Cambridge International AS & A Level

Cambridge Assessment International Education
Cambridge International Advanced Subsidiary and Advanced Level

INFORMATION TECHNOLOGY **9626/02**

Paper 2 Practical **March 2018**

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 2018 series for most Cambridge IGCSE®, Cambridge International A and AS Level components and some Cambridge O Level components.

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.

Evidence document

Evidence 1

One case error on terminal B	1 mark
…not critical as data would still be meaningful	1 mark
…although not professional	1 mark
Error in cell B4 says Terminal D not C	1 mark
…this is a critical error as incorrect data would be returned	1 mark

	A	B	C
1	Destination code	Destination	
2	A	Terminal A	
3	B	Terminal B	
4	C	Terminal C	
5	D	Terminal D	
6	F	Terminal F	
7	W	West terminal	
8	T	Tower	
9	X	Security headquarters	

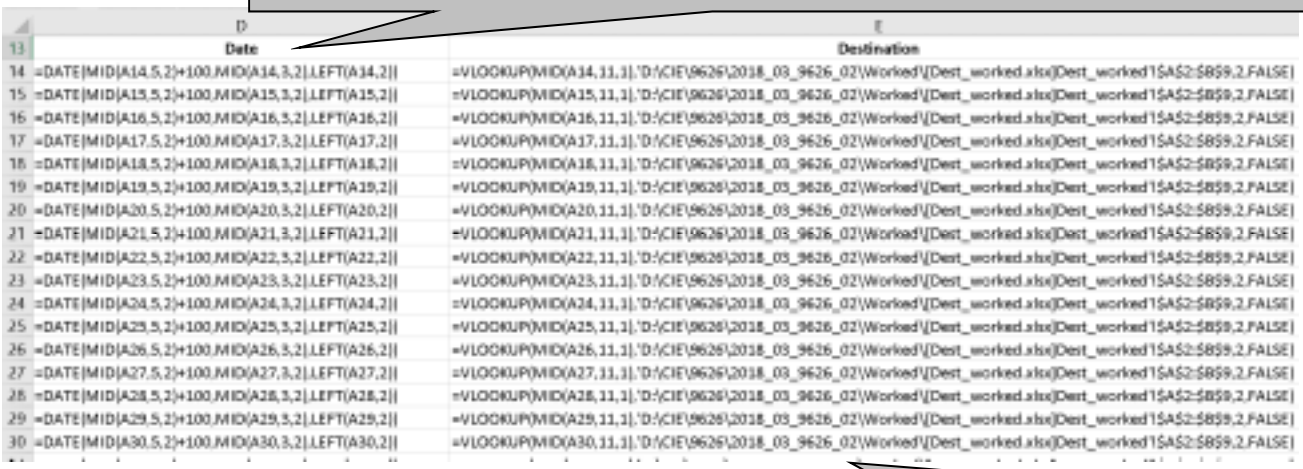
Both errors corrected 1 mark
case on Terminal and 2 x Terminal C

Function	AVERAGEIF( )	1 mark
	$E$14:$E$902	1 mark
	Absolute cell referencing or named range used	1 mark
	,A3	1 mark
	Relative cell reference	1 mark
	,$F$14:$F$902)	1 mark
	Absolute cell referencing or named range used	1 mark
Error trap	=IF( )	1 mark
	ISERROR( )	1 mark
	AVERAGEIF($E$14:$E$902,A3,$F$14:$F$902) allow f/t	1 mark
	," "	1 mark
	,AVERAGEIF($E$14:$E$902,A3,$F$14:$F$902) allow f/t	1 mark
	Replication correct for all Mean delay	1 mark

Evidence 2

	A	B
1	**Analysis by destination**	
2	**Destination**	**Mean delay**
3	Terminal A	=IF(ISERROR(AVERAGEIF($E$14:$E$902,A3,$F$14:$F$902)),0,AVERAGEIF($E$14:$E$902,A3,$F$14:$F$902))
4	Terminal B	=IF(ISERROR(AVERAGEIF($E$14:$E$902,A4,$F$14:$F$902)),0,AVERAGEIF($E$14:$E$902,A4,$F$14:$F$902))
5	Terminal C	=IF(ISERROR(AVERAGEIF($E$14:$E$902,A5,$F$14:$F$902)),0,AVERAGEIF($E$14:$E$902,A5,$F$14:$F$902))
6	Terminal D	=IF(ISERROR(AVERAGEIF($E$14:$E$902,A6,$F$14:$F$902)),0,AVERAGEIF($E$14:$E$902,A6,$F$14:$F$902))
7	Terminal F	=IF(ISERROR(AVERAGEIF($E$14:$E$902,A7,$F$14:$F$902)),0,AVERAGEIF($E$14:$E$902,A7,$F$14:$F$902))
8	Tower	=IF(ISERROR(AVERAGEIF($E$14:$E$902,A8,$F$14:$F$902)),0,AVERAGEIF($E$14:$E$902,A8,$F$14:$F$902))
9	West Terminal	=IF(ISERROR(AVERAGEIF($E$14:$E$902,A9,$F$14:$F$902)),0,AVERAGEIF($E$14:$E$902,A9,$F$14:$F$902))
10	Security Headquarters	=IF(ISERROR(AVERAGEIF($E$14:$E$902,A10,$F$14:$F$902)),0,AVERAGEIF($E$14:$E$902,A10,$F$14:$F$902))

Date	DATE ( )	1 mark
	MID( )	1 mark
	A14	1 mark
	,5	1 mark
	,2	1 mark
	+100	1 mark
	,MID( )	1 mark
	A14	1 mark
	,3	1 mark
	,2	1 mark
	,LEFT( )	1 mark
	A14,2	1 mark



	D	E
13	Date	Destination
14	=DATE(MID(A14,5,2)+100,MID(A14,3,2),LEFT(A14,2))	=VLOOKUP(MID(A14,11,1),'D:\CIE\9626\2018_03_9626_02\Worked\[Dest_worked.xlsx]Dest_worked1'$A$2:$B$9,2,FALSE)
15	=DATE(MID(A15,5,2)+100,MID(A15,3,2),LEFT(A15,2))	=VLOOKUP(MID(A15,11,1),'D:\CIE\9626\2018_03_9626_02\Worked\[Dest_worked.xlsx]Dest_worked1'$A$2:$B$9,2,FALSE)
16	=DATE(MID(A16,5,2)+100,MID(A16,3,2),LEFT(A16,2))	=VLOOKUP(MID(A16,11,1),'D:\CIE\9626\2018_03_9626_02\Worked\[Dest_worked.xlsx]Dest_worked1'$A$2:$B$9,2,FALSE)
17	=DATE(MID(A17,5,2)+100,MID(A17,3,2),LEFT(A17,2))	=VLOOKUP(MID(A17,11,1),'D:\CIE\9626\2018_03_9626_02\Worked\[Dest_worked.xlsx]Dest_worked1'$A$2:$B$9,2,FALSE)
18	=DATE(MID(A18,5,2)+100,MID(A18,3,2),LEFT(A18,2))	=VLOOKUP(MID(A18,11,1),'D:\CIE\9626\2018_03_9626_02\Worked\[Dest_worked.xlsx]Dest_worked1'$A$2:$B$9,2,FALSE)
19	=DATE(MID(A19,5,2)+100,MID(A19,3,2),LEFT(A19,2))	=VLOOKUP(MID(A19,11,1),'D:\CIE\9626\2018_03_9626_02\Worked\[Dest_worked.xlsx]Dest_worked1'$A$2:$B$9,2,FALSE)
20	=DATE(MID(A20,5,2)+100,MID(A20,3,2),LEFT(A20,2))	=VLOOKUP(MID(A20,11,1),'D:\CIE\9626\2018_03_9626_02\Worked\[Dest_worked.xlsx]Dest_worked1'$A$2:$B$9,2,FALSE)
21	=DATE(MID(A21,5,2)+100,MID(A21,3,2),LEFT(A21,2))	=VLOOKUP(MID(A21,11,1),'D:\CIE\9626\2018_03_9626_02\Worked\[Dest_worked.xlsx]Dest_worked1'$A$2:$B$9,2,FALSE)
22	=DATE(MID(A22,5,2)+100,MID(A22,3,2),LEFT(A22,2))	=VLOOKUP(MID(A22,11,1),'D:\CIE\9626\2018_03_9626_02\Worked\[Dest_worked.xlsx]Dest_worked1'$A$2:$B$9,2,FALSE)
23	=DATE(MID(A23,5,2)+100,MID(A23,3,2),LEFT(A23,2))	=VLOOKUP(MID(A23,11,1),'D:\CIE\9626\2018_03_9626_02\Worked\[Dest_worked.xlsx]Dest_worked1'$A$2:$B$9,2,FALSE)
24	=DATE(MID(A24,5,2)+100,MID(A24,3,2),LEFT(A24,2))	=VLOOKUP(MID(A24,11,1),'D:\CIE\9626\2018_03_9626_02\Worked\[Dest_worked.xlsx]Dest_worked1'$A$2:$B$9,2,FALSE)
25	=DATE(MID(A25,5,2)+100,MID(A25,3,2),LEFT(A25,2))	=VLOOKUP(MID(A25,11,1),'D:\CIE\9626\2018_03_9626_02\Worked\[Dest_worked.xlsx]Dest_worked1'$A$2:$B$9,2,FALSE)
26	=DATE(MID(A26,5,2)+100,MID(A26,3,2),LEFT(A26,2))	=VLOOKUP(MID(A26,11,1),'D:\CIE\9626\2018_03_9626_02\Worked\[Dest_worked.xlsx]Dest_worked1'$A$2:$B$9,2,FALSE)
27	=DATE(MID(A27,5,2)+100,MID(A27,3,2),LEFT(A27,2))	=VLOOKUP(MID(A27,11,1),'D:\CIE\9626\2018_03_9626_02\Worked\[Dest_worked.xlsx]Dest_worked1'$A$2:$B$9,2,FALSE)
28	=DATE(MID(A28,5,2)+100,MID(A28,3,2),LEFT(A28,2))	=VLOOKUP(MID(A28,11,1),'D:\CIE\9626\2018_03_9626_02\Worked\[Dest_worked.xlsx]Dest_worked1'$A$2:$B$9,2,FALSE)
29	=DATE(MID(A29,5,2)+100,MID(A29,3,2),LEFT(A29,2))	=VLOOKUP(MID(A29,11,1),'D:\CIE\9626\2018_03_9626_02\Worked\[Dest_worked.xlsx]Dest_worked1'$A$2:$B$9,2,FALSE)
30	=DATE(MID(A30,5,2)+100,MID(A30,3,2),LEFT(A30,2))	=VLOOKUP(MID(A30,11,1),'D:\CIE\9626\2018_03_9626_02\Worked\[Dest_worked.xlsx]Dest_worked1'$A$2:$B$9,2,FALSE)

Destination	=VLOOKUP( )		1 mark
	MID(A14		1 mark
	,11		1 mark
	,1)		1 mark
	,filename.xlsx!$A$2:$B$9	(file name will differ)	1 mark
	,2		1 mark
	,FALSE)		1 mark

Late	=IF( )	1 mark
	C14<B14	1 mark
	,0,	1 mark
	C14-B14	1 mark

Minutes	=F14	1 mark
	*1440	1 mark

	F	G	H	I
13	Late	Minutes	Passengers	Late >5
14	=IF(C14<B14,0,C14-B14)	=F14*1440	=VLOOKUP(1*MID(A14,9,1),'D:\CIE\9626\2018_03_9626_02\SP\[M18Seats.csv]M18Seats'!$A$2:$B$10,2,FALSE)	=IF(G14>5,"Y","")
15	=IF(C15<B15,0,C15-B15)	=F15*1440	=VLOOKUP(1*MID(A15,9,1),'D:\CIE\9626\2018_03_9626_02\SP\[M18Seats.csv]M18Seats'!$A$2:$B$10,2,FALSE)	=IF(G15>5,"Y","")
16	=IF(C16<B16,0,C16-B16)	=F16*1440	=VLOOKUP(1*MID(A16,9,1),'D:\CIE\9626\2018_03_9626_02\SP\[M18Seats.csv]M18Seats'!$A$2:$B$10,2,FALSE)	=IF(G16>5,"Y","")
17	=IF(C17<B17,0,C17-B17)	=F17*1440	=VLOOKUP(1*MID(A17,9,1),'D:\CIE\9626\2018_03_9626_02\SP\[M18Seats.csv]M18Seats'!$A$2:$B$10,2,FALSE)	=IF(G17>5,"Y","")
18	=IF(C18<B18,0,C18-B18)	=F18*1440	=VLOOKUP(1*MID(A18,9,1),'D:\CIE\9626\2018_03_9626_02\SP\[M18Seats.csv]M18Seats'!$A$2:$B$10,2,FALSE)	=IF(G18>5,"Y","")
19	=IF(C19<B19,0,C19-B19)	=F19*1440	=VLOOKUP(1*MID(A19,9,1),'D:\CIE\9626\2018_03_9626_02\SP\[M18Seats.csv]M18Seats'!$A$2:$B$10,2,FALSE)	=IF(G19>5,"Y","")
20	=IF(C20<B20,0,C20-B20)	=F20*1440	=VLOOKUP(1*MID(A20,9,1),'D:\CIE\9626\2018_03_9626_02\SP\[M18Seats.csv]M18Seats'!$A$2:$B$10,2,FALSE)	=IF(G20>5,"Y","")
21	=IF(C21<B21,0,C21-B21)	=F21*1440	=VLOOKUP(1*MID(A21,9,1),'D:\CIE\9626\2018_03_9626_02\SP\[M18Seats.csv]M18Seats'!$A$2:$B$10,2,FALSE)	=IF(G21>5,"Y","")
22	=IF(C22<B22,0,C22-B22)	=F22*1440	=VLOOKUP(1*MID(A22,9,1),'D:\CIE\9626\2018_03_9626_02\SP\[M18Seats.csv]M18Seats'!$A$2:$B$10,2,FALSE)	=IF(G22>5,"Y","")
23	=IF(C23<B23,0,C23-B23)	=F23*1440	=VLOOKUP(1*MID(A23,9,1),'D:\CIE\9626\2018_03_9626_02\SP\[M18Seats.csv]M18Seats'!$A$2:$B$10,2,FALSE)	=IF(G23>5,"Y","")
24	=IF(C24<B24,0,C24-B24)	=F24*1440	=VLOOKUP(1*MID(A24,9,1),'D:\CIE\9626\2018_03_9626_02\SP\[M18Seats.csv]M18Seats'!$A$2:$B$10,2,FALSE)	=IF(G24>5,"Y","")
25	=IF(C25<B25,0,C25-B25)	=F25*1440	=VLOOKUP(1*MID(A25,9,1),'D:\CIE\9626\2018_03_9626_02\SP\[M18Seats.csv]M18Seats'!$A$2:$B$10,2,FALSE)	=IF(G25>5,"Y","")
26	=IF(C26<B26,0,C26-B26)	=F26*1440	=VLOOKUP(1*MID(A26,9,1),'D:\CIE\9626\2018_03_9626_02\SP\[M18Seats.csv]M18Seats'!$A$2:$B$10,2,FALSE)	=IF(G26>5,"Y","")
27	=IF(C27<B27,0,C27-B27)	=F27*1440	=VLOOKUP(1*MID(A27,9,1),'D:\CIE\9626\2018_03_9626_02\SP\[M18Seats.csv]M18Seats'!$A$2:$B$10,2,FALSE)	=IF(G27>5,"Y","")
28	=IF(C28<B28,0,C28-B28)	=F28*1440	=VLOOKUP(1*MID(A28,9,1),'D:\CIE\9626\2018_03_9626_02\SP\[M18Seats.csv]M18Seats'!$A$2:$B$10,2,FALSE)	=IF(G28>5,"Y","")
29	=IF(C29<B29,0,C29-B29)	=F29*1440	=VLOOKUP(1*MID(A29,9,1),'D:\CIE\9626\2018_03_9626_02\SP\[M18Seats.csv]M18Seats'!$A$2:$B$10,2,FALSE)	=IF(G29>5,"Y","")
30	=IF(C30<B30,0,C30-B30)	=F30*1440	=VLOOKUP(1*MID(A30,9,1),'D:\CIE\9626\2018_03_9626_02\SP\[M18Seats.csv]M18Seats'!$A$2:$B$10,2,FALSE)	=IF(G30>5,"Y","")

Passengers

	=VLOOKUP( )	1 mark
	1* or alt operation for string to number	1 mark
	MID(A14,9,1)	1 mark
,	M18Seats.csv!$A$2:$B$10	1 mark
	,2	1 mark
	,FALSE	1 mark
	All formulae replicated	1 mark

Evidence 3

New row inserted between 1 and 2	1 mark
Correct text entry in cells A2 to B2 and fully visible	1 mark
Rows 1, 2, 12 and 13 only bold	1 mark
Rows 1, 2, 12 and 13 only centre aligned	1 mark
Date column formatted as dd/mm/yyyy	1 mark
Due, Arrived and Late columns all times in hh:mm format	1 mark
Mean delay column formatted as hh:mm:ss	1 mark
Minutes and Passengers formatted as Integer	1 mark

	A	B	C	D	E	F	G	H	I
1	**Analysis by destination**								
2	**Destination**	**Mean delay**							
3	Terminal A	00:03:28							
4	Terminal B	00:03:48							
5	Terminal C	00:03:21							
6	Terminal D	00:03:38							
7	Terminal F	00:03:26							
8	Tower	00:03:27							
9	West Terminal	00:03:13							
10	Security Headquarters	00:01:43							
11									
12	**Journeys**								
13	**Bus Code**	**Due**	**Arrived**	**Date**	**Destination**	**Late**	**Minutes**	**Passengers**	
14	1401182610X114	09:00	08:58	14/01/2018	Security headquarters	00:00	0	12	
15	1401182610T102	09:56	09:58	14/01/2018	Tower	00:02	2	12	
16	1401182610A114	09:11	09:20	14/01/2018	Terminal A	00:09	9	12	
17	1401182610A125	09:41	09:47	14/01/2018	Terminal A	00:06	6	12	
18	1401182610A135	11:27	11:31	14/01/2018	Terminal A	00:04	4	12	
19	1401182610A155	12:05	12:03	14/01/2018	Terminal A	00:00	0	12	

Evidence 4

Destination names as row headings	1 mark
Dates as column headings	1 mark
Sum as mathematical operation	1 mark
Correct sum values	1 mark
Correct totals for each date	1 mark
No totals for each destination	1 mark

Analysis of late buses for 14th to 20th January 2018

Total number of minutes late for each destination on each date.

	Date						
Destination	14/01/2018	15/01/2018	16/01/2018	17/01/2018	18/01/2018	19/01/2018	20/01/2018
Security Headquarters	0	7	4	0	1	0	0
Terminal A	47	61	35	73	54	74	68
Terminal B	27	42	34	51	23	42	47
Terminal C	52	57	57	29	60	58	63
Terminal D	45	48	75	44	70	63	62
Terminal F	199	203	210	156	212	214	179
West Terminal	33	26	57	29	13	27	40
Daily Total	403	444	472	382	433	478	459

Chart to show the average delay time to each destination

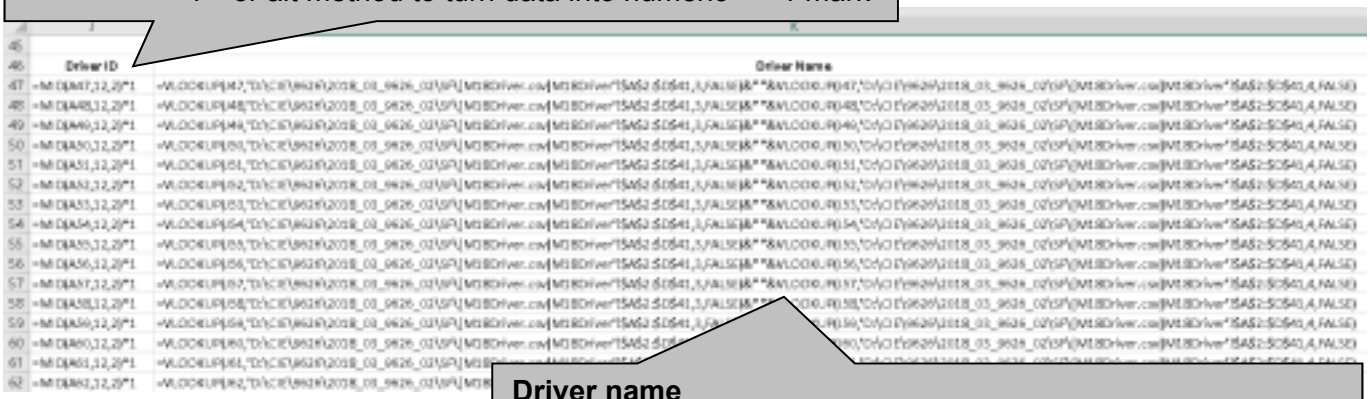
Report prepared by A Candidate 22999 9999

Appropriate chart type	1 mark
Appropriate chart title	1 mark
Appropriate axis titles	1 mark
Correct values	1 mark
Value axis intervals set to increments of 1 minute/ 30 seconds	1 mark

Appropriate report title	1 mark
Includes chart and pivot table	1 mark
Single portrait page with professional look	1 mark
Gridlines visible	1 mark
Name and Candidate details in the footer	1 mark
Exported as pdf	1 mark

Evidence 5

New worksheet created from the extract 1 mark
Driver ID =MID( ) 1 mark
A47,12,2) 1 mark
*1 or alt method to turn data into numeric 1 mark



Driver name
=VLOOKUP( ) 1 mark
J47, or alternative address for driver ID 1 mark
M18Driver.csv 1 mark
!$A$2:$D$41 1 mark
Absolute referencing 1 mark
,3 1 mark
,FALSE 1 mark
&" "& or alternative use of concatenate with space 1 mark
VLOOKUP(J46,M18Driver.csv!$A$2:$D$41,4,FALSE) 1 mark
Replication – Driver name calculated for each journey 1 mark

2nd table created in spreadsheet (not csv)… 1 mark
… with driver names set to left 1 mark

	A	B	C	D	E	F
1						
2						
6	75	Part Time	Karl	Roth	=C6&" "&D6	=COUNTIFS($K$47:$K$935,E6,$G$47:$G$935,0)
7	39	Full Time	Holly	Jenkinson	=C7&" "&D7	=COUNTIFS($K$47:$K$935,E7,$G$47:$G$935,0)
8	73	Part Time	Gunther	Schmitt	=C8&" "&D8	=COUNTIFS($K$47:$K$935,E8,$G$47:$G$935,0)
9	87	Trainee	Juan	Suarez	=C9&" "&D9	=COUNTIFS($K$47:$K$935,E9,$G$47:$G$935,0)
10	21	Full Time	Friederike	Trommler	=C10&" "&D10	=COUNTIFS($K$47:$K$935,E10,$G$47:$G$935,0)
11	9	Full Time	Olga	Schneider	=C11&" "&D11	=COUNTIFS($K$47:$K$935,E11,$G$47:$G$935,0)
12	16	Full Time	Pat	Pushing	=C12&" "&D12	=COUNTIFS($K$47:$K$935,E12,$G$47:$G$935,0)
13	17	Full Time	Louis	Claes	=C13&" "&D13	=COUNTIFS($K$47:$K$935,E13,$G$47:$G$935,0)
14	13	Full Time	Siddharth	Gad	=C14&" "&D14	=COUNTIFS($K$47:$K$935,E14,$G$47:$G$935,0)
15	14	Full Time	Holly	Chase	=C15&" "&D15	=COUNTIFS($K$47:$K$935,E15,$G$47:$G$935,0)
16	15	Full Time	Peter	Kelly	=C16&" "&D16	=COUNTIFS($K$47:$K$935,E16,$G$47:$G$935,0)
17	10	Full Time	Peter	Perfection	=C17&" "&D17	=COUNTIFS($K$47:$K$935,E17,$G$47:$G$935,0)
18	18	Full Time	Kratika	Dhiman	=C18&" "&D18	=COUNTIFS($K$47:$K$935,E18,$G$47:$G$935,0)
27	20	Full Time	Fatima	Hegde	=C27&" "&D27	=COUNTIFS($K$47:$K$935,E27,$G$47:$G$935,0)
31	19	Full Time	Lydia	Blenkinsop	=C31&" "&D31	=COUNTIFS($K$47:$K$935,E31,$G$47:$G$935,0)
33	12	Full Time	Elliot	Cotterill	=C33&" "&D33	=COUNTIFS($K$47:$K$935,E33,$G$47:$G$935,0)
40	11	Full Time	Tomas	Jacobs	=C40&" "&D40	=COUNTIFS($K$47:$K$935,E40,$G$47:$G$935,0)

=COUNTIFS( ) 1 mark
Two conditions in function 1 mark
$K$47:$K$934 or similar range depending on layout 1 mark
,E5 or similar reference to driver name 1 mark
,$G$47:$G$934 or similar range depending on layout 1 mark
,0 reference to 0 minutes late 1 mark

Appropriate title with candidate details	1 mark
Layout as shown including column alignments	1 mark
Data sorted into ascending order of on-time or early journeys	1 mark
Correct results	1 mark
Exported as Driver_ZZ999_9999.rtf	1 mark
The name of this week's best driver is: Tomas Jacobs	1 mark

Evidence 6

Drivers with fewest delays for this week

Driver	Number of journeys
Karl Roth	2
Holly Jenkinson	2
Gunther Schmitt	3
Juan Suarez	4
Friederike Trommler	5
Olga Schneider	13
Pat Pushing	16
Louis Claes	17
Siddharth Gad	17
Holly Chase	18
Peter Kelly	23
Peter Perfection	23
Kratika Dhiman	23
Fatima Hegde	25
Lydia Blenkinsop	25
Elliot Cotterill	26
Tomas Jacobs	31

The name of this week's best driver is: Tomas Jacobs

Evidence 7

A formula can contain a mathematical operator (example: F4*)	1 mark
A formula can contain a function (example: IF or RANDBETWEEN)	1 mark
A function has a predefined name (example: IF or RANDBETWEEN)	1 mark
A function is a predefined operation built in spreadsheet (example: IF or RANDBETWEEN)	1 mark
A function has parameters passed to it, formula does not (example: condition>60)	1 mark
A function can contain decision making (example: different responses from IF condition)	1 mark