Cambridge Assessment International Education

Cambridge International AS & A Level

INFORMATION TECHNOLOGY **9626/02**

Paper 2 Practical **March 2021**

MARK SCHEME

Maximum Mark: 110

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 March 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.

Task 1

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	**Tawara Health Service**												
3	**Encryption test spreadsheet**												
5	Stored text string:	Fred Amarta											
6	Text string length:	11											
7	Number of character:	1	2	3	4	5	6	7	8	9	10	11	12
8	Characters from text string:	F	r	e	d		A	m	a	r	t	a	
9	Codes from text string:	70	114	101	100	32	65	109	97	114	116	97	
10	Code in binary:	01000110	01110010	01100101	01100100	00100000	01000001	01101101	01100001	01110010	01110100	01100001	
11	Flip nibble:	01100100	00100111	01010110	01000110	00000010	00010100	11010110	00010110	00100111	01000111	00010110	
12	New code in decimal:	100	39	86	70	2	20	214	22	39	71	22	
13	Encrypted data:	d	'	V	F		□	Ö	□	'	G	□	
14	Encrypted text string:	d'VF □Ö□'G□											

	New spreadsheet created and saved as THS1_ZZ999_9999	1 mark
Rows 1 and 3	Pale blue background with dark blue text	1 mark
Row 1	Centre aligned, 48 points high	1 mark
Row 3	Centre aligned, 20 points high	1 mark
	Cells A1:M1 and A3:M3 merged	1 mark
	Cells B5:M5 merged	1 mark
Rows 2 &4	½ height of row 5	1 mark
	All rows sans-serif font	1 mark
	Cells B7 to M13 centre aligned	1 mark
	Column A and rows 5 & 6 left aligned	1 mark
	All text and data 100% correct	1 mark
Header	Filename & no path on left	1 mark
	Created on: [date] at [time] on right	1 mark
Testing	'Fred Amarta' present in cell B5	1 mark
	Generates d'VF □Ö□'G□	1 mark
	result when font set to Calibri – other fonts will differ	

Task 2

	A	B
4		
5	Stored text string:	Fred Amarta
6	Text string length:	=LEN(B5)
7	Number of character:	1
8	Characters from text string:	=MID($B$5,B7,1)
9	Codes from text string:	=IF(B7>$B$6,"",CODE(B8))
10	Code in binary:	=IF(B7>$B$6,"",RIGHT("00000000"&DEC2BIN(B9),8))
11	Flip nibble:	=IF(B7>$B$6,"",RIGHT("0000000"&RIGHT(B10,4)&LEFT(B10,4),8))
12	New code in decimal:	=IF(B7>$B$6,"",BIN2DEC(B11))
13	Encrypted data:	=IF(B7>$B$6,"",CHAR(B12))
14	Encrypted text string:	=CONCATENATE(B13,C13,D13,E13,F13,G13,H13,I13,J13,K13,L13,M13)

B6	=LEN(B5)	1 mark
B8	=MID( )	1 mark
	$B$5	1 mark
	…as absolute reference	1 mark
	,B7	1 mark
	…as relative reference	1 mark
	,1	1 mark
B9	=IF( )	1 mark
	B7>$B$6	1 mark
	,"",	1 mark
	CODE(B8)	1 mark
B10	RIGHT( )	1 mark
	"00000000"	1 mark
	&	1 mark
	DEC2BIN(B9)	1 mark
	,8	1 mark
	Same error trapping as B9	1 mark
B11	RIGHT("0000000"&… ,8)	1 mark
	RIGHT(B10,4)	1 mark
	& LEFT(B10,4)	1 mark
	Same error trapping as B9	1 mark
B12	BIN2DEC(B11)	1 mark
	Same error trapping as B9	1 mark
B13	CHAR(B12)	1 mark
	Same error trapping as B9	1 mark
Replication	Cells B8:M13	1 mark
B14	=CONCATENATE()	1 mark
	B13,C13,D13,E13,F13,G13,H13,I13,J13,K13,L13,M13	1 mark

Task 3

THS2_ZZ999_9999.xlsx

Created on: 10/09/2019 at 10:19

Tawara Health Service

Encryption test spreadsheet

Stored text string:	13 Lime Lane											
Text string length:	12											
Number of character:	1	2	3	4	5	6	7	8	9	10	11	12
Characters from text string:	1	3		L	i	m	e		L	a	n	e
Codes from text string:	49	51	32	76	105	109	101	32	76	97	110	101
Code in binary:	00110001	00110011	00100000	01001100	01101001	01101101	01100101	00100000	01001100	01100001	01101110	01100101
Flip nibble:	00010011	00110011	00000010	11000100	10010110	11010110	01010110	00000010	11000100	00010110	11100110	01010110
New code in decimal:	19	51	2	196	150	214	86	2	196	22	230	86
Encrypted data:	□	3		Ä	–	Ö	V		Ä	□	æ	V
Encrypted text string:	□3 Ä–ÖV Ä□æV											

THS2	13 Lime Lane	1 mark
	Characters counted as 12	1 mark
	Generates □3 Ä–ÖV Ä□æV	1 mark
	results when font set to Calibri – other fonts will differ	

Task 4

THS3	Angela Pollard, 42 Acacia Avenue, Tawara, F67412	1 mark
	Characters counted as 48	1 mark
	Formulae extended to 48 (or more)…	1 mark
	…with correct replication	1 mark
	Generates □ævVÆ□ □öÆÆ□'FÂ C# □6□6–□ □gVæWVÂ E□w□'□Â dcsC□#	1 mark
	results when font set to Calibri – other fonts will differ	

THS3_ZZ999_9999.xlsx

Tawara Health Service

Encryption test spreadsheet

Stored text string:	Angela Pollard, 42 Acacia Avenue, Tawara, F67412											
Text string length:	48											
Number of character:	1	2	3	4	5	6	7	8	9	10	11	12
Characters from text string:	A	n	g	e	l	a		P	o	l	l	a
Codes from text string:	65	110	103	101	108	97	32	80	111	108	108	97
Code in binary:	01000001	01101110	01100111	01100101	01101100	01100001	00100000	01010000	01101111	01101100	01101100	01100001
Flip nibble:	00010100	11100110	01110110	01010110	11000110	00010110	00000010	00000101	11110110	11000110	11000110	00010110
New code in decimal:	20	230	118	86	198	22	2	5	246	198	198	22
Encrypted data:	□	æ	v	V	Æ	□		□	ö	Æ	Æ	□
Encrypted text string:	□ævVÆ□ □öÆÆ□'FÂ C# □6□6–□ □gVæWVÂ E□w□'□Â dcsC□#											

Task 5

THS4_ZZ999_9999_formulae.xlsx Created on: 09/02/2021 at 10:32

	A	B
1		
2		
3		
4		
5	Stored text string:	Angela Pollard, 42 Acacia Avenue, Tawara, F67412
6	Text string length:	=LEN(B5)
7	Number of character:	1
8	Characters from text string:	=MID($B$5,B7,1)
9	Codes from text string:	=IF(B7>$B$6,"",CODE(B8))
10	Code in binary:	=IF(B7>$B$6,"",RIGHT("00000000"&DEC2BIN(B9),8))
11	Flip nibble:	=IF(B7>$B$6,"",RIGHT("0000000"&RIGHT(B10,4)&LEFT(B10,4),8))
12	New code in decimal:	=IF(B7>$B$6,"",BIN2DEC(B11))
13	Encrypted data:	=IF(B7>$B$6,"",CHAR(B12))
14	Encrypted text string:	=CONCATENATE(B13,C13,D13,E13,F13,G13,H13,I13,J13,K13,L13,M13,N13,O13,P13,Q13,R13,S13,T13,U13,V13,W13,X13,Y13,Z13,AA13,AB13,
15		
16		
17		
18	Encrypted text string:	□ævVÆ□ □öÆÆ□'FÂ C# □6□6–□ □gVæWVÂ E□wl¶□Â dcsC□#
19	Text string length:	=LEN(B18)
20	Number of character:	1
21	Encrypted data	=MID($B$18,B20,1)
22	Codes from text string:	=IF(B20>$B$19,"",CODE(B21))
23	Code in binary:	=IF(B20>$B$19,"",RIGHT("00000000"&DEC2BIN(B22),8))
24	Flip nibble:	=IF(B20>$B$19,"",RIGHT("0000000"&RIGHT(B23,4)&LEFT(B23,4),8))
25	New code in decimal:	=IF(B20>$B$19,"",BIN2DEC(B24))
26	Encrypted data:	=IF(B20>$B$19,"",CHAR(B25))
27	Original text string:	=CONCATENATE(B26,C26,D26,E26,F26,G26,H26,I26,J26,K26,L26,M26,N26,O26,P26,Q26,R26,S26,T26,U26,V26,W26,X26,Y26,Z26,AA26,AB26,

–

A18	Label - Encrypted text string:		1 mark
(A27)	Appropriate label – e.g. Original text string:		1 mark
B18	Test text string placed here		1 mark
B19	=LEN(B18)		1 mark
B21	=MID($B$18,B20,1)	MID($B$18,B7,1)	1 mark
B22	…CODE(B21)		1 mark
B23	…RIGHT(… ,8)		1 mark
	“00000000”&		1 mark
	DEC2BIN(B22)		1 mark
B24	…RIGHT(… ,8)		1 mark
	"00000000"&		1 mark
	RIGHT(B23,4)&LEFT(B23,4)		1 mark
B25	… BIN2DEC(B24)		1 mark
B26	… CHAR(B25)		1 mark
B27	Concatenates all cells from B26 to end		1 mark
	Same error trapping for rows 22 to 26		1 mark
Rows 21 to 27	Structure the same as rows 8 to 14		1 mark

THS4_ZZ999_9999.xlsx Created on: 10/09/2019 at 11:34

Tawara Health Service

Encryption test spreadsheet

Stored text string:	Angela Pollard, 42 Acacia Avenue, Tawara, F67412											
Text string length:	48											
Number of character:	1	2	3	4	5	6	7	8	9	10	11	12
Characters from text string:	A	n	g	e	l	a		P	o	l	l	a
Codes from text string:	65	110	103	101	108	97	32	80	111	108	108	97
Code in binary:	01000001	01101110	01100111	01100101	01101100	01100001	00100000	01010000	01101111	01101100	01101100	01100001
Flip nibble:	00010100	11100110	01110110	01010110	11000110	00010110	00000010	00000101	11110110	11000110	11000110	00010110
New code in decimal:	20	230	118	86	198	22	2	5	246	198	198	22
Encrypted data:	□	æ	v	V	Æ	□		□	ö	Æ	Æ	□
Encrypted text string:	□ævVÆ□ □öÆÆ□'FÂ C# □6□6–□ □gVæWVÂ E□w□'□Â dcsC□#											

Encrypted text string:	□ævVÆ□ □öÆÆ□'FÂ C# □6□6–□ □gVæWVÂ E□w□'□Â dcsC□#											
Text string length:	48											
Number of character:	1	2	3	4	5	6	7	8	9	10	11	12
Encrypted data	□	æ	v	V	Æ	□		□	ö	Æ	Æ	□
Codes from text string:	20	230	118	86	198	22	2	5	246	198	198	22
Code in binary:	00010100	11100110	01110110	01010110	11000110	00010110	00000010	00000101	11110110	11000110	11000110	00010110
Flip nibble:	01000001	01101110	01100111	01100101	01101100	01100001	00100000	01010000	01101111	01101100	01101100	01100001
New code in decimal:	65	110	103	101	108	97	32	80	111	108	108	97
Encrypted data:	A	n	g	e	l	a		P	o	l	l	a
Original text string:	Angela Pollard, 42 Acacia Avenue, Tawara, F67412											

Testing	String from THS3	1 mark
	Generates Angela Pollard, 42 Acacia Avenue, Tawara, F67412	1 mark

Task 6

	P	Q	R
2	Average number of patients/department/month		
3			
4		Shoulder	Elbow
5	January	=ROUND(AVERAGEIF($A$6:$A$60,$P5,B$6:B$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P5,C$6:C$60),0)
6	February	=ROUND(AVERAGEIF($A$6:$A$60,$P6,B$6:B$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P6,C$6:C$60),0)
7	March	=ROUND(AVERAGEIF($A$6:$A$60,$P7,B$6:B$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P7,C$6:C$60),0)
8	April	=ROUND(AVERAGEIF($A$6:$A$60,$P8,B$6:B$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P8,C$6:C$60),0)
9	May	=ROUND(AVERAGEIF($A$6:$A$60,$P9,B$6:B$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P9,C$6:C$60),0)
10	June	=ROUND(AVERAGEIF($A$6:$A$60,$P10,B$6:B$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P10,C$6:C$60),0)
11	July	=ROUND(AVERAGEIF($A$6:$A$60,$P11,B$6:B$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P11,C$6:C$60),0)
12	August	=ROUND(AVERAGEIF($A$6:$A$60,$P12,B$6:B$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P12,C$6:C$60),0)
13	September	=ROUND(AVERAGEIF($A$6:$A$60,$P13,B$6:B$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P13,C$6:C$60),0)
14	October	=ROUND(AVERAGEIF($A$6:$A$60,$P14,B$6:B$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P14,C$6:C$60),0)
15	November	=ROUND(AVERAGEIF($A$6:$A$60,$P15,B$6:B$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P15,C$6:C$60),0)
16	December	=ROUND(AVERAGEIF($A$6:$A$60,$P16,B$6:B$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P16,C$6:C$60),0)

New table	Placing new table to right of existing data	1 mark
Jan shoulder	=ROUND(… ,0)	1 mark
	AVERAGEIF(…)	1 mark
	$A$6:$A$60	1 mark
	… Absolute reference	1 mark
	,$P5,	1 mark
	…Absolute reference on column P only	1 mark
	B$6:B$60	1 mark
	…Absolute reference on rows only	1 mark
	Both ranges extended to at least row 48	1 mark
	Correct formula – vertical replication	1 mark
	Correct formula – horizontal replication	1 mark
	Appropriate labelling / layout	1 mark

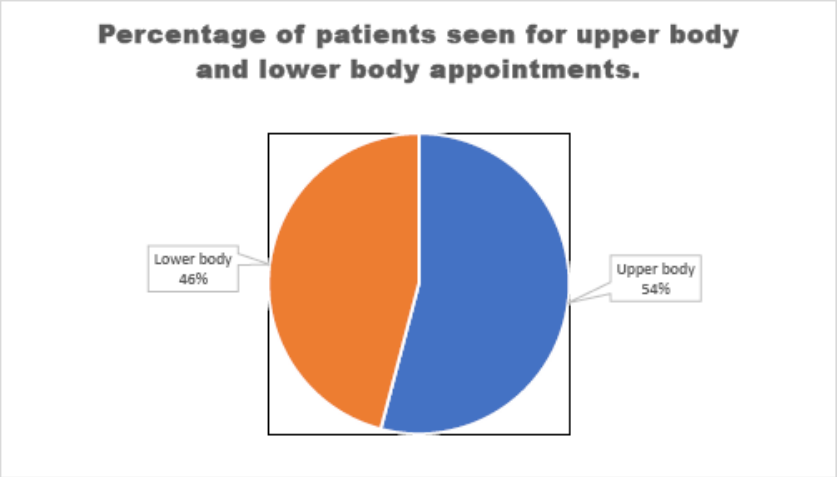
	S	T	U
2			
3			
4	Wrist	Hip	Knee
5	=ROUND(AVERAGEIF($A$6:$A$60,$P5,D$6:D$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P5,E$6:E$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P5,F$6:F$60),0)
6	=ROUND(AVERAGEIF($A$6:$A$60,$P6,D$6:D$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P6,E$6:E$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P6,F$6:F$60),0)
7	=ROUND(AVERAGEIF($A$6:$A$60,$P7,D$6:D$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P7,E$6:E$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P7,F$6:F$60),0)
8	=ROUND(AVERAGEIF($A$6:$A$60,$P8,D$6:D$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P8,E$6:E$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P8,F$6:F$60),0)
9	=ROUND(AVERAGEIF($A$6:$A$60,$P9,D$6:D$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P9,E$6:E$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P9,F$6:F$60),0)
10	=ROUND(AVERAGEIF($A$6:$A$60,$P10,D$6:D$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P10,E$6:E$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P10,F$6:F$60),0)
11	=ROUND(AVERAGEIF($A$6:$A$60,$P11,D$6:D$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P11,E$6:E$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P11,F$6:F$60),0)
12	=ROUND(AVERAGEIF($A$6:$A$60,$P12,D$6:D$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P12,E$6:E$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P12,F$6:F$60),0)
13	=ROUND(AVERAGEIF($A$6:$A$60,$P13,D$6:D$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P13,E$6:E$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P13,F$6:F$60),0)
14	=ROUND(AVERAGEIF($A$6:$A$60,$P14,D$6:D$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P14,E$6:E$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P14,F$6:F$60),0)
15	=ROUND(AVERAGEIF($A$6:$A$60,$P15,D$6:D$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P15,E$6:E$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P15,F$6:F$60),0)
16	=ROUND(AVERAGEIF($A$6:$A$60,$P16,D$6:D$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P16,E$6:E$60),0)	=ROUND(AVERAGEIF($A$6:$A$60,$P16,F$6:F$60),0)

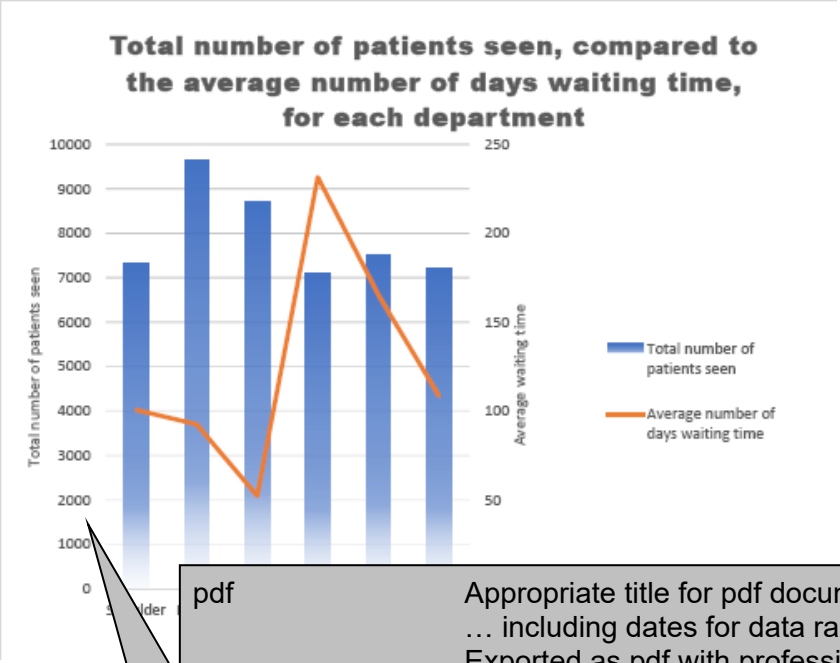
	V
2	
3	
4	Ankle
5	=ROUND(AVERAGEIF($A$6:$A$60,$P5,G$6:G$60),0)
6	=ROUND(AVERAGEIF($A$6:$A$60,$P6,G$6:G$60),0)
7	=ROUND(AVERAGEIF($A$6:$A$60,$P7,G$6:G$60),0)
8	=ROUND(AVERAGEIF($A$6:$A$60,$P8,G$6:G$60),0)
9	=ROUND(AVERAGEIF($A$6:$A$60,$P9,G$6:G$60),0)
10	=ROUND(AVERAGEIF($A$6:$A$60,$P10,G$6:G$60),0)
11	=ROUND(AVERAGEIF($A$6:$A$60,$P11,G$6:G$60),0)
12	=ROUND(AVERAGEIF($A$6:$A$60,$P12,G$6:G$60),0)
13	=ROUND(AVERAGEIF($A$6:$A$60,$P13,G$6:G$60),0)
14	=ROUND(AVERAGEIF($A$6:$A$60,$P14,G$6:G$60),0)
15	=ROUND(AVERAGEIF($A$6:$A$60,$P15,G$6:G$60),0)
16	=ROUND(AVERAGEIF($A$6:$A$60,$P16,G$6:G$60),0)

Tasks 7, 8 and 9

Tawara Health Service

Comparative data from September 2017 to February 2020 (inclusive)





pdf	Appropriate title for pdf document	1 mark
	… including dates for data ranges	1 mark
	Exported as pdf with professional appearance	1 mark
Pie chart	Appropriate chart type …	1 mark
	… 2 clearly defined segments	1 mark
	Lower body and upper body labels or legend	1 mark
	Lower 46% and Upper 54% values (calculations) correct	2 marks
	Appropriate chart title	1 mark
Comparative	Comparative bar chart & line graph 1 for each	2 marks
	Appropriate chart title	1 mark
Primary Y axis	Appropriate title	1 mark
	Axis maximum reset with appropriate minor scale	1 mark
	… to 10000	1 mark
	Correct data values for series	1 mark
X axis	Appropriate axis title	1 mark
	Appropriate axis labels	1 mark
Secondary axis	Added …	1 mark
	… with appropriate axis title	1 mark
	… appropriate axis maximum and scaling	1 mark
	Correct data values for series	1 mark

Task 10

Audio file

21voice.mp3	Clip speed x2	1 mark
	First 4.5 seconds removed	1 mark
	Reverb added to give echo effect	1 mark
	Exported as THSvoice_ZZ999_9999.mp3	1 mark
	… with medium quality =< 185 kbps	1 mark