



**L-Università  
ta' Malta**

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE  
EXAMINATIONS BOARD

**SECONDARY EDUCATION CERTIFICATE LEVEL  
2024 MAIN SESSION**

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<b>SUBJECT:</b>	<b>Information Technology</b>
<b>PAPER NUMBER:</b>	Controlled – Unit 2
<b>DATE:</b>	12 <sup>th</sup> May 2023
<b>TIME:</b>	10:00 a.m. to 11:35 a.m.

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

**Name of candidate** \_\_\_\_\_

**I.D. number** \_\_\_\_\_

**School** \_\_\_\_\_

**Class** \_\_\_\_\_

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

**Scenario**

- 'Let's Read' is a newly established non-governmental organisation (NGO).
- The aim of this NGO is to encourage reading among children.

**Question 1**

**K-1 (4 marks)**

'Let's Read' needs to promote the services it offers to the public.

a) List **TWO** different types of media, apart from 'images', 'audio', and 'video'.

Media 1: \_\_\_\_\_ (0.5)

Media 2: \_\_\_\_\_ (0.5)

b) Relate the following media with **ONE** of the human senses.

Images: \_\_\_\_\_ (0.5)

Audio: \_\_\_\_\_ (0.5)

c) Identify **TWO** hardware devices which are required to develop or experience each of the following media.

Hardware 1 required for Images: \_\_\_\_\_ (0.5)

Hardware 2 required for Images: \_\_\_\_\_ (0.5)

Hardware 1 required for Audio: \_\_\_\_\_ (0.5)

Hardware 2 required for Audio: \_\_\_\_\_ (0.5)

**Question 2**

**K-2 (4 marks)**

- 'Let's Read' would like to promote reading by producing e-books for children.
- They are currently producing an e-book which will include various images.

a) State **FOUR** main characteristics of image formats, apart from 'colour depth' and 'vector/raster'.

Characteristic 1: \_\_\_\_\_ (0.25)

Characteristic 2: \_\_\_\_\_ (0.25)

Characteristic 3: \_\_\_\_\_ (0.25)

Characteristic 4: \_\_\_\_\_ (0.25)

b) The following screenshot shows some properties of the image file *smiling face.gif*, that will be included in the e-book.

Property	Value
<b>Image</b>	
	200 x 242
	200 pixels
	242 pixels
	8
<b>File</b>	
	smiling face.gif
	GIF File
	C:\Users\
	12/09/2022 15:16
	12/09/2022 15:16
	281 KB
	AL

From the above screenshot, identify the following image characteristics.

- i. The value of the colour depth: \_\_\_\_\_ (0.5)
- ii. Whether the image is vector/raster: \_\_\_\_\_ (0.5)

c) Describe 'colour depth' and 'vector/raster' as characteristics of GIF images.

Colour depth: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

Vector/Raster: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

**Please turn the page.**

**Question 3**

**K-4 (4 marks)**

Audio elements, such as sound effects and narration, will be included in the e-book.

a) Name **TWO** audio file characteristics.

Characteristic 1: \_\_\_\_\_ (0.5)

Characteristic 2: \_\_\_\_\_ (0.5)

b) Relate the following **FOUR** audio file types to the appropriate statement which states their characteristics.

AAC	ALAC	LPCM	WAV
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i. This is a lossless audio file type. \_\_\_\_\_ (0.25)

ii. This uncompressed audio file typically transfers up to 1411 Kilobits of audio data per second. \_\_\_\_\_ (0.25)

iii. An uncompressed audio file type which outputs very high-quality audio as it can reach transfer rates of around 6Mbps. \_\_\_\_\_ (0.25)

iv. This is a lossy audio file type. \_\_\_\_\_ (0.25)

c) Describe the **TWO** audio file characteristics named in Question 3a.

Characteristic 1: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

Characteristic 2: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

**Question 4****K-5 (4 marks)**

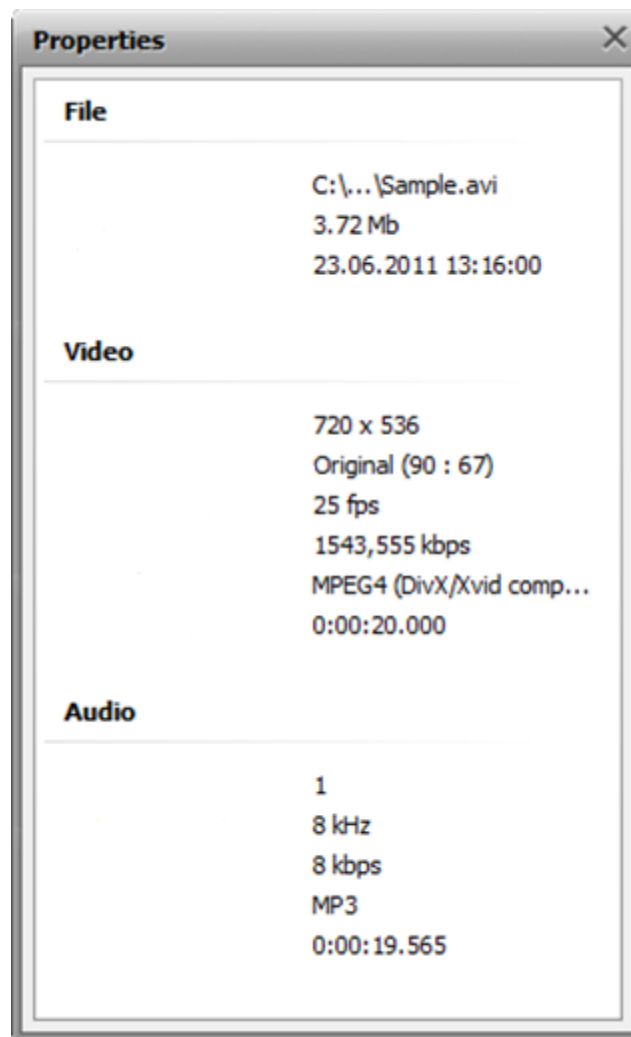
To make reading more appealing, 'Let's Read' also intends to include video clips in the e-book.

a) Name **TWO** different video file characteristics, apart from 'aspect ratio' and 'frame dimensions'.

Characteristic 1: \_\_\_\_\_ (0.5)

Characteristic 2: \_\_\_\_\_ (0.5)

b) The following screenshot shows some properties of an .avi video file.



(Source: <https://onlinehelp.avs4you.com/>)

From the screenshot above, identify the value of the aspect ratio and the frame dimensions, for the .avi video file.

Aspect ratio: \_\_\_\_\_ (0.5)

Frame dimensions: \_\_\_\_\_ (0.5)

***This question continues on next page.***

c) Describe the following **TWO** video characteristics:

Aspect ratio: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

Frame dimensions: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

**Question 5**

**C-3 (6 marks)**

- 'Let's Read' would like to upload the e-book online so that it is accessible by anyone who has access to the Internet.
- They are currently discussing what audio and video file formats should be used for this situation.

a) Explain **ONE** limitation of .alac audio files and **ONE** limitation of .mkv video files with respect to using such file types in the e-book which will be uploaded online.

Explanation of .alac limitation:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

Explanation of .mkv limitation:

\_\_\_\_\_  
\_\_\_\_\_

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(1)

b) Justify why .mp3 audio files and .ogg video files would be more appropriate for the purpose of uploading the e-book online.

Justification of .mp3 audio file:

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(1)

Justification of .ogg video file:

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(1)

c) Justify why .mp4 video containers are more appropriate than .avi containers for this e-book scenario based on file size and compatibility.

Justification based on file size:

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(1)

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Justification based on compatibility:

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(1)

**Question 6**

**K-7 (4 marks)**

- 'Let's Read' is thinking of developing a website.
- The purpose of this website is to have all e-books gathered in one place.
- They are currently browsing the web to get ideas of possible designs.

a) List **TWO** basic elements of a website apart from the header and the main content.

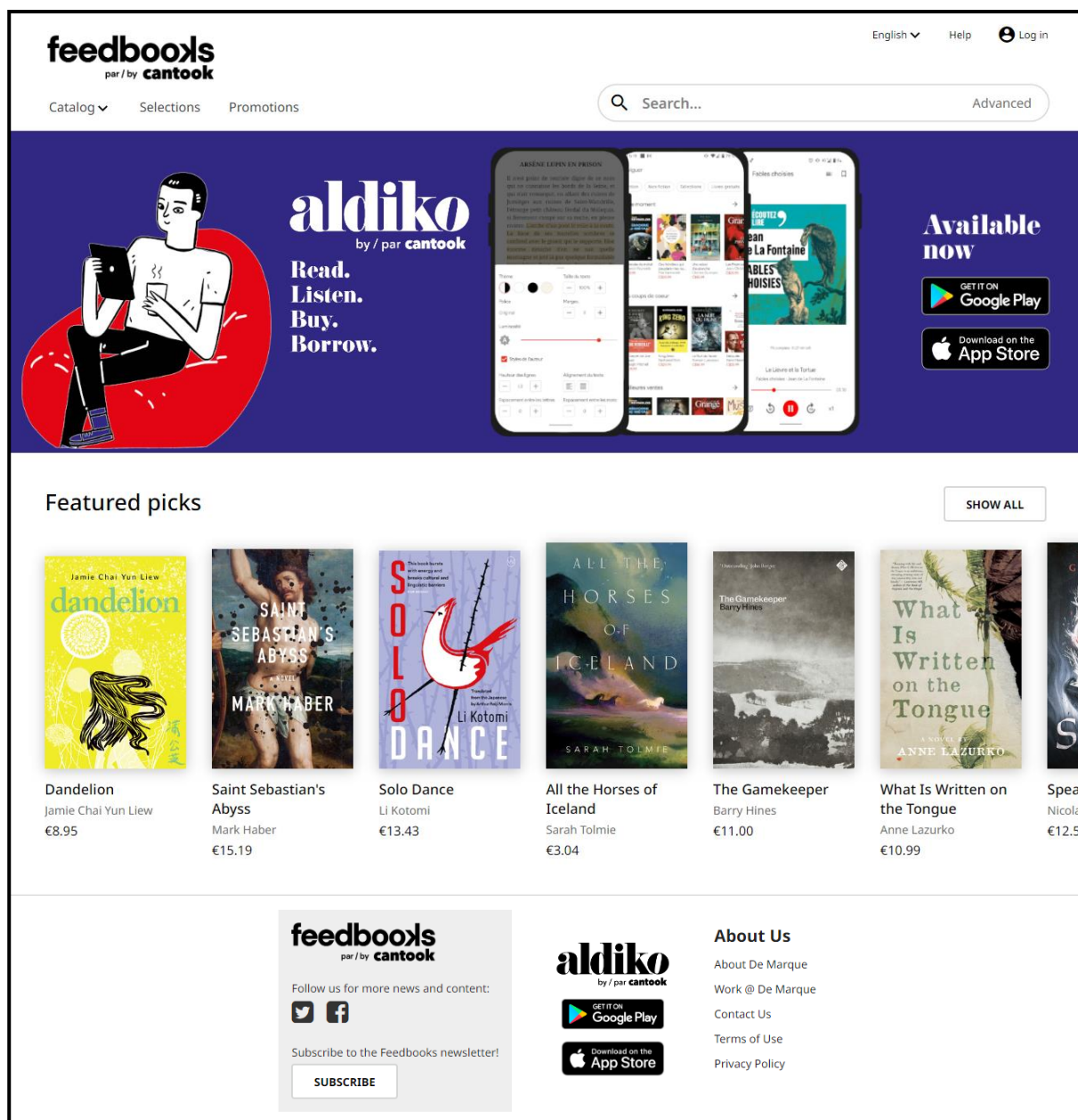
Element 1: \_\_\_\_\_ (0.5)

Element 2: \_\_\_\_\_ (0.5)

b) The image on the next page shows a possible design for the website.

Identify the **TWO** basic website elements you listed in Question 6a by drawing a circle around these elements in the image on the next page. Each website element should be labelled by writing its name next to it. (1)





(Source: <https://www.feedbooks.com>)

c) Outline the purpose of each of the **TWO** basic website elements you listed in Question 6a.

Purpose of element 1: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ (1)

Purpose of element 2: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ (1)

**Please turn the page.**

**Question 7**

**C-4 (6 marks)**

- The main purpose of 'Let's Read' website is for children to read books.
- The website should have a colourful and user-friendly interface, to encourage children to visit the website often.
- Moreover, it should allow children to read e-books.

The following are possible designs for two headers and two main contents.



Header 1

(Source: <https://centslessbooks.com>)



Header 2

(Source: <https://literateforlife.org>)

<
1
2
3
>

Latest Books First

**Are you Interested in Business and Management?**

Business books have always been popular as we seek out better ways to build and run our businesses or get ahead in our jobs. They tend to be practical, how-to guides focusing on specific topics or biographical of business leaders.

Some of the key sub categories will include the following: Finance, accounting and tax books tend to be very practical and may support gaining professional qualification or taking that fundamental learning to the next level. However, you can also find **free downloadable ebooks** specifically written for managers who are non-financial people to give enough understanding of accounting to know how a business fits together. Making money in the stock market through investing is a very popular category.

Managing a **business**, department or team is a complex task and requires a broad range of skills. Learn new techniques with management books. Economics books range from the classics and fundamental thinking of economics through to modern day thinking as social dynamic change. Most would say that people are a company's people are its greatest assets. Much of the economy is made up of small


Main Content 1

(Source: [https:// www.obooko.com](https://www.obooko.com))

**Beatrice and the Un-Golden Fish**

00:00:00 loaded 00:22:24

Download



Read by Natasha  
Written by Bertie  
Illustration from Adobe Stock

With a little inspiration from the fairy tale *The Golden Fish* and from *The Idylls of the King* by Alfred, Lord Tennyson - see end of Text for the Quote from the poem.

This story takes us back to the time when Beatrice was just fifteen years old, and it's about how she met a grumpy fish called Colin the Carp.

She came across Colin before she met Prince Bertie. Even then, she knew Bertie's name of course, because who hasn't heard of the Prince and his antics?

Search for stories

**Bertie Stories**

Advertisement

1st Grade 2nd Grade  
3rd Grade 4th Grade  
5th Grade 6th Grade  
7th Grade 8th Grade

Real learning can be really fun  
Adapted Mind  
ezoic report this ad

Main Content 2

(Source: <https://www.stornory.com>)

a) Select the most appropriate header and main content for 'Let's Read' website.

Header: \_\_\_\_\_ (1)

Main content: \_\_\_\_\_ (1)

***This question continues on next page.***

b) Justify the choice of the header and the main content you selected in Question 7a.

Justification of Header: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

Justification of Main Content: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

c) Considering that the website is intended to allow free access to e-books without any personalisation, argue whether it would be better to create a dynamic website or a static website.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (2)

**Question 8**

**K-9 (4 marks)**

The website for 'Let's Read' will be developed using HTML.

a) Define HTML and its use.

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(1)

b) Tags are used when developing a website.

i. List **ONE** example of the following tags, apart from <a> and <link>.

HTML basic tag: \_\_\_\_\_ (0.25)

HTML element tag: \_\_\_\_\_ (0.25)

ii. List **TWO** examples of HTML 5 tags.

HTML 5 tag 1: \_\_\_\_\_ (0.25)

HTML 5 tag 2: \_\_\_\_\_ (0.25)

c) Relate the following **FOUR** attributes to the appropriate statement which defines their use in relation to HTML tags.

class	href	rel	target
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i. This attribute is used with the <a> tag to determine the URL of the webpage the link goes to. \_\_\_\_\_ (0.5)

ii. This attribute can be used with different HTML elements. It is mainly used to point to a particular style in CSS so that all elements will be styled in the same way. \_\_\_\_\_ (0.5)

iii. This attribute can be used with the <a> tag to specify where the linked file should be opened. \_\_\_\_\_ (0.5)

iv. The <link> tag uses this attribute to specify the relationship between the HTML file and the linked CSS file. \_\_\_\_\_ (0.5)

***Please turn the page.***

**Question 9**

**K-10 (4 marks)**

CSS will also be used when developing 'Let's Read' website.

a) Define CSS and its use.

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(1)

b) Distinguish between external and inline CSS.

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(1)

c) The following lines of code are to be included in the CSS of the website.

```
#image1 {  
    border: dotted red;  
    height: 333px;  
    padding: 5px;  
    width: 500px;  
}
```

Outline the use of the following CSS selector and declarations as utilised in the code above.

i. # (id selector): \_\_\_\_\_

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(0.5)

ii. border (declaration): \_\_\_\_\_

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(0.5)

iii. padding (declaration): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ (0.5)

iv. width (declaration): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ (0.5)

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