Cambridge IGCSE™

INFORMATION & COMMUNICATION TECHNOLOGY	**0417/03**
Paper 3 Data Analysis and Website Authoring	**October/November 2021**
MARK SCHEME	
Maximum Mark: 80	

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the October/November 2021 series for most Cambridge IGCSE™, Cambridge International A and AS Level components and some Cambridge O Level components.

This document consists of **10** printed pages.

Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

* the specific content of the mark scheme or the generic level descriptors for the question
* the specific skills defined in the mark scheme or in the generic level descriptors for the question
* the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

* marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
* marks are awarded when candidates clearly demonstrate what they know and can do
* marks are not deducted for errors
* marks are not deducted for omissions
* answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

	A	B	C
1	**Cost of plastic removal for one island**		
2			
3	Fuel cost	1.121	/litre
4	Fuel consumption	102.8	litres/hour
5	Operating speed	15	knots
6	1 knot is	1.15	
7	Crew rate A	8	
8	Crew rate B	4	
9	Port taxes	100	
10			
11	Island code	G5	
12	Island name	=VLOOKUP(B11,n21islands.csv!$A$2:$D$86,2,FALSE)	
13	Distance from recycling plant	=VLOOKUP(B11,n21islands.csv!$A$2:$D$86,4,0)	miles
14	Return distance	=2*B13	miles

B12	=VLOOKUP(…)	1 mark
	B11 or $B$11	1 mark
	n21islands.csv!$A$2:$D$86 or $B$86	1 mark
	,2	1 mark
	,FALSE	1 mark

B13	=VLOOKUP(…)	1 mark
	$B$11, n21islands.csv!$A$2:$D$86	1 mark
	,4,0	1 mark

The spreadsheet shows:

	A	B	C
1		Cost of plastic removal fo...	
2			
3	Fuel cost	1.121	
4	Fuel consumption	102.8	
5	Operating speed	15	
6	1 knot is	1.15	
7	Crew rate A	8	
8	Crew rate B	4	
9	Port taxes	100	
10			
11	Island code	G5	
12	Island name	=VLOOKUP(B11,n21islands.csv!$A$2:$D$86,2,FALSE)	
13	Distance from recycling plant	=VLOOKUP(B11,n21islands.csv!$A$2:$D$86,4,0)	miles
14	Return distance	=2*B13	miles
15	Return journey time	=ROUNDUP(B14/(B5*B6),0)	hours
16	Fuel used for journey	=B15*B4	litres
17	Fuel cost for journey	=B16*B3	
18	Number of crew required	=IF(B15<10,4,IF(B15>15,9,6))	
19	Cost of crew	=B15*(2*B7+(B18-2)*B8)	
20	Total cost of journey	=B17+B19+B9	

Mark scheme callout boxes:

B14	=2*B13	1 mark
B15	=ROUNDUP(…)	1 mark
	… ,0	1 mark
	B14/	1 mark
	(B5*B6)	1 mark
B16	=B15*B4	1 mark
B17	=B16*B3	1 mark
B18	Nested IF (2 or 3 tiers)	1 mark
	IF B15<10 …	1 mark
	… Returns 4	1 mark
	If B15 >= 10 and B15 <=15 …	1 mark
	… Returns 6	1 mark
	IF B15 >15 …	1 mark
	… Returns 9	1 mark

B19	B15*(…)	1 mark
	2*B7+	1 mark
	(B18-2)*B8	1 mark
B20	=B17+B19+B9	1 mark
	Gridlines, row and col headings displayed	1 mark
	Landscape & fully visible	1 mark

Footer	**Costs prepared by:** space Name & numbers	1 mark
	…space **on** space date	1 mark
	Right aligned	1 mark

Costs prepared by: A Candidate ZZ999 9999 on 08/03/2021

Cost of plastic removal for one island

Fuel cost	$1.12	/litre
Fuel consumption	102.8	litres/hour
Operating speed	15	knots
1 knot is	1.15	mph
Crew rate A	$8.00	$ per hour
Crew rate B	$4.00	$ per hour
Port taxes	$100.00	
Island code	M1	
Island name	Boahuraa	
Distance from recycling plant	75	miles
Return distance	150	miles
Return journey time	9	hours
Fuel used for journey	925.2	litres
Fuel cost for journey	$1,037.15	
Number of crew required	4	
Cost of crew	$216.00	
Total cost of journey	$1,353.15	

Rows 1 & 2	Inserted	1 mark
Row 1	**Cost of plastic removal for one island**	1 mark
	Cells A1:C1 merged and centre aligned	1 mark
	All text wrapped on only 2 lines	1 mark
	26 point	1 mark
	White sans-serif font	1 mark
	Dark blue background	1 mark
Row 2	Half height of row 3	1 mark
Column 1	Right aligned	1 mark
Currency	Cells B3,B9,B17,B19,B20 as $ with 2dp	1 mark
Values	Single portrait page and fully visible	1 mark
	No gridlines, row and col headings	1 mark

Cost of plastic removal for one island

Fuel cost	$1.12	/litre
Fuel consumption	102.8	litres/hour
Operating speed	15	knots
1 knot is	1.15	mph
Crew rate A	$8.00	$ per hour
Crew rate B	$4.00	$ per hour
Port taxes	$100.00	

Island code	G5	
Island name	Viligillaa	
Distance from recycling plant	220	miles
Return distance	440	miles
Return journey time	26	hours
Fuel used for journey	2672.8	litres
Fuel cost for journey	$2,996.21	
Number of crew required	9	
Cost of crew	$1,144.00	
Total cost of journey	$4,240.21	

Modelling	Island code set to G5	1 mark
	With correct results	1 mark
	Single portrait page no row and column headings, fully vis	1 mark

Evidence 1

	A	B
1	Atoll	Average distance
2	Gaafu	=ROUND(AVERAGEIF(n21islands.csv!$C$2:$C$86,A2,n21islands.csv!$D$2:$D$86),0)
3	Haa Alif	=ROUND(AVERAGEIF(n21islands.csv!$C$2:$C$86,A3,n21islands.csv!$D$2:$D$86),0)
4	Haa Dhaalu	=ROUND(AVERAGEIF(n21islands.csv!$C$2:$C$86,A4,n21islands.csv!$D$2:$D$86),0)
5	Laamu	=ROUND(AVERAGEIF(n21islands.csv!$C$2:$C$86,A5,n21islands.csv!$D$2:$D$86),0)
6	Meemu	=ROUND(AVERAGEIF(n21islands.csv!$C$2:$C$86,A6,n21islands.csv!$D$2:$D$86),0)
7	Noonu	=ROUND(AVERAGEIF(n21islands.csv!$C$2:$C$86,A7,n21islands.csv!$D$2:$D$86),0)
8	Raa	=ROUND(AVERAGEIF(n21islands.csv!$C$2:$C$86,A8,n21islands.csv!$D$2:$D$86),0)
9	Shaviyani	=ROUND(AVERAGEIF(n21islands.csv!$C$2:$C$86,A9,n21islands.csv!$D$2:$D$86),0)
10	Thaa	=ROUND(AVERAGEIF(n21islands.csv!$C$2:$C$86,A10,n21islands.csv!$D$2:$D$86),0)

Average distance
formulae =ROUND(… ,0) 1 mark
=AVERAGEIF(…) SUMIF / COUNTIF 1 mark
… n21islands.csv!$C$2:$C$86 1 mark
… , compare to atoll name 1 mark
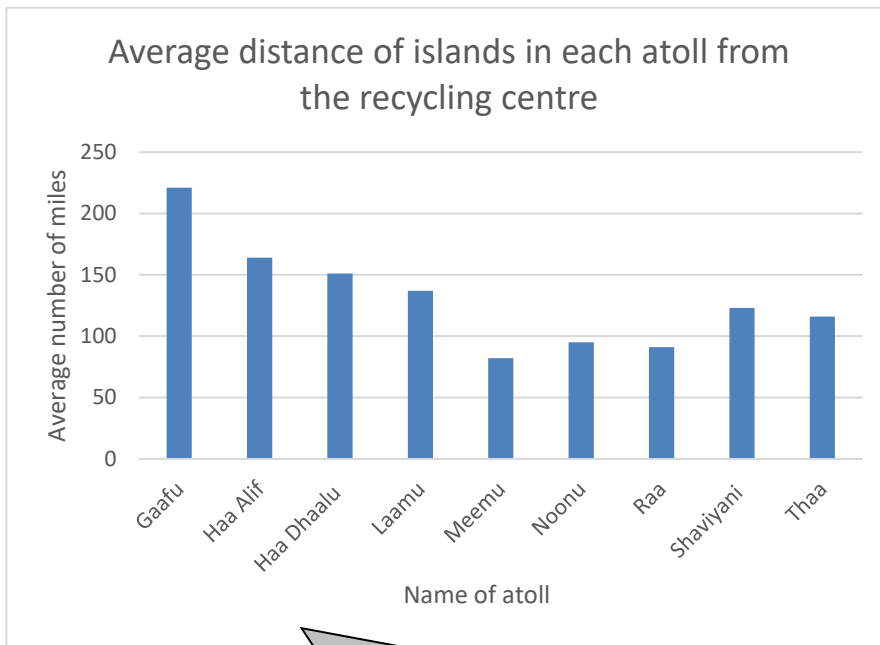… n21islands.csv!$D$2:$D$86 1 mark

Evidence 2

Chart Correct chart type & values 1 mark
Appropriate chart title 1 mark
Appropriate axis titles 1 mark
Appropriate axis labels 1 mark

Evidence 3

```
<!DOCTYPE html>
<html>
 <head>
  <link rel="stylesheet" type="text/css" href="n21plastic.css">
 </head>
 <body>
```

Stylesheet	n21plastic.css attached	1 mark

```
   <table style="width:100%;">
```

Table	width=100%	1 mark

Row 1	height=15%	1 mark
	colspan=3	1 mark

```
    <tr>
     <td colspan="3" style="height:15%;">
       <img src="n21banner.jpg" alt="Banner with the title for the webpage"
style="width:100%" />
     </td>
    </tr>
    <tr>
     <td colspan= "2" style="width:60%; height:45%;">
       <video width="100%" autoplay loop>
        <source src="n21beach.mp4" type="video/mp4">
         Your browser does not support this video file type.
       </video>
     </td>
```

Row 2	width: 60%	1 mark
	height: 45%	1 mark
	video <…> tag used …	1 mark
	… width="100%"	1 mark
	src="n21beach.mp4"	1 mark
	Appropriate error message	1 mark
	</video>	1 mark

```
     <td rowspan="3">
       <img src="n21bottles.jpg" alt="Image of bottle on the beach"
style="width:100%" />
     </td>
    </tr>
```

Rows 2 & 3 left	colspan="2"	1 mark
Row 2 right	rowspan="3"	1 mark
Row 3	height:20%	1 mark

```
    <tr>
     <td colspan="2" style="height:20%;">
       <h2>Above:  A beautiful uninhabited island in Huvadhoo Atoll in the
Maldives, with miles of pristine beaches.</h2>
       <h2>Right:  Until you look closely at the high-water mark on the
same beach.</h2>
       <h2>Below:  Two more images taken from the shoreline of the same
beach, this waste plastic is found all around this and many other
islands.</h2>
       <h2>Web page last updated by  A Candidate  ZZ999  9999</h2>
     </td>
    </tr>
```

Row 4 both cells	width:30%	1 mark
	height:20%	1 mark
Images	style="width:100%" of all 4 still images	1 mark

```
    <tr>
     <td style="width:30%; height:20%;">
```

```
        <img src="n21plastic.jpg" alt="Image of plastic on the beach"
style="width:100%" />
      </td>
      <td style="width:30%; height:20%;">
        <img src="n21shore.jpg" alt="Image of plastic on the beach"
style="width:100%" />
      </td
    </tr>

    </table>
  </body>
</html>
```

Browser view	In browser, with address bar, and no letters vis	1 mark
Table	No borders/gridlines visible	1 mark
Video	In correct cell	1 mark
Row 3	Text from source file as 3 paragraphs	1 mark
4th paragraph	**Web page last updated by:** A Cand ZZ999 9999	1 mark
All text	In style h2	1 mark
Images	Correct still images in correct cells	1 mark
	Aspect ratio of all still images maintained	1 mark