Cambridge Assessment International Education

Example Responses – Paper 3

Cambridge IGCSE™ / IGCSE (9–1) Information and Communication Technology 0417 / 0983

For examination from 2023

Cambridge Pathway

Contents

Introduction

The main aim of this booklet is to exemplify standards for those teaching Cambridge IGCSE / IGCSE (9-1) Information and Communication Technology 0417 / 0983.

This booklet contains responses to all questions from June 2023 Paper 31, which have been written by a Cambridge examiner. Responses are accompanied by a brief commentary highlighting common errors and misconceptions where they are relevant.

The question papers and mark schemes are available to download from the School Support Hub

0417 / 0983 June 2023 Question Paper 31

0417 / 0983 June 2023 Mark Scheme 31

0417 / 0983 June 2023 Supporting File 31

Past exam resources and other teaching and learning resources are available from the School Support Hub

Question 1

You are going to create a spreadsheet to calculate and display weather data about three towns called Amarta, Bingchen and Chelsmy.

1 Open and examine the file **j31weather.csv** in your spreadsheet software.

Save this as a spreadsheet with the file name **Weather_** followed by your centre number_ candidate number, for example, Weather_ZZ999_9999

Place in the footer:

- left aligned, the automated file name with no file path
- right aligned, your name, centre number and candidate number.

[2]

	A	B	C	D	E	F	G	H	I	J	K
1	***Average hours of sunshine per month***										
2		**Amarta**	**Bingchen**	**Chelsmy**							
3	January										
4	February										
5											
6	Number of days with rain in Amarta										
7	Number of days with rain in Bingchen										
8	Number of days with rain in Chelsmy										
9	Number of days with heavy rain in Amarta										
10	Average wind speed in Amarta in January										
11	Number of days with a wind speed of less than 5 knots in Amarta in January										
12											
13	***Town***	***Amarta***			***Bingchen***			***Chelsmy***			
14	**Date**	**Sunshine (hours)**	**Rainfall (mm)**	**Wind speed (knots)**	**Sunshine (hours)**	**Rainfall (mm)**	**Wind speed (knots)**	**Sunshine (hours)**	**Rainfall (mm)**	**Wind speed (knots)**	
15	1st January 2023	4.224	6.86	13	3.246	5.36	19	2.109	0.5	10	
16	2nd January 2023	0.479	0	20	3.212	0	23	4.456	0	10	
17	3rd January 2023	4.748	0	20	3.964	9.88	18	4.019	2.97	0	
18	4th January 2023	3.013	0	4	3.256	1.6	16	1.827	3.52	18	
19	5th January 2023	4.848	5.69	21	2.639	0	23	0.716	0	4	
20	6th January 2023	4.784	0	24	1.236	0	16	2.611	0	8	
21	7th January 2023	1.701	8.04	23	1.735	0	16	2.723	5.8	0	
22	8th January 2023	0.773	6.42	13	2.047	3.88	29	4.144	4.38	13	
23	9th January 2023	4.524	0	11	4.225	0	28	2.428	0	11	
24	10th January 2023	2.801	6.59	8	3.386	0	2	4.625	0	2	
25	11th January 2023	0.853	3.89	3	1.904	4.29	6	1.539	0	12	
26	12th January 2023	2.937	7.49	0	0.072	0	26	4.239	9.66	10	
27	13th January 2023	0.209	0.08	20	3.013	2.09	9	2.472	0	15	
28	14th January 2023	3.102	0	5	1.885	0	20	1.184	5.44	10	
29	15th January 2023	2.569	0	27	2.34	0	12	0.266	0	8	

Weather_ZZ999_9999.xlsx A Candidate_ZZ999_9999

Examiner comment

- Many candidates completed this question as specified, setting the automated filename with no file path on the left in the footer.
- Common errors included candidates using an incorrect file name for the saved data file, the candidate saving the work with a file type that was not a spreadsheet (often saved in .csv or .txt format), or confusing the header and the footer and placing both the required elements in the header rather than the footer.

Question 2

2 Format rows 1 to 17 of the spreadsheet to look like this.

	A	B	C	D	E	F	G	H	I	J
1	***Average hours of sunshine per month***									
2		**Amarta**	**Bingchen**	**Chelsmy**						
3	January									
4	February									
5										
6	Number of days with rain in Amarta									
7	Number of days with rain in Bingchen									
8	Number of days with rain in Chelsmy									
9	Number of days with heavy rain in Amarta									
10	Average wind speed in Amarta in January									
11	Number of days with a wind speed of less than 5 knots in Amarta in January									
12										
13	***Town***	***Amarta***			***Bingchen***			***Chelsmy***		
14	**Date**	**Sunshine (hours)**	**Rainfall (mm)**	**Wind speed (knots)**	**Sunshine (hours)**	**Rainfall (mm)**	**Wind speed (knots)**	**Sunshine (hours)**	**Rainfall (mm)**	**Wind speed (knots)**
15	1st January 2023	4.224	6.86	13	3.246	5.36	19	2.109	0.5	10
16	2nd January 2023	0.479	0	20	3.212	0	23	4.456	0	10
17	3rd January 2023	4.748	0	20	3.964	9.88	18	4.019	2.97	0
18	4th January 2023	3.013	0	4	3.256	1.6	16	1.827	3.52	18

Apply the formatting in rows 15 to 17 down to row 73.

Cells in rows 1 and 13 must be merged and centre aligned with a 16-point font as shown. Cells in the range A6 to C11 must be merged as shown. [10]

	A	B	C	D	E	F	G	H	I	J	K
1	***Average hours of sunshine per month***										
2		**Amarta**	**Bingchen**	**Chelsmy**							
3	January										
4	February										
5											
6	Number of days with rain in Amarta										
7	Number of days with rain in Bingchen										
8	Number of days with rain in Chelsmy										
9	Number of days with heavy rain in Amarta										
10	Average wind speed in Amarta in January										
11	Number of days with a wind speed of less than 5 knots in Amarta in January										
12											
13	***Town***	***Amarta***			***Bingchen***			***Chelsmy***			
14	**Date**	**Sunshine (hours)**	**Rainfall (mm)**	**Wind speed (knots)**	**Sunshine (hours)**	**Rainfall (mm)**	**Wind speed (knots)**	**Sunshine (hours)**	**Rainfall (mm)**	**Wind speed (knots)**	
15	1st January 2023	4.224	6.86	13	3.246	5.36	19	2.109	0.5	10	
16	2nd January 2023	0.479	0	20	3.212	0	23	4.456	0	10	
17	3rd January 2023	4.748	0	20	3.964	9.88	18	4.019	2.97	0	
18	4th January 2023	3.013	0	4	3.256	1.6	16	1.827	3.52	18	
19	5th January 2023	4.848	5.69	21	2.639	0	23	0.716	0	4	
20	6th January 2023	4.784	0	24	1.236	0	16	2.611	0	8	
21	7th January 2023	1.701	8.04	23	1.735	0	16	2.723	5.8	0	
22	8th January 2023	0.773	6.42	13	2.047	3.88	29	4.144	4.38	13	
23	9th January 2023	4.524	0	11	4.225	0	28	2.428	0	11	
24	10th January 2023	2.801	6.59	8	3.386	0	2	4.625	0	2	
25	11th January 2023	0.853	3.89	3	1.904	4.29	6	1.539	0	12	
26	12th January 2023	2.937	7.49	0	0.072	0	26	4.239	9.66	10	
27	13th January 2023	0.209	0.08	20	3.013	2.09	9	2.472	0	15	
28	14th January 2023	3.102	0	5	1.885	0	20	1.184	5.44	10	
29	15th January 2023	2.569	0	27	2.34	0	12	0.266	0	8	

Weather_ZZ999_9999.xlsx

A Candidate_ZZ999_9999

Examiner comment

- This question was not challenging, but candidates needed to carefully study the diagram in the question paper in detail to avoid making formatting errors.
- Common mistakes included:
  - cells within the range A6 to C11 were not merged across the 3 columns as shown in the diagram
  - cells within the range A6 to C11 were not right aligned
  - the merged cells in rows 1 and 13 were not formatted with a grey background
  - the merged cells in rows 1 and 13 were not set in an italic font
  - text in rows 11 and 14 was not wrapped as shown
  - text in row 14 was not aligned centrally both horizontally and vertically
  - cell borders were not applied as shown in the question paper.

Question 3

3 Print your spreadsheet showing the values.

Make sure:

- the page orientation is landscape
- the contents of all cells are fully visible and can be easily read
- the row and column headings are displayed.

[1]

	A	B	C	D	E	F	G	H	I	J	K
1	***Average hours of sunshine per month***										
2		**Amarta**	**Bingchen**	**Chelsmy**							
3	January										
4	February										
5											
6	Number of days with rain in Amarta										
7	Number of days with rain in Bingchen										
8	Number of days with rain in Chelsmy										
9	Number of days with heavy rain in Amarta										
10	Average wind speed in Amarta in January										
11	Number of days with a wind speed of less than 5 knots in Amarta in January										
12											
13	***Town***	***Amarta***			***Bingchen***			***Chelsmy***			
14	**Date**	**Sunshine (hours)**	**Rainfall (mm)**	**Wind speed (knots)**	**Sunshine (hours)**	**Rainfall (mm)**	**Wind speed (knots)**	**Sunshine (hours)**	**Rainfall (mm)**	**Wind speed (knots)**	
15	1st January 2023	4.224	6.86	13	3.246	5.36	19	2.109	0.5	10	
16	2nd January 2023	0.479	0	20	3.212	0	23	4.456	0	10	
17	3rd January 2023	4.748	0	20	3.964	9.88	18	4.019	2.97	0	
18	4th January 2023	3.013	0	4	3.256	1.6	16	1.827	3.52	18	
19	5th January 2023	4.848	5.69	21	2.639	0	23	0.716	0	4	
20	6th January 2023	4.784	0	24	1.236	0	16	2.611	0	8	
21	7th January 2023	1.701	8.04	23	1.735	0	16	2.723	5.8	0	
22	8th January 2023	0.773	6.42	13	2.047	3.88	29	4.144	4.38	13	
23	9th January 2023	4.524	0	11	4.225	0	28	2.428	0	11	
24	10th January 2023	2.801	6.59	8	3.386	0	2	4.625	0	2	
25	11th January 2023	0.853	3.89	3	1.904	4.29	6	1.539	0	12	
26	12th January 2023	2.937	7.49	0	0.072	0	26	4.239	9.66	10	
27	13th January 2023	0.209	0.08	20	3.013	2.09	9	2.472	0	15	
28	14th January 2023	3.102	0	5	1.885	0	20	1.184	5.44	10	
29	15th January 2023	2.569	0	27	2.34	0	12	0.266	0	8	

Weather_ZZ999_9999.xlsx A Candidate_ZZ999_9999

Examiner comment

- Many candidates did not display row and column headings in their printouts.
- Some candidates did not expand the column widths (or wrap the text), so that all the data was fully visible.

Question 4

4 Place in cells B3 to D3 formulae to calculate for each town the average hours of sunshine for January, rounded to one decimal place.

Place in cells B4 to D4 formulae to calculate for each town the average hours of sunshine for February, rounded to one decimal place. [8]

	A	B	C	D
1	***Average hours of sunshine per month***			
2		**Amarta**	**Bingchen**	**Chelsmy**
3	January	=ROUND(AVERAGE(B15:B45),1)	=ROUND(AVERAGE(E15:E45),1)	=ROUND(AVERAGE(H15:H45),1)
4	February	=ROUND(AVERAGE(B46:B73),1)	=ROUND(AVERAGE(E46:E73),1)	=ROUND(AVERAGE(H46:H73),1)

Examiner comment

- Question 4 was completed well by most candidates using a number of different methods. Many candidates used six individual AVERAGE functions with different ranges for each month and each town (as seen above).
- Some candidates successfully set the ranges to rows 15 to 73 and used an AVERAGEIF function with wildcard searches for January or February, for example =AVERAGEIF(A15:A73,"*January*",B15:B73).
- Most candidates successfully applied the ROUND function (with ,1) to all six of their functions.
- Common errors were the omission of the ROUND function from one or more of the six formulae and using functions such as ROUNDUP, ROUNDDOWN and INT in place of the ROUND function.

Question 5

5 Place in cells D6 to D8 formulae to calculate the total number of days that it rained in each of the three towns. [3]

	A	B	C	D
1	***Average hours of sunshine per month***			
2		**Amarta**	**Bingchen**	**Chelsmy**
3	January	=ROUND(AVERAGE(B15:B45),1)	=ROUND(AVERAGE(E15:E45),1)	=ROUND(AVERAGE(H15:H45),1)
4	February	=ROUND(AVERAGE(B46:B73),1)	=ROUND(AVERAGE(E46:E73),1)	=ROUND(AVERAGE(H46:H73),1)
5				
6	Number of days with rain in Amarta			=COUNTIF(C$15:C$73,">0")
7	Number of days with rain in Bingchen			=COUNTIF(F$15:F$73,">0")
8	Number of days with rain in Chelsmy			=COUNTIF(I$15:I$73,">0")

Examiner comment

- Many candidates who used the COUNTIF functions were awarded marks.
- Some candidates incorrectly attempted this with COUNT functions, manually identifying the cells that matched the required condition.
- A few candidates also incorrectly attempted to use either the SUM or SUMIF functions.

Question 6

6 Place in cell D9 a formula to calculate the number of days with more than 7.5 mm of rain in Amarta. [2]

	A	B	C	D
1	***Average hours of sunshine per month***			
2		**Amarta**	**Bingchen**	**Chelsmy**
3	January	=ROUND(AVERAGE(B15:B45),1)	=ROUND(AVERAGE(E15:E45),1)	=ROUND(AVERAGE(H15:H45),1)
4	February	=ROUND(AVERAGE(B46:B73),1)	=ROUND(AVERAGE(E46:E73),1)	=ROUND(AVERAGE(H46:H73),1)
5				
6	Number of days with rain in Amarta			=COUNTIF(C$15:C$73,">0")
7	Number of days with rain in Bingchen			=COUNTIF(F$15:F$73,">0")
8	Number of days with rain in Chelsmy			=COUNTIF(I$15:I$73,">0")
9	Number of days with heavy rain in Amarta			=COUNTIF(C15:C73,">7.5")

Examiner comment

- Candidates who used the COUNTIF function (as seen above) with the correct selection criterion of “>7.5” were awarded marks.
- The most common error was made by candidates who used the COUNT function with individually referenced cells.

Question 7

7 Place in cell D10 a formula to calculate the average wind speed in Amarta in January rounded up to the nearest knot. [2]

	A	B	C	D
1	***Average hours of sunshine per month***			
2		**Amarta**	**Bingchen**	**Chelsmy**
3	January	=ROUND(AVERAGE(B15:B45),1)	=ROUND(AVERAGE(E15:E45),1)	=ROUND(AVERAGE(H15:H45),1)
4	February	=ROUND(AVERAGE(B46:B73),1)	=ROUND(AVERAGE(E46:E73),1)	=ROUND(AVERAGE(H46:H73),1)
5				
6	Number of days with rain in Amarta			=COUNTIF(C$15:C$73,">0")
7	Number of days with rain in Bingchen			=COUNTIF(F$15:F$73,">0")
8	Number of days with rain in Chelsmy			=COUNTIF(I$15:I$73,">0")
9	Number of days with heavy rain in Amarta			=COUNTIF(C15:C73,">7.5")
10	Average wind speed in Amarta in January			=ROUNDUP(AVERAGE(D15:D45),0)

Examiner comment

- Candidates were awarded marks for using the AVERAGE function and the correct range.
- Some candidates incorrectly selected the range D15:D73 rather than D15:D45.
- Some candidates successfully applied a ROUNDUP function to this, with the use of the ROUND function a common incorrect response.

Question 8

8 Place in cell D11 a formula to calculate the number of days with a wind speed of less than 5 knots in Amarta in January. [1]

	A	B	C	D	E
1		***Average hours of sunshine per month***			
2		**Amarta**	**Bingchen**	**Chelsmy**	
3	January	=ROUND(AVERAGE(B15:B45),1)	=ROUND(AVERAGE(E15:E45),1)	=ROUND(AVERAGE(H15:H45),1)	
4	February	=ROUND(AVERAGE(B46:B73),1)	=ROUND(AVERAGE(E46:E73),1)	=ROUND(AVERAGE(H46:H73),1)	
5					
6			Number of days with rain in Amarta	=COUNTIF(C$15:C$73,">0")	
7			Number of days with rain in Bingchen	=COUNTIF(F$15:F$73,">0")	
8			Number of days with rain in Chelsmy	=COUNTIF(I$15:I$73,">0")	
9			Number of days with heavy rain in Amarta	=COUNTIF(C15:C73,">7.5")	
10			Average wind speed in Amarta in January	=ROUNDUP(AVERAGE(D15:D45),0)	
11			Number of days with a wind speed of less than 5 knots in Amarta in January	=COUNTIF(D15:D45,"<5")	

Examiner comment

- Full marks were awarded to many candidates who used the COUNTIF function with the range D15:D45.
- The most common errors were the use of the COUNT function and / or the use of the incorrect range D15:D7.
- Many candidates used the correct selection criterion of “<5”.
- Some excellent solutions were also seen using the COUNTIFS function testing for both the wind speed and the month, with the full ranges between rows 15 and 73.
- Application of the table style to only columns 2, 3 and 4 was not always correct with some candidates applying the style to column 1 as well. Most candidates displayed the table text on one line, but some candidates incorrectly removed spaces from the headings in Row 1 to fit the table within the column width. Most candidates applied the correct table gridlines, but some left no space after the table, or the space was greater than 6 points.
- Some candidates struggled to apply superscript to the text. A few did not attempt it, and superscript was not always applied to the asterisk.

Question 9

9 Save your spreadsheet.

Print your spreadsheet showing the formulae.

Make sure:

- the row and column headings are displayed
- the page orientation is landscape
- the contents of all cells are fully visible and can be easily read.

[1]

	A	B	C	D	E
1	***Average hours of sunshine per month***				
2		**Amarta**	**Bingchen**	**Chelsmy**	
3	January	=ROUND(AVERAGE(B15:B45),1)	=ROUND(AVERAGE(E15:E45),1)	=ROUND(AVERAGE(H15:H45),1)	
4	February	=ROUND(AVERAGE(B46:B73),1)	=ROUND(AVERAGE(E46:E73),1)	=ROUND(AVERAGE(H46:H73),1)	
5					
6	Number of days with rain in Amarta			=COUNTIF(C$15:C$73,">0")	
7	Number of days with rain in Bingchen			=COUNTIF(F$15:F$73,">0")	
8	Number of days with rain in Chelsmy			=COUNTIF(I$15:I$73,">0")	
9	Number of days with heavy rain in Amarta			=COUNTIF(C15:C73,">7.5")	
10	Average wind speed in Amarta in January			=ROUNDUP(AVERAGE(D15:D45),0)	
11	Number of days with a wind speed of less than 5 knots in Amarta in January			=COUNTIF(D15:D45,"<5")	
12					
13	***Town***	***Amarta***			
14	**Date**	**Sunshine (hours)**	**Rainfall (mm)**	**Wind speed (knots)**	**Sunshine (hours)**
15	1st January 2023	4.224	6.86	13	3.246
16	2nd January 2023	0.479	0	20	3.212
17	3rd January 2023	4.748	0	20	3.964
18	4th January 2023	3.013	0	4	3.256
19	5th January 2023	4.848	5.69	21	2.639
20	6th January 2023	4.784	0	24	1.236
21	7th January 2023	1.701	8.04	23	1.735
22	8th January 2023	0.773	6.42	13	2.047
23	9th January 2023	4.524	0	11	4.225
24	10th January 2023	2.801	6.59	8	3.386
25	11th January 2023	0.853	3.89	3	1.904
26	12th January 2023	2.937	7.49	0	0.072
27	13th January 2023	0.209	0.08	20	3.013
28	14th January 2023	3.102	0	5	1.885

Weather_ZZ999_9999.xlsx A Candidate_ZZ999_9999

Examiner comment

- Some candidates did not include row and column headings.
- Sometimes the formulae were not fully visible as candidates forgot to expand the column widths to fit the formulae and data.

Question 10

10 Print your spreadsheet showing the values.

Make sure:

- only cells A1 to D11 are displayed
- the row and column headings are **not** displayed
- the page orientation is portrait
- it fits on a single page
- the contents of all cells are fully visible and can be easily read.

[3]

Average hours of sunshine per month			
	Amarta	Bingchen	Chelsmy
January	2.5	2.6	3.4
February	2.7	2.5	2.6
Number of days with rain in Amarta			35
Number of days with rain in Bingchen			23
Number of days with rain in Chelsmy			35
Number of days with heavy rain in Amarta			10
Average wind speed in Amarta in January			15
Number of days with a wind speed of less than 5 knots in Amarta in January			5

Examiner comment

- Some candidates printed the full spreadsheet and not only the specified cell range.
- Some candidates included row and column headings in the printout.
- Values were not always fully visible in the spreadsheet.

Question 11

11 In cell E3 calculate the total rainfall for Chelsmy for January.
In cell E4 calculate the total rainfall for Chelsmy for February.

Create an appropriate chart to compare the average hours of sunshine with the total amount of rainfall for the months of January and February in Chelsmy.

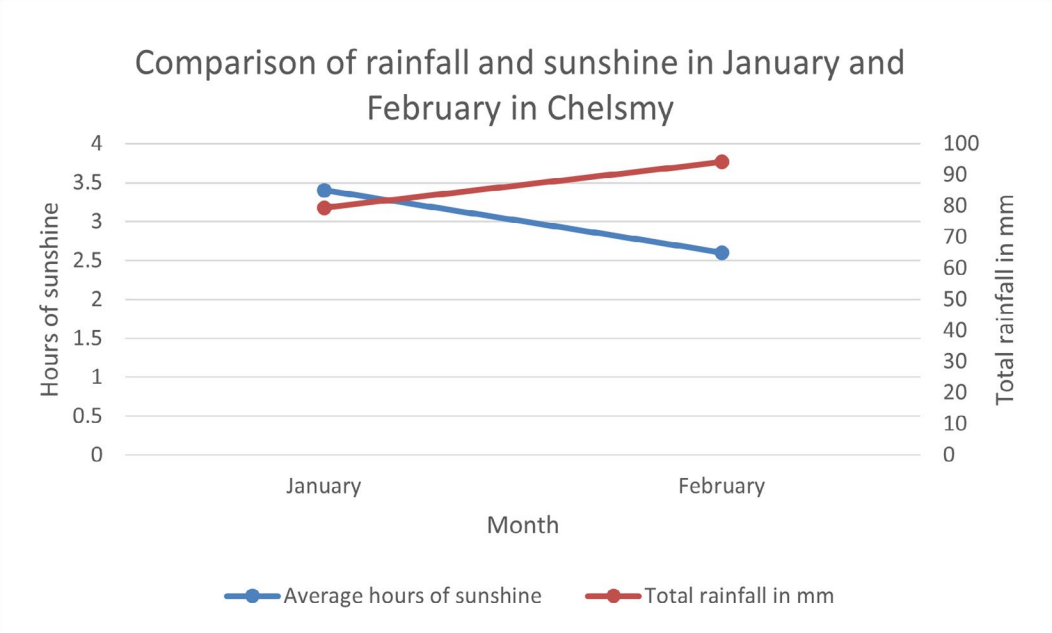
Set the month as the category axis. Set the average hours of sunshine as the primary value axis and the rainfall as the secondary value axis. Set the rainfall axis to have a maximum value of 100 mm.

Fully label the chart.

Save your chart. Place a copy of your chart in your Evidence Document.

[9]

[Total: 42]



Examiner comment

- Some candidates struggled to select an appropriate chart type, although many correctly selected a comparative line graph or a comparative line / bar chart to display this data.
- Most candidates successfully calculated the correct values for the total rainfall.
- Labelling the chart and the axes proved more challenging to candidates. Many did not include labels, or they were not detailed enough to convey the appropriate meaning.
- Adding a second value axis proved more challenging to many candidates.
- Candidates needed to include an appropriate legend when fully labelling the chart, so that a user could determine which data was the sunshine and which was the rainfall. This was not always evident.

Question 12

You are working as part of a team of web developers at TawaraWeb and have been asked to create parts of a web page for a client.

12 Create CSS to be added to an external stylesheet to meet these specifications:

Set the font for h1, h2, h3 and the paragraph styles so that the browser selects and displays the font **Calibri**. If this font is **not** available, the browser selects and displays the font **Helvetica Neue**. If neither of these fonts is available, the browser should display its default sans-serif font.

Place a copy of your CSS in your Evidence Document. [6]

```
h1,h2,h3,p      {font-family:Calibri,"Helvetica Neue",sans-serif}
```

Examiner comment

- Some candidates did not apply the styles to all 4 selectors.
- Some candidates did not include the speech marks around Helvetica Neue.
- Many candidates thought that HTML can appear in the CSS within an external stylesheet. Where HTML was present in the CSS, candidates couldn't be awarded the marks.

Question 13

13 Create all the head section of a web page to meet these specifications:

> Title for the web page is **Weather Data**
>
> Metatags:
>
> - set the character encoding to **ISO-8859-1**
> - set the name of the author to **TawaraWeb** followed by a space then your name
> - set the web page description to **Weather data for the Tawara region**
> - set the viewport to the width of the device being used with an initial scaling of **2**
> - set two appropriate metatag keywords for use by search engines for this page.
>
> Set the default target window to **_blank** if a new web page is opened from within this web page.

Place a copy of your HTML source in your Evidence Document.

[22]

```
<head>
<title>Weather Data</title>
<meta charset="ISO-8859-1">
<meta name="author" content="TawaraWeb A Candidate">
<meta name="description" content="Weather data for the Tawara re-
gion">
<meta name="viewport" content="width=device-width, ini-
tial-scale=2.0">
<meta name="keywords" content="Tawara, weather">
<base target="_blank">
</head>
```

Examiner comment

- This question proved extremely challenging for many candidates. The most common misconception seen in candidates' work was that a single meta tag could be used for multiple name attributes. This was not the case.
- Many candidates used the singular word 'keyword' rather than 'keywords'.
- Candidates selected many inappropriate keywords that did not relate to the contents of the web page. Few candidates appeared to understand that the best keywords were single words rather than short phrases and that these keywords clearly related to the topic in hand. Words like 'region', 'engine', 'HTML', etc. were all seen, but would not help a search engine locate this web page.
- Some candidates did not place their meta tags within the head section of the web page.

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