Mark Scheme (Results)

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Pearson Edexcel International Advanced Level in Information and Communication Technology (WIT03) Paper 01

Unit 3: The Knowledge Worker

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General marking guidance

- All candidates must receive the same treatment. Examiners must mark the last candidate in exactly the same way as they mark the first.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than be penalised for omissions.
- Examiners should mark according to the mark scheme – not according to their perception of where the grade boundaries may lie.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification/indicative content will not be exhaustive.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, a senior examiner must be consulted before a mark is given.
- Crossed-out work should be marked unless the candidate has replaced it with an alternative response.

Activity		ANSWER		POSS. MARK	MAX
Activity 1		**Understanding the Situation**			
		Any 10 of			
	A1	2-week tour		1	
	A2	1 Tour per week for 9 weeks		1	
	A3	Start January		1	
	A4	Land & Take off at Auckland		1	
	A5	Land 13:30 Day 1		1	
	A6	Take off Day 13 19:00		1	
	A7	10 Attractions Can be listed (towns also be stated)		1	
	A8	Visit times 2 hours to 7 hours (can be listed)		1	
	A9	Coach 49 seats		1	
	A10	**Accommodation** Prices		1	
	A11	Journey times provided by coach company		1	
	A12	Some attractions in North Island some in South		1	
	A13	Ferry adds four hours fifty minutes to journey time		1	
	A14	Ferry travels between Picton and Wellington		1	
	A15	Each attraction should be visited once		1	
	A16	The more attractions visited the better		1	
	A17	Which attractions to visit and which order			
					10
		Any 3 of			
	B1	New roads could have been built		1	
	B2	Road works could be on the route		1	
	B3	Exceptionally heavy traffic (don't accept just traffic needs to be qualified)		1	
	B4	Missing the Ferry		1	
	B5	Plane/ Ferry may be cancelled because of the weather/delays		1	
	B6	Floods or other Natural Disasters.		1	
	B7	Timings based on averages		1	
	B8	Any other reasonable answer (Running out of fuel)		1	
					3
		Any 3 of			
	C1	Hotels	Accommodation prices	1	
	C2	Coach company	Journey times/coach capacity/number of coaches	1	
	C3	Airline company	Suitable aircraft /take-off and landing times, cost of flights,	1	

Activity			ANSWER		POSS. MARK	MAX
				seating capacity.		
	C4		Ferry Company	Travel time between islands	1	
	C5		Emma Babb	Visit times	1	
	C6		Koo; Kiwi Tours	Passenger numbers/attractions to be	1	
	C7		Heathrow and Auckland airports	Actual take-off and landing times	1	
	C8		New Zealand Tourist Board	Locations of attractions	1	
						3
			Total Marks for Activity			16

		Activity 2		Completing the model				
				Timings				

	D	E	F	G	H	I
7	**Attractions**	**Tiffany Dell**	**Mount Ted**	**Maze of Tunnels**	**Flight of the Imps**	**Living Forest**
8	**Tiffany Dell**	00:00:00	09:01:53	21:29:53	19:29:53	09:31:53
9	**Mount Ted**	09:01:53	00:00:00	23:21:29	21:21:29	11:56:53
10	**Maze of Tunnels**	21:29:53	23:21:29	00:00:00	03:16:29	14:51:53
11	**Flight of the Imps**	19:29:53	21:21:29	03:16:29	00:00:00	12:51:53
12	**Living Forest**	09:31:53	11:56:53	14:51:53	12:51:53	00:00:00
13	**Indigo Rapids**	06:41:53	12:26:53	19:06:53	17:06:53	06:41:53
14	**Salmon Run**	14:19:53	17:01:53	09:36:53	07:36:53	07:41:53
15	**Sandstone Rock**	19:09:53	21:01:29	07:31:53	04:56:53	12:31:53
16	**Slowhand Falls**	20:49:53	22:41:29	05:11:53	03:46:53	14:11:53
17	**Imp Place**	20:59:29	23:41:29	03:41:53	04:36:53	15:11:53
18	**No Choice**	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00
19	**Auckland**	22:44:29	01:26:29	05:36:53	06:31:53	16:56:53
20	**Picton**	09:29:53	12:11:53	14:26:53	12:26:53	02:51:53

	A1	Imported correctly (times can be shown in AM/PM format)	1	
		(Allow if seconds not shown in columns E:I)		
				1

	G	H
9	=IF(F9+I9<=TIME(19,0,0),E9,E9+1)	=IF(F9+I9<=TIME(19,0,0),F9,TIME(7,0,0))
10	=IF(F10+I10<=TIME(19,0,0),E10,E10+1)	=IF(F10+I10<=TIME(19,0,0),F10,TIME(7,0,0))
11	=IF(F11+I11<=TIME(19,0,0),E11,E11+1)	=IF(F11+I11<=TIME(19,0,0),F11,TIME(7,0,0))
12	=IF(F12+I12<=TIME(19,0,0),E12,E12+1)	=IF(F12+I12<=TIME(19,0,0),F12,TIME(7,0,0))
13	=IF(F13+I13<=TIME(19,0,0),E13,E13+1)	=IF(F13+I13<=TIME(19,0,0),F13,TIME(7,0,0))
14	=IF(F14+I14<=TIME(19,0,0),E14,E14+1)	=IF(F14+I14<=TIME(19,0,0),F14,TIME(7,0,0))
15	=IF(F15+I15<=TIME(19,0,0),E15,E15+1)	=IF(F15+I15<=TIME(19,0,0),F15,TIME(7,0,0))
16	=IF(F16+I16<=TIME(19,0,0),E16,E16+1)	=IF(F16+I16<=TIME(19,0,0),F16,TIME(7,0,0))
17	=IF(F17+I17<=TIME(19,0,0),E17,E17+1)	=IF(F17+I17<=TIME(19,0,0),F17,TIME(7,0,0))
18	=IF(F18+I18<=TIME(19,0,0),E18,E18+1)	=IF(F18+I18<=TIME(19,0,0),F18,TIME(7,0,0))

		Time Calculation 1		
		=IF(F9+I9<=TIME(19,0,0),E9,E9+1)		
		Alternative		
		=IF(F9+I9>TIME(19,0,0),E9+1,E9)		
	B1	Formula in G9 produces correct results in all circumstances	1	
	B2	True and false values are in correct order for the comparison.	1	
	B3	7pm (19:00) value correct	1	
	B4	Time function used	1	
		=IF(F9+I9<=TIME(19,0,0),F9,TIME(7,0,0))		
		Alternative		
		=IF(F9+I9>TIME(19,0,0),TIME(7,0,0),F9)		
	B5	Formula in H9 produces correct results in all circumstances	1	
	B6	True and false values are in correct order for the comparison.	1	

	B7	7am (07:00) and 7pm (19:00) values correct	**1**	
	B8	Time function used twice	**1**	
	B9	Both formulae replicated correctly	**1**	
				9

	I	J
9	=VLOOKUP(A9,Attractions!$A$7:$D$18,4,FALSE)	=H9+I9
10	=VLOOKUP(A10,Attractions!$A$7:$D$18,4,FALSE)	=H10+I10
11	=VLOOKUP(A11,Attractions!$A$7:$D$18,4,FALSE)	=H11+I11
12	=VLOOKUP(A12,Attractions!$A$7:$D$18,4,FALSE)	=H12+I12
13	=VLOOKUP(A13,Attractions!$A$7:$D$18,4,FALSE)	=H13+I13
14	=VLOOKUP(A14,Attractions!$A$7:$D$18,4,FALSE)	=H14+I14
15	=VLOOKUP(A15,Attractions!$A$7:$D$18,4,FALSE)	=H15+I15
16	=VLOOKUP(A16,Attractions!$A$7:$D$18,4,FALSE)	=H16+I16
17	=VLOOKUP(A17,Attractions!$A$7:$D$18,4,FALSE)	=H17+I17
18	=VLOOKUP(A18,Attractions!$A$7:$D$18,4,FALSE)	=H18+I18

		Time Calculation 2		
		=VLOOKUP(A9,Attractions!$A$7:$D$18,4,FALSE)		
		Alternative		
		=VLOOKUP(A9,Attractions!$A$7:$D$18,4,0)		
		=INDEX(Attractions!$D$7:$D$18,MATCH($A9:$A$18,Attractions!A		
	C1	Formula in I9 produces correct results in all circumstances	1	
	C2	Lookup value A9	1	
	C3	Absolute addressing on lookup table or named range	1	
	C4	False used	1	
		=H9+I9		
	C5	Formula in J9 produces correct results in all circumstances	1	
	C6	Both formulae replicated correctly	1	
				6

	L	M	N	O
9	=G9	=J9	=IF(J9+K9>TIME(19,0,0),0,K9)	=M9+N9
10	=G10	=J10	=IF(J10+K10>TIME(19,0,0),0,K10)	=M10+N10
11	=G11	=J11	=IF(J11+K11>TIME(19,0,0),0,K11)	=M11+N11
12	=G12	=J12	=IF(J12+K12>TIME(19,0,0),0,K12)	=M12+N12
13	=G13	=J13	=IF(J13+K13>TIME(19,0,0),0,K13)	=M13+N13
14	=G14	=J14	=IF(J14+K14>TIME(19,0,0),0,K14)	=M14+N14
15	=G15	=J15	=IF(J15+K15>TIME(19,0,0),0,K15)	=M15+N15
16	=G16	=J16	=IF(J16+K16>TIME(19,0,0),0,K16)	=M16+N16
17	=G17	=J17	=IF(J17+K17>TIME(19,0,0),0,K17)	=M17+N17
18	=G18	=J18	=IF(J18+K18>TIME(19,0,0),0,K18)	=M18+N18

		Time Calculation 3		
	D1	Formula in L9 produces correct results in all circumstances =G9	1	
	D2	Formula in M9 produces correct results in all circumstances =J9	1	
		=IF(J9+K9>TIME(19,0,0),0,K9)		
		Alternative		
		=IF(J9+K9<=TIME(19,0,0),K9,0)		
	D3	Formula in N9 produces correct results in all circumstances	1	
	D4	True and false values are in correct order for the comparison.	1	

D5	7pm (19:00) value correct	1	
D6	Time function used	1	
	=M9+N9		
D7	Formula in O9 produces correct results in all cases	1	
D8	SUM function not used in any formulae	1	
D9	All formulae replicated correctly (must have correct formulae)	1	
			9

Example of **one** possible solution

	B	C	D	E	F
17	Trip Chooser	Start Day	Start Time	Visit Count	
18	Heathrow	0	07:00:00	Tiffany Dell	1
19	Auckland	1	13:30:00	Mount Ted	1
20	Mount Ted	1	13:30:00	Maze of Tunnels	1
21	Tiffany Dell	2	07:00:00	Flight of the Imps	1
22	Indigo Rapids	3	06:41:53	Living Forest	1
23	Living Forest	4	07:00:00	Indigo Rapids	1
24	Flight of the Imps	5	07:00:00	Salmon Run	1
25	Sandstone Rock	6	04:56:53	Sandstone Rock	1
26	Slowhand Falls	7	07:00:00	Slowhand Falls	1
27	Imp Place	8	04:06:53	Imp Place	1
28	Maze of Tunnels	8	03:41:53		
29	Salmon Run	9	07:00:00		
30	Auckland	13	19:00:00		
31	Heathrow	16	17:00:00		

	Using the Model		
	IF N/A appears in any of the start days. No E marks		
	If visits are all on one day. . No E marks		
	If visits start days to attractions are (ignore Auckland and Heathrow) >13 No E marks		
E1	>4 days visits (excluding day 1 and day 13)	1	
E2	>9 days used for visits (excluding day 1 and day 13)	1	
E3	>6 attractions visited	1	
E4	>9 attractions visited	1	
	Only award marks below if all formulae are correct in B, C and		
E5	All attractions visited	1	
E6	Nowhere visited more than once	1	
E7	Last visit on Day 12	1	
E8	Bonus for no visit on Day 13	1	
			8
	Printouts		
	All printouts and no more in right order are required to be eligible for the following marks (No marks for screenshots)		
F1	Row and Column headings and Gridlines on (All 5 worksheets)	1	
F2	Correct rows and columns printed (All 5 worksheets)	1	
F3	Correct header & footer (All 5 worksheets)	1	

				3
		Total Marks for Activity		**36**

Activity 3

	A	D
7	Tiffany Dell	=B7*C7
8	Mount Ted	=B8*C8
9	Maze of Tunnels	=B9*C9
10	Flight of the Imps	=B10*C10
11	Living Forest	=B11*C11
12	Indigo Rapids	=B12*C12
13	Salmon Run	=B13*C13
14	Sandstone Rock	=B14*C14
15	Slowhand Falls	=B15*C15
16	Imp Place	=B16*C16
17	No Choice	=B17*C17
18	Auckland	=B18*C18

		Hotels		
		=B7*C7		
	A1	Formula correct and replicated.		**1**
				1

	A	G
7	Tiffany Dell	=E7*F7
8	Mount Ted	=E8*F8
9	Maze of Tunnels	=E9*F9
10	Flight of the Imps	=E10*F10
11	Living Forest	=E11*F11
12	Indigo Rapids	=E12*F12
13	Salmon Run	=E13*F13
14	Sandstone Rock	=E14*F14
15	Slowhand Falls	=E15*F15
16	Imp Place	=E16*F16
17	No Choice	=E17*F17
18	Auckland	=E18*F18

		Attractions		
		=E7*F7		
	B1	Formula correct and replicated.		**1**

		B	J
20	=MIN(B18:B19)		=MIN(J18:J19)
23	=INT(B20/B22)+1		=INT(J20/J22)+1
36	=B16+B25+B28+B31		=J16+J25+J28+J31

		CostsRevenue	
		=MIN(B18:B19)	
		Alternatives	
		(=IF(B19<B18,B19,B18)	
		=SMALL((B18:B19,1)	
	C1	In cell B20 MIN used or any alternative formula. e.g. IF used then condition and true and false values match	**1**
	C2	Formula would produce correct result	**1**
	C3	Correct formula replicated to J20	**1**
		=INT(B20/B22)+1	
		Alternatives	
		=ROUND((B20/B22),0)+1	
		=ROUNDUP((B20/B22),0)	
		=ROUNDDOWN((B20/B22),0)+1	
		=FLOOR((B20/B22),1)+1	
		=CEILING(B20/B22,1)	
		= IF(MOD(B20/B22) = 0, B20/B22, (B20/B22 +1)	
	C4	B20/B22	**1**
	C5	Rounded in some way to an integer	**1**
	C6	+1 used for INT, ROUND, ROUNDDOWN and FLOOR No +1 used in ROUNDUP	**1**
	C7	Fully working formula in J23 (must round the result correctly)	**1**
		=B16+B25+B28+B31	
	C8	All costs included	**1**
	C9	No Others	**1**
	C10	Correct formula in J36 SUM not used in any formula	**1**
			10

Example

	B	C	D	E	F	G	H	I	J	K	L
7		01-06-18	01-13-18	01-20-18	01-27-18	02-03-18	02-10-18	02-17-18	02-24-18	03-03-18	
8	Aircraft Make	Boeing	Airbus	Airbus	Airbus	Airbus	Airbus	Airbus	Boeing	Boeing	
9/10	Aircraft Type	707-300	A310-300	A340-200	A340-200	A340-200	A340-200	A310-300	707-300	707-300	
11/12	Price	£2,100.00	£2,100.00	£2,100.00	£2,100.00	£2,100.00	£2,100.00	£2,100.00	£2,100.00	£2,100.00	
13						Profit/Loss					
14	Costs	£309,127.68	£462,855.75	£668,402.22	£668,402.22	£668,402.22	£668,402.22	£462,855.75	£309,127.68	£301,256.32	
15	Revenue	£346,500.00	£518,700.00	£756,000.00	£756,000.00	£756,000.00	£756,000.00	£518,700.00	£346,500.00	£314,300.00	Total
16	Profit	£37,372.32	£55,844.25	£87,597.78	£87,597.78	£87,597.78	£87,597.78	£55,844.25	£37,372.32	£13,043.68	£549,867.95
17	Trip Chooser	Start Day	Start Time	Visit Count							
18	Heathrow	0	7:00:00 AM	Tiffany Dell	1						
19	Auckland	1	1:30:00 PM	Mount Ted	1						
20	Mount Ted	1	1:30:00 PM	Maze of Tunnels	1						
21	Tiffany Dell	2	7:00:00 AM	Flight of the Imps	1						
22	Indigo Rapids	3	6:41:53 AM	Living Forest	1						
23	Living Forest	4	7:00:00 AM	Indigo Rapids	1						
24	Flight of the Imps	5	7:00:00 AM	Salmon Run	1						
25	Sandstone Rock	6	4:56:53 AM	Sandstone Rock	1						
26	Slowhand Falls	7	7:00:00 AM	Slowhand Falls	1						
27	Imp Place	8	4:06:53 AM	Imp Place	1						
28	Maze of Tunnels	8	3:41:53 AM								
29	Salmon Run	9	7:00:00 AM								
30	Auckland	13	7:00:00 PM								
31	Heathrow	16	5:00:00 PM								

			Using the Model		
	D1		Overall profit made	**1**	
			To access these marks all formulae in activities 2 and 3 need to be correct		
	D2		Profit ≥£200,000<£400,000	**1**	
	D3		Profit ≥£400,000<£600,000	**1**	
	D4		Profit ≥£600,000<£800,000	**1**	
	D5		Profit ≥£800,000<£100,000,000	**1**	
	D6		Profit ≥£100,000,000	**1**	
					6
			Printouts		
			All four printouts and no more in right order are required to be eligible for the following marks		
	E1		Row and Column headings and Gridlines on (All 4 worksheets)	**1**	
	E2		Correct header & footer(All 4 worksheets)	**1**	
	E3		Correct rows and columns printed(All 4 worksheets)	**1**	
					3
			Total Marks for Activity		**21**

Activity 4		Report		

Indicative Colour
 Evaluation of the model

Level	Marks	
Level 0	0 marks	No rewardable content
Level 1	1-5	The candidate will have made a recommendation for the order of the trip, based on Activity 2 (usually including a screenshot) , but may not justify it. There may not be a recommendation of the cost. The evaluation of the model will be superficial there may be some suggestions for simple/basic improvements. Spelling, punctuation and the rules of grammar are used with limited accuracy.
Level 2	6-10	The candidate will have made a recommendation for the order of the trip and provided a basic justification, such as using the map to help decide the routes or choosing sites in North Island and moving to South Island . There will be a recommendation of the cost with a basic justification. There will be recommendations on aircraft types with basic justifications. There will be appropriate recommendations and they would be justified on cost alone. The evaluation of the model will highlight some deficiencies in the model and make suggestions for improvements. Spelling, punctuation and the rules of grammar are used with some accuracy.
Level 3	11-15	The candidate will have made a recommendation for the order of the trip and fully justified it. There will be a recommendation of the cost justified by the profit and effective use of the aircraft. There will be appropriate recommendations and they will be fully justified. The evaluation of the model will highlight a range of deficiencies in the model and there will be a range of suggestions for improvements. Spelling, punctuation and the rules of grammar used with considerable accuracy.
		Total Marks for Activity

(continued table right columns)

		Total Marks for Activity		**15**

SWW				
	S1	Authenticating Work (All WP pages have task number, Name,	1	
	S2	Appropriate Structure (Pages in correct order & Folder assembled	1	
		Total for SWW		**2**
		Total for Paper		**90**