTML code.</p>	1	1

g)	<div style="background-color: #cccccc; padding: 5px;"> <ol style="list-style-type: none"> <li>1. Captain America: Civil War</li> <li>2. Doctor Strange</li> <li>3. Guardians of the Galaxy Vol 2</li> </ol> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <ol style="list-style-type: none"> <li>4. Spider-Man Homecoming</li> <li>5. Thor Ragnarok</li> </ol> </div> <p><i>Background colour and other non-default formatting should be ignored.</i></p>	<p>0.25 for including the continuous numbers to the list</p> <p>0.25 for correct text content of list</p> <p>0.25 marks for including the line</p> <p>0.25 marks for placing the line under Guardians of the Galaxy Vol 2</p>	1
h)	<p>A typical answer can be:  <code>&lt;p&gt;</code> tag defines a new paragraph in HTML.</p>	1	1

\*The following clarification was issued after the examination:

In the sample answer provided in the marking scheme the correct answer is AVI (having the poorest quality). This was from the point of view of bitrates and encoding libraries. However, it is to be noted that when the file size is held constant the general consensus is that AVI would result in better quality.

In the question provided, no reference was made to bitrates, sizes or encoding libraries constraints. Hence with the above in mind, in order to fairly assess the students, the paper panel decided that both answers (MP4 and AVI) should be considered as correct.