Cambridge IGCSE™

INFORMATION AND COMMUNICATION TECHNOLOGY **0417/31**

Paper 3 Data Analysis and Website Authoring **February/March 2022**

2 hours 30 minutes

You will need: Candidate source files (listed on page 2)

INSTRUCTIONS

- Carry out **all** instructions in each step.
- Enter your name, centre number and candidate number on every printout before it is sent to the printer.
- Printouts with handwritten candidate details will **not** be marked.
- At the end of the examination, put all your printouts into the Assessment Record Folder.
- If you have produced rough copies of printouts, put a cross through each one to indicate that it is not the copy to be marked.
- You must **not** have access to either the internet or any email system during this examination.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **8** pages.

[Turn over

You have been supplied with the following source files:

m22banner.jpg
m22eagle.jpg
m22flag.png
m22grid.csv
m22lake.csv
m22lake.mp4
m22styles.css
m22text.txt

Task 1 – Evidence Document

Create a new word-processed document.

Make sure your name, centre number and candidate number will appear on every page of this document.

Save this Evidence Document in your work area as **m22evidence_** followed by your centre number_ candidate number, for example, m22evidence_ZZ999_9999

You will need your Evidence Document during the examination to place screenshots when required.

Task 2 – File management

1   Create a new folder called **m22_html**

Locate the following files and store them in your *m22_html* folder.

   m22banner.jpg
   m22eagle.jpg
   m22flag.png
   m22lake.mp4
   m22styles.css
   m22text.txt

Display the contents of your *m22_html* folder showing the folder name, all file names, file extensions, file sizes, image dimensions and, for the video, the frame height and frame width.

Take a screenshot of this folder making sure that the required information is clearly visible. Place this screenshot in your Evidence Document.

[1]

EVIDENCE 1

A screenshot of your *m22_html* folder with the required information clearly visible.
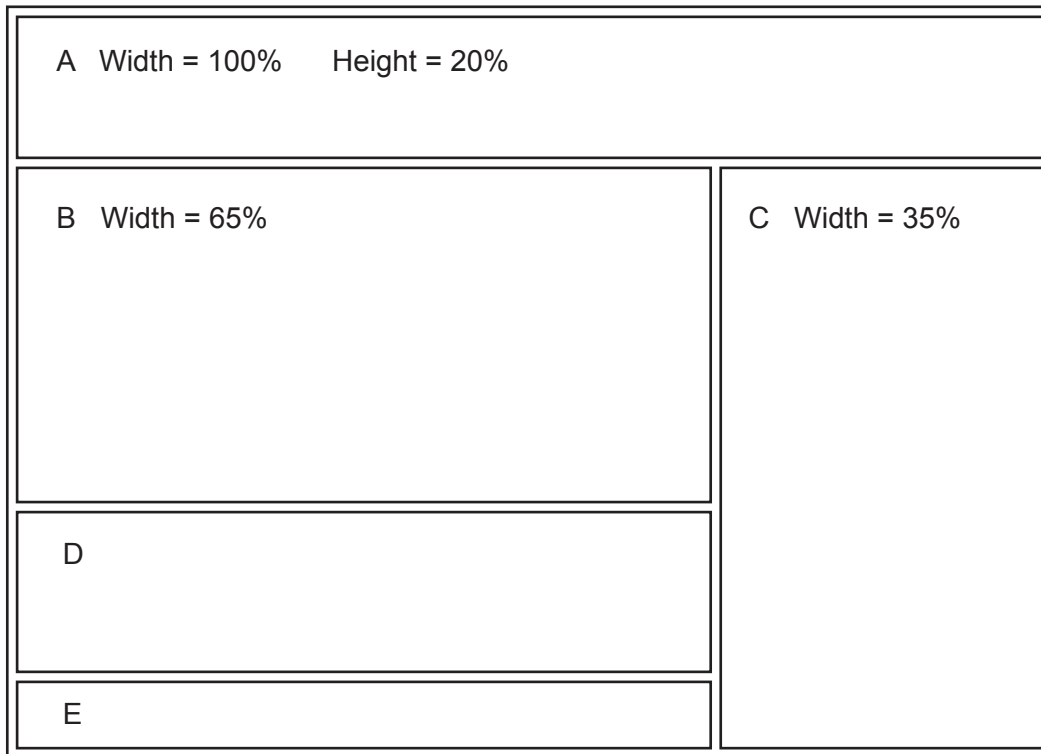

[Total: 1]

Task 3 – Web Page

You are going to create a web page and stylesheet about Lake Naivasha in Kenya. The web page and stylesheet must work in any browser. Make sure that your stylesheet contains no HTML. Make your HTML and stylesheet as efficient as possible.

2 Create, in your *m22_html* folder, a web page called **naivasha.htm**

This web page must be created using a single table and must work in all browsers. The table must be centre aligned and fit 80% of the browser window. The table must have a structure as shown in this diagram:

```
┌─────────────────────────────────────────────────┐
│ ┌─────────────────────────────────────────────┐ │
│ │ A  Width = 100%    Height = 20%             │ │
│ │                                             │ │
│ └─────────────────────────────────────────────┘ │
│ ┌───────────────────────────┐ ┌──────────────┐ │
│ │ B  Width = 65%            │ │ C  Width = 35%│ │
│ │                           │ │              │ │
│ │                           │ │              │ │
│ │                           │ │              │ │
│ │                           │ │              │ │
│ │                           │ │              │ │
│ ├───────────────────────────┤ │              │ │
│ │ D                         │ │              │ │
│ │                           │ │              │ │
│ ├───────────────────────────┤ │              │ │
│ │ E                         │ │              │ │
│ └───────────────────────────┘ └──────────────┘ │
└─────────────────────────────────────────────────┘
```

Each table cell is identified with a letter. Some dimensions are shown. These must be set as percentage values. Do **not** set the height of cells B, C, D or E.

The cell contents shown in the diagram must **not** appear on your final web page.

Table borders must appear on the final web page.

[7]

3 Set the title of the web page to **Lake Naivasha Homepage** [1]

4 Set, in the HTML, the name of the default target window to **_self** [1]

5 Place in cell:

- A the image **m22banner.jpg**
- B a video tag to display **m22lake.mp4** so that it fits the width of this cell. Display an automated text-based error message if the browser does **not** support this video type
- C the image **m22eagle.jpg**

[8]

6 Place inline style attributes into the HTML, so that each image fits the width of the table cell, with its aspect ratio maintained. [1]

7 Add appropriate alternate text to both images. [1]

8 Place in cell D the text from the file **m22text.txt**

Set this text as paragraph style.

[2]

9 Enter in cell E the text:

Edited by: followed by a space, your name, centre number and candidate number.

Set this text as style h3

[2]

10 Create a hyperlink from the text *Click here* to open a web page with the URL **http://www.magicalkenya.com** in a new browser window called **_blank** [3]

11 Attach the stylesheet **m22styles.css** to your web page. [1]

12 Create a new stylesheet so that:

- the table is centre aligned within the browser window
- all table cells have padding set to 10 pixels
- all table elements have the spaces between the borders set to 10 pixels
- the top margin above the table is set to 173 pixels
- your name, centre number and candidate number are set as a comment at the end of the stylesheet.

Make sure that your stylesheet contains no HTML or scripting language.

Save this stylesheet, in your *m22_html* folder, in cascading stylesheet format as **m22styles2_** followed by your centre number_candidate number, for example, m22styles2_ZZ999_9999

Attach this stylesheet to your web page so that it has higher priority than the one attached in step 11.

Take a screenshot to show the file name and all contents of your stylesheet and place this in your Evidence Document. Make sure the file name and all contents are clearly visible.

[8]

EVIDENCE 2
A screenshot of your stylesheet with the required information clearly visible.

---

13 Save your web page.

Take a copy of your HTML source and place this in your Evidence Document.

> **EVIDENCE 3**
> A copy of your HTML source.

Display your web page in a browser. If necessary resize it so that:

- all the page can be seen
- all text can be easily read
- the address bar is visible.

Take screenshot evidence showing your web page in the browser. Place this in your Evidence Document.

[1]

> **EVIDENCE 4**
> Screenshot evidence of your web page in the browser with the table contents and background elements clearly visible.

[Total: 36]

Task 4 – Spreadsheet

You are going to create a spreadsheet to display data about lakes of the Great Rift Valley in Africa. Some of these lakes can be found in more than one country.

14 Open the file **m22lake.csv** in a spreadsheet package.

Save this as a spreadsheet with the file name **Country_** followed by your centre number_candidate number, for example, Country_ZZ999_9999 [1]

15 Delete row 1. [1]

16 Delete columns A, B, D, E, F and G. [1]

17 Remove all duplicate data from your spreadsheet. [1]

18 Place on the left in the header the text **Created by:** then a space and then your name, centre number and candidate number.

Place on the right in the header the automated file name without the file path.

[2]

19 Sort your spreadsheet into ascending order.

Set your spreadsheet to display gridlines and row and column headings when printed.

Save your spreadsheet.

Take a screenshot to show the print preview of your spreadsheet. Make sure that:

- the header is fully visible
- gridlines are displayed
- row and column headings are displayed
- all data fits within the column width and is fully visible.

Place your screenshot in your Evidence Document.

[4]

EVIDENCE 5

A screenshot of the print preview of your spreadsheet with the required information clearly visible.

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20 Open and examine the files **m22grid.csv** and **m22lake.csv**

These files will be used but must **not** be edited.

Create and format a new spreadsheet so that it looks like this:

	A	B	C	D	E	F	G
1		Lake finder by country					
2							
3		Country	Ethiopia				
4							
5		Code	Name	Area (km2)	Elevation (m)	Depth (max)	Water
6	2						
7	3						
8	4						
9	5						
10	6						
11	7						
12	8						
13	9						
14	10						

Make sure cells B1 to G1 and C3 to G3 are merged.

Save this spreadsheet with the file name **Finder_** followed by your centre number_candidate number, for example, Finder_ZZ999_9999

[5]

21 Place a formula in cell B6 that can be replicated down to cell B14. The formula must look up the code for each lake, using the country stored in cell C3 and the external file *m22grid.csv* for the array. Make sure that, within each formula, if there is no lake code, no error message or data is displayed in the cell.

Hint: You may use the contents of column A to help you.

Replicate your formula from cell B6 to cell B14.

Hide column A.

[15]

22 Place formulae in cells C6 to G14 to look up the name, area, elevation, depth and type of water using the lake code in column B for the value and the external file *m22lake.csv* for the array.

Make sure that, within each formula, if there is no lake code, no error message or data is displayed in each cell.

[7]

23 Place your name, centre number and candidate number, left aligned in the header. [1]

24 Print your spreadsheet showing the formulae. Make sure:

- it is in landscape orientation
- the row and column headings are displayed
- the contents of all cells, except column A, are fully visible.

[1]

PRINTOUT 1

Make sure that you have entered your **name**, **centre number** and **candidate number** on the spreadsheet showing the formulae.

---

25 Enter into cell C3 the text **Kenya**

Save your spreadsheet.

Print the spreadsheet showing the values. Make sure the:

- printout fits on a single page
- contents of only cells B1 to G14 are fully visible
- row and column headings are **not** displayed.

[2]

PRINTOUT 2

Make sure that you have entered your **name**, **centre number** and **candidate number** on the spreadsheet showing the values.

---

26 Enter into cell C3 the text **Tanzania**

Save your spreadsheet.

Print the spreadsheet showing the values. Make sure the:

- printout fits on a single page
- contents of only cells B1 to G14 are fully visible
- row and column headings are **not** displayed.

[1]

> **PRINTOUT 3**
>
> Make sure that you have entered your **name**, **centre number** and **candidate number** on the spreadsheet showing the values.

27 Enter into cell C3 the text **Burundi**

Save your spreadsheet.

Print the spreadsheet showing the values. Make sure the:

- printout fits on a single page
- contents of only cells B1 to G14 are fully visible
- row and column headings are **not** displayed.

[1]

> **PRINTOUT 4**
>
> Make sure that you have entered your **name**, **centre number** and **candidate number** on the spreadsheet showing the values.

[Total: 43]

Task 5 – Printing the Evidence Document

Save and print your Evidence Document.

> **PRINTOUT 5**
>
> Make sure your **name**, **centre number** and **candidate number** appear on every page of your Evidence Document.