



Mark Scheme (Results)

Summer 2019

Pearson Edexcel Applied International Advanced
Level

In Information Communication Technology (ICT)
(WIT03) Paper 01

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- 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 may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Activity		ANSWER	POSS. MARK	MAX
Activity 1		Points from the scenario relevant to the model		
		Any 13 of		
(a)	A1	Paid no import tax until 1997 / Paid import tax after 1997	1	
	A2	Import tax now <u>4.7%</u> for small appliances, <u>6.3%</u> for medium appliances and <u>8.4%</u> for large appliances	1	
	A3	Appliances are in three categories, <u>Small (S), Medium (M), or Large (L)</u>	1	
	A4	Small appliance maximum weight of 10 kg Medium appliance maximum weight of 20 kg Large appliances have a weight over 20 kg	1	
	A5	Small appliance maximum volume 0.04 m ³ Medium appliance maximum volume 0.4 m ³ Large appliances have a volume greater than 0.4 m ³	1	
	A6	Small and medium appliances can be sent by air or sea, <u>the preferred method is air</u>	1	
	A7	Large appliances can only be sent by sea in <u>standard or economy containers</u>	1	
	A8	A standard container has a usable volume of 33 m ³ and for an economy container the usable volume is 67 m ³	1	
	A9	A container can be used solely by a customer, or the space can be shared between customers.	1	
	A10	Maximum of one aircraft used for shipment.	1	
	A11	HKA offer three ranges of kitchen appliances (bronze, silver and gold)	1	
	A12	Ratio of bronze: silver: gold appliances = 1:3:2	1	
	A13	Small and medium appliances only sent in batches of 5	1	
	A14	Medium cargo aircraft are <u>can carry up to 55000 kg.</u>	1	
	A15	Large cargo aircraft are <u>can carry up to 110000 kg.</u>		
	A16	Medium transporters are cheaper for loads up to 20000 kg	1	
	A17	Air transported loads measured in weight (kg), sea transported loads measured in volume (m ³)	1	
	A18	Any other relevant answer	1	
				Max 13

		Data Source	Data		
(b)	B1	Hong Kong Special Administrative region	Import tax rates	1	
	B2	Hong Kong Custom and Excise	Appliance categories	1	
	B3	Asian Trans Global Shipping Company	Container data and shipping times	1	
	B4	Hunt Kitchen Appliances	Appliance ranges	1	
	B5	Air Hong Kong Direct	Air travel times	1	
	B6	Lucy	Air shipping rates	1	
					Max 4
					17

Activity 2		AirShippingRates																																																										
(a)																																																												
<table><tr><td></td><td>A</td><td>B</td><td>C</td></tr><tr><td>8</td><td colspan="3">Medium Transporter</td></tr><tr><td>9</td><td>Min Weight in kg</td><td>Max Weight in kg</td><td>Charge per kg</td></tr><tr><td>10</td><td>0</td><td>5000</td><td>\$3.08</td></tr><tr><td>11</td><td>5001</td><td>10000</td><td>\$3.06</td></tr><tr><td>12</td><td>10001</td><td>15000</td><td>\$3.03</td></tr><tr><td>13</td><td>15001</td><td>20000</td><td>\$2.99</td></tr><tr><td>14</td><td>20001</td><td>25000</td><td>\$2.90</td></tr><tr><td>15</td><td>25001</td><td>30000</td><td>\$2.74</td></tr><tr><td>16</td><td>30001</td><td>35000</td><td>\$2.51</td></tr><tr><td>17</td><td>35001</td><td>40000</td><td>\$2.37</td></tr><tr><td>18</td><td>40001</td><td>45000</td><td>\$2.08</td></tr><tr><td>19</td><td>45001</td><td>50000</td><td>\$1.90</td></tr><tr><td>20</td><td>50001</td><td>55000</td><td>\$1.78</td></tr></table>						A	B	C	8	Medium Transporter			9	Min Weight in kg	Max Weight in kg	Charge per kg	10	0	5000	\$3.08	11	5001	10000	\$3.06	12	10001	15000	\$3.03	13	15001	20000	\$2.99	14	20001	25000	\$2.90	15	25001	30000	\$2.74	16	30001	35000	\$2.51	17	35001	40000	\$2.37	18	40001	45000	\$2.08	19	45001	50000	\$1.90	20	50001	55000	\$1.78
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20	50001	55000	\$1.78																																																									
	A1	All values entered correctly	1																																																									
				1																																																								

(b)	AppliancesShipped2018				
	F	J	K	L	M
8	Silver Range	Gold Range			
9	Quantity	Quantity	Total Weight in kg	Total Volume in m³	Value
10	=3*B10	=2*B10	=AppliancesRange!L11*SJ10	=AppliancesRange!M11*SJ10	=AppliancesRange!N11*SJ10
11	=3*B11	=2*B11	=AppliancesRange!L12*SJ11	=AppliancesRange!M12*SJ11	=AppliancesRange!N12*SJ11
12	=3*B12	=2*B12	=AppliancesRange!L13*SJ12	=AppliancesRange!M13*SJ12	=AppliancesRange!N13*SJ12
13	=3*B13	=2*B13	=AppliancesRange!L14*SJ13	=AppliancesRange!M14*SJ13	=AppliancesRange!N14*SJ13
14	=3*B14	=2*B14	=AppliancesRange!L15*SJ14	=AppliancesRange!M15*SJ14	=AppliancesRange!N15*SJ14
15	=3*B15	=2*B15	=AppliancesRange!L16*SJ15	=AppliancesRange!M16*SJ15	=AppliancesRange!N16*SJ15
16	=3*B16	=2*B16	=AppliancesRange!L17*SJ16	=AppliancesRange!M17*SJ16	=AppliancesRange!N17*SJ16
17	=3*B17	=2*B17	=AppliancesRange!L18*SJ17	=AppliancesRange!M18*SJ17	=AppliancesRange!N18*SJ17
18	=3*B18	=2*B18	=AppliancesRange!L19*SJ18	=AppliancesRange!M19*SJ18	=AppliancesRange!N19*SJ18
19	=3*B19	=2*B19	=AppliancesRange!L20*SJ19	=AppliancesRange!M20*SJ19	=AppliancesRange!N20*SJ19
20	=3*B20	=2*B20	=AppliancesRange!L21*SJ20	=AppliancesRange!M21*SJ20	=AppliancesRange!N21*SJ20
		=3*B10			
	B1	Formula in F10 produces correct result			1
		=2*B10			
	B2	Formula in J10 produces correct result			1
	B3	Sum not used in F10 or J10			1
	B4	Correct formulae in <u>F10</u> and <u>J10</u> replicated to F20 and J20			1
		=AppliancesRange!L11*SJ10 Or =VLOOKUP(\$A10,AppliancesRange!\$K\$11:\$N\$21,2,0)*\$J10 Or =VLOOKUP(\$A10,Jan2018!\$A\$11:\$S\$21,15,0)*J10 Or =Jan2018!O11			
	B5	Correct formula in K10 (Formula must work correctly. Absolute addressing is not necessary for mark.)			1
		=AppliancesRange!M11*\$J10 Or =VLOOKUP(\$A10,AppliancesRange!\$K\$11:\$N\$21,3,0)*\$J10 Or =VLOOKUP(\$A10,Jan2018!\$A\$11:\$S\$21,16,0)*J10 Or =Jan2018!P11			
	B6	Correct formula in L10 (Formula must work correctly. Absolute addressing is not necessary for mark.)			1
		=AppliancesRange!N11*\$J10 Or =VLOOKUP(\$A10,AppliancesRange!\$K\$11:\$N\$21,4,0)*\$J10 Or =VLOOKUP(\$A10,Jan2018!\$A\$11:\$S\$21,17,0)*J10 Or =Jan2018!Q11			

	B7	Correct formula in M10 (Formulae must work correctly. Absolute addressing is not necessary for mark.)	1	
	B8	All correct formulae replicated to K20, L20 and M20 (if VLOOKUP used or similar need to see absolute addressing on range)	1	
				8

(c)

		ShipmentMethod				
		F	J			
9	Silver					
10	Appliance	Preferred shipment method				
11	Microwave	=IF(AppliancesRange!J11="L", \$F\$25, \$G\$25)				
12	Cooker	=IF(AppliancesRange!J12="L", \$F\$25, \$G\$25)				
13	Fridge Freezer	=IF(AppliancesRange!J13="L", \$F\$25, \$G\$25)				
14	Dishwasher	=IF(AppliancesRange!J14="L", \$F\$25, \$G\$25)				
15	Kettle	=IF(AppliancesRange!J15="L", \$F\$25, \$G\$25)				
16	Toaster	=IF(AppliancesRange!J16="L", \$F\$25, \$G\$25)				
17	Hob	=IF(AppliancesRange!J17="L", \$F\$25, \$G\$25)				
18	Blender	=IF(AppliancesRange!J18="L", \$F\$25, \$G\$25)				
19	Food Mixer	=IF(AppliancesRange!J19="L", \$F\$25, \$G\$25)				
20	Fryer	=IF(AppliancesRange!J20="L", \$F\$25, \$G\$25)				
21	Coffee Machine	=IF(AppliancesRange!J21="L", \$F\$25, \$G\$25)				
		=IF(AppliancesRange!J11="L", \$F\$25, \$G\$25) Or =IF(AppliancesRange!J11="L", "sea", "air") Or =IF(G11>Import!\$C\$18, \$F\$25, IF(H11>Import!\$D\$18, \$F\$25, \$G\$25)) Or =IF(G11>20, "sea", "air") Or =IF(G11>20, \$F\$25, \$G\$25) Or =IF(OR(G11<=20, H11<=0.4), \$G\$25, \$F\$25)				
	C1	Formula in J11 produces correct result	1			
	C2	Formula in J11 refers to AppliancesRange J11 or to G11	1			
	C3	"sea", "air" correct way around (\$F\$25, \$G\$25)	1			
	C4	Formula correctly replicated to J21 (can be incorrect formula)	1			
				4		

(d)		Jan2018		

	D2	Criteria range F11:F21	1	
	D3	Criteria B7 or "air"	1	
	D4	Sum range C11:C21	1	
		=SUMIF(F11:F21,C7,D11:D21)		
	D5	Formula in cell D25 produces correct result	1	
	D6	Criteria C7 or "sea"	1	
		=SUM(E11:E21)		
	D7	Formula in cell E22 produces correct result	1	
				7

(e)		ShipmentTotals2018		
		Medium Transporter Medium Transporter Large Transporter Total Cost Shipment Method Air Large Transporter Sea Economy Container Total Cost Shipment Method Air Medium Transporter Sea Economy Container Total Cost Shipment Method Air Medium Transporter Sea Standard Container Total Cost Shipment Method Air Medium Transporter Sea Economy Container Total Cost		
(i)	E1	Selector displayed for shipment method	1	
	E2	One drop-down menu correctly shown (Medium Transporter, Large Transporter OR Standard Container and Economy Container)	1	

		Accept typed solutions for E3–E6																						
	E3	January 2018 shows correct options (Large Transporter, Economy Container)	1																					
	E4	April 2018 shows correct options (Medium Transporter, Economy Container)	1																					
	E5	July 2018 shows correct options (Medium Transporter, Standard Container)	1																					
	E6	September 2018 shows correct options (Medium Transporter and Economy Container)	1																					
<table><tr><td></td><td>P</td><td>Q</td><td>R</td></tr><tr><td>17</td><td>Total Value</td><td>Import Tax Rate %</td><td>Import Tax</td></tr><tr><td>18</td><td>=M18+N18+O18</td><td>=Import!\$D\$12</td><td>=P18* Q18/100</td></tr><tr><td>19</td><td>=M19+N19+O19</td><td>=Import!\$E\$12</td><td>=P19* Q19/100</td></tr><tr><td>20</td><td>=M20+N20+O20</td><td>=Import!\$F\$12</td><td>=P20* Q20/100</td></tr></table>						P	Q	R	17	Total Value	Import Tax Rate %	Import Tax	18	=M18+N18+O18	=Import!\$D\$12	=P18* Q18/100	19	=M19+N19+O19	=Import!\$E\$12	=P19* Q19/100	20	=M20+N20+O20	=Import!\$F\$12	=P20* Q20/100
	P	Q	R																					
17	Total Value	Import Tax Rate %	Import Tax																					
18	=M18+N18+O18	=Import!\$D\$12	=P18* Q18/100																					
19	=M19+N19+O19	=Import!\$E\$12	=P19* Q19/100																					
20	=M20+N20+O20	=Import!\$F\$12	=P20* Q20/100																					
(ii)		=M18+N18+O18 =M19+N19+O19 =M20+N20+O20 (Accept correct use of SUM)																						
	E7	Formula in P18 produces correct result	1																					
(iii)		=P18*Q18/100																						
	E8	Formula in cell R18 produces correct result	1																					
	E9	Correct formula replicated to R20	1																					
				9																				
(f)		Printouts																						
		All printouts and no more in right order are required to be eligible for the following marks																						
	F1	Row and column headings and gridlines (All worksheets, excluding screen shot)	1																					
	F2	Correct rows and columns printed (All worksheets, excluding screen shot)	1																					
	F3	Correct header and footer (All worksheets and WP document)	1																					
				3																				
		Total Marks for Activity 2		32																				

Activity 3		AppliancesCosts																																																																			
		<table><tr><td></td><td>C</td><td>E</td><td>I</td></tr><tr><td>8</td><td colspan="2">Bronze Range</td><td>Silver Range</td></tr><tr><td>9</td><td>Appliance</td><td>Minimum Production Cost</td><td>Maximum Production Cost</td></tr><tr><td>10</td><td>Microwave</td><td>=D10*0.01</td><td>=G10*0.21</td></tr><tr><td>11</td><td>Cooker</td><td>=D11*0.01</td><td>=G11*0.21</td></tr><tr><td>12</td><td>Fridge Freezer</td><td>=D12*0.01</td><td>=G12*0.21</td></tr><tr><td>13</td><td>Dishwasher</td><td>=D13*0.01</td><td>=G13*0.21</td></tr><tr><td>14</td><td>Kettle</td><td>=D14*0.01</td><td>=G14*0.21</td></tr><tr><td>15</td><td>Toaster</td><td>=D15*0.01</td><td>=G15*0.21</td></tr><tr><td>16</td><td>Hob</td><td>=D16*0.01</td><td>=G16*0.21</td></tr><tr><td>17</td><td>Blender</td><td>=D17*0.01</td><td>=G17*0.21</td></tr><tr><td>18</td><td>Food Mixer</td><td>=D18*0.01</td><td>=G18*0.21</td></tr><tr><td>19</td><td>Fryer</td><td>=D19*0.01</td><td>=G19*0.21</td></tr><tr><td>20</td><td>Coffee Machine</td><td>=D20*0.01</td><td>=G20*0.21</td></tr></table>			C	E	I	8	Bronze Range		Silver Range	9	Appliance	Minimum Production Cost	Maximum Production Cost	10	Microwave	=D10*0.01	=G10*0.21	11	Cooker	=D11*0.01	=G11*0.21	12	Fridge Freezer	=D12*0.01	=G12*0.21	13	Dishwasher	=D13*0.01	=G13*0.21	14	Kettle	=D14*0.01	=G14*0.21	15	Toaster	=D15*0.01	=G15*0.21	16	Hob	=D16*0.01	=G16*0.21	17	Blender	=D17*0.01	=G17*0.21	18	Food Mixer	=D18*0.01	=G18*0.21	19	Fryer	=D19*0.01	=G19*0.21	20	Coffee Machine	=D20*0.01	=G20*0.21										
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		= D10*0.01, =D10/100, =D10*1%																																																																			
	A1	Formula in E10 produces correct result		1																																																																	
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		= G10*0.21, =G10*21/100, =G10*21%																																																																			
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19	=B19*AppliancesCosts!E20	877.8	=AppliancesCosts!I20*E19																																																																		
23	Overall Production Cost																																																																				
24	Minimum	Maximum																																																																			
25	=C20+F20+J20	=D20+G20+J20																																																																			
		=B9*AppliancesCosts!E10 Or =VLOOKUP(A9,AppliancesCosts!\$C\$10:\$L\$20,3,0)*B9																																																																			
(i)	B1	Formula in C9 produces correct result		1																																																																	
		=AppliancesCosts!I10*E9 Or =VLOOKUP(A9,AppliancesCosts!\$C\$10:\$L\$20,7,0)*E9																																																																			
	B2	Formula in G9 produces correct result		1																																																																	

	B3	Correct formulae replicated correctly to C19 and G19.	1	
(ii)		=C20+F20+I20, =D20+G20+J20 (accept use of SUM)		
	B4	Formulae in C25 and D25 produce correct results	1	
				4
		StaffCosts2018		

	A	C	E	G	H
9	Staff Jobs	Minimum Total Salaries	Maximum Total Salaries		
10	General Managers	=HLOOKUP(A10,StaffSalaries2018!\$A\$9:\$I\$11,3,0)*B10	=HLOOKUP(A10,StaffSalaries2018!\$A\$9:\$I\$11,2,0)*D10		
11	Managers	=HLOOKUP(A11,StaffSalaries2018!\$A\$9:\$I\$11,3,0)*B11	=HLOOKUP(A11,StaffSalaries2018!\$A\$9:\$I\$11,2,0)*D11		
12	Section Leaders	=HLOOKUP(A12,StaffSalaries2018!\$A\$9:\$I\$11,3,0)*B12	=HLOOKUP(A12,StaffSalaries2018!\$A\$9:\$I\$11,2,0)*D12		
13	Research and Development Staff	=HLOOKUP(A13,StaffSalaries2018!\$A\$9:\$I\$11,3,0)*B13	=HLOOKUP(A13,StaffSalaries2018!\$A\$9:\$I\$11,2,0)*D13		
14	Office Staff	=HLOOKUP(A14,StaffSalaries2018!\$A\$9:\$I\$11,3,0)*B14	=HLOOKUP(A14,StaffSalaries2018!\$A\$9:\$I\$11,2,0)*D14		
15	Production staff	=HLOOKUP(A15,StaffSalaries2018!\$A\$9:\$I\$11,3,0)*B15	=HLOOKUP(A15,StaffSalaries2018!\$A\$9:\$I\$11,2,0)*D15	Difference	=E18-C18
16	Logistics staff	=HLOOKUP(A16,StaffSalaries2018!\$A\$9:\$I\$11,3,0)*B16	=HLOOKUP(A16,StaffSalaries2018!\$A\$9:\$I\$11,2,0)*D16	Percentage Difference	=(E18-C18)/C18*100
17	Short term staff	=HLOOKUP(A17,StaffSalaries2018!\$A\$9:\$I\$11,3,0)*B17	=HLOOKUP(A17,StaffSalaries2018!\$A\$9:\$I\$11,2,0)*D17		

		=HLOOKUP(A10,StaffSalaries2018!\$A\$9:\$I\$11,3,0)*B10 Or =HLOOKUP(A10,StaffSalaries2018!\$B\$9:\$I\$11,3,0)*B10 If formula =B10*StaffSalaries2018!B11 used can get C1 and C5		
(i)	C1	Formula in C10 produces correct result (absolute addressing not required for this mark)	1	
	C2	Correct range used (accept named ranges) and correct offset	1	
	C3	Absolute addressing on correct range and zero or false used	1	
	C4	A10 used as lookup value and *B10	1	
	C5	Correct Formula replicated to C17	1	
		=HLOOKUP(A10,StaffSalaries2018!\$A\$9:\$I\$11,2,0)*D10 If formula =D10*StaffSalaries2018!B10 used can get C6 and C7		
	C6	Formula in E10 produces correct result (absolute addressing not required for this mark)	1	
	C7	Correct formula correctly replicated to E17	1	
(ii)		=E18-C18		
	C8	Formula in H15 produces correct result =(E18-C18)/C18*100	1	
	C9	Formula in H16 produces correct result	1	

	A	B	C	D	E	F	G	H
9	Staff Jobs	Minimum Staff Numbers	Minimum Total Salaries	Maximum Staff Numbers	Maximum Total Salaries			
10	General Managers	1	\$60,000.00	2	\$200,000.00			
11	Managers	2	\$70,000.00	3	\$165,000.00			
12	Section Leaders	4	\$96,000.00	5	\$200,000.00			
13	Research and Development Staff	4	\$104,000.00	9	\$342,000.00			
14	Office Staff	20	\$340,000.00	23	\$575,000.00			
15	Production staff	41	\$902,000.00	42	\$1,008,000.00			
16	Logistics staff	20	\$500,000.00	29	\$754,000.00			
17	Short term staff	11	\$15,400.00	19	\$95,000.00			
						Difference		\$1,251,600.00
						Percentage Difference		60.0

(iii)	C10	Percentage difference >= 59.6 <59.7 or >60.3<=60.4	1	
	C11	Percentage difference >= 59.7 <59.8 or >60.2<=60.3	1	

	C12	Percentage difference ≥ 59.8 < 59.9 or > 60.1 ≤ 60.2	1	
	C13	Percentage difference ≥ 59.9 and ≤ 60.1	1	
				13

		Projected Profit 2019						
	A	B	C	D	E	F		
9		Income			Projected Minimum Expenditure	Projected Maximum Expenditure		
10	Sales	\$4,227,840.00						
11			Production Costs		\$42,278.20	\$887,846.40		
12			Shipping Costs		\$149,076.58	\$149,076.58		
13			Import Tax		\$276,428.69	\$276,428.69		
14			Staff Costs		\$3,339,000.00	\$2,087,400.00		
15			Total		\$3,806,783.47	\$3,400,751.67		
16								
17					Minimum Profit	Maximum Profit		
18					\$421,056.54	\$827,088.34		
19					Minimum % Profit	Maximum % Profit		
					11.1	24.3		
D1	E13 value greater than F13 value					1		
D2	Maximum % profit in F19 greater than 20% and less than 30%					1		
							2	
	All printouts and no more in right order							
E1	Row and column headings and gridlines on							
	Correct header and footer							
	Correct rows and columns printed					1		
							1	
	Total Marks for Activity 3						24	

Activity 4		Report		
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Indicative content

Business report

Recommendations with justifications of decisions

Reasons the recommendations might be flawed /evaluation of the model

Adaptation and improvements 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 benefits of moving production to Hong Kong, based on Activity 3, but they may not justify it. They may not have made a recommendation of accepting or rejecting the loan. 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 benefits of moving production to Hong Kong, based on Activity 3, which includes the effect of taxes, shipment and staffing and a decision on accepting or rejecting the loan offer. They will provide a basic justification, such as comparing the data with the effect on profits with no import tax to the cost of the loan. 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 benefits of moving production to Hong Kong, based on Activity 3, which includes the effect of taxes, shipment, and staffing and a decision on accepting or rejecting the loan offer. There will be clear justification with examples of the effect of no import tax, the ability to pay the loan, projected profits and staffing implications. The evaluation of the model will highlight a range of deficiencies, such as the model does not incorporate shipping times. Spelling, punctuation and the rules of grammar used with considerable accuracy.
		Total Marks for Activity 4
		5 E 5 C 5 A
		15

SWW				
	S1	Authenticating Work (All WP pages have task number, name, centre number).	1	E
	S2	Appropriate Structure (Pages in correct order and folder assembled correctly)	1	E
		Total for SWW		2
		Total for Paper		90

