Candidate B

Task	Expected response	Additional guidance	Marks available	Marks awarded	Commentary on allocation of marks	
1	**Database design and development**					
1a	**1 mark** for identifying all four: • Name (or forename/surname) • Address (or street, town) • Postcode • Telephone number **1 mark** for identifying: • Task **1 mark** for identifying all four: • Job ID • Staff ID • Date • Time	Attribute names need not match the form in analysis stage.	3	**3**	The candidate was awarded **1 mark** for identifying all four customer attributes (name, address, postcode and tel no). Note that the attribute names do not have to match those given on the Customer Job Details form. The candidate was awarded **1 mark** for identifying Task. The candidate was awarded **1 mark** for identifying the "Office Use" information (job ID, staff ID, date and time) would also have to be stored.	Analysis (3)

1b	**1 mark** for completion of each box:
	• staffID — Primary Key
	• staffID — Y
	• surname — text
	• topSkill — Lawn, Hedge, Weeds
	• custRating —
	  ✓ >= 1 and <=10
	  ✓ >=1 <=10
	  ✓ 1-10
	  ✓ 1,2,3,4,5,6,7,8,9,10
		Restricted choice must list every choice
		
		Range must include limits
			5	**5**	The candidate is awarded **5 marks** for correctly completing the data dictionary.	Design (5)

Task	Expected response	Additional guidance	Marks available	Marks awarded	Commentary on allocation of marks
1	**Database design and development**				
1c	**1 mark** each for printed evidence of each bullet point: • 9 fields created with correct ✓ primary key (jobID) ✓ data types ✓ sizes • presence checks correctly assigned • range check correctly implemented on jobTime (>=09:00 and <=18:00) • restricted choice on task, limited to correct three options • linked table enforcing referential integrity	• accept application specific field types staffID size either 5 or 255 • all required except phoneNo • validation rule may change according to field type implemented • implemented as either drop-down list or formula • diagram or relationship properties (one staff to many jobs)	5	2	The candidate is awarded **2 marks** for supplying appropriate evidence that the range check and restricted choice validations have been implemented. The candidate has only provided evidence of the two fields with validation. As such they cannot be awarded a mark for "9 fields created with correct primary key, data types and sizes" or "presence checks correctly assigned". Note that while the candidate's screenshot shows a relationship between the PK and FK it also shows that the relationship has not been enforced.

Implementation (7)

Task	Expected response	Additional guidance	Marks available	Marks awarded	Commentary on allocation of marks
1	**Database design and development**				

1d	**1 mark** each for implementing:
	
	• UPDATE Staff
	  SET address = "99 Willow Way, Falkirk, FA87 6FE"
	• WHERE StaffID = "DS021";
		Do not award a mark if SQL created by application:
		
		MS Access example
		
		`UPDATE Staff SET Staff.address = "99 Willow Way, Falkirk, FA87 6FE"`
		
		`WHERE(((Staff.[staffID])="DS021"))`
			2	0	The candidate has been awarded **0 marks** as they have failed to implement SQL.
					
					Note that where it is certain that the candidate has used a facility provided by an application package to engineer SQL statements marks will not be awarded. This candidate has used a MS Access query design to create the UPDATE statement.

Task	Expected response		Additional guidance	Marks available	Marks awarded	Commentary on allocation of marks	
2	**Software design and development**						
2a	Array used to store readings			1	**1**	The candidate was awarded **1 mark** as they use an array to store the signal readings. Note that the candidate declares an array of strings and not reals. The mark was still awarded.	Implementation (15)
	Fixed loop repeating 5 times (to enter readings)			1	**1**	The candidate was awarded **1 mark** as a single input line is repeated 5 times within a fixed loop.	
	Input Validation	conditional loop used		1	**0**	The candidate was awarded **0 marks** as they have not implemented input validation.	
		correct condition for valid data	Until: reading >= 0 AND reading <= 100 or While: reading < 0 OR reading > 100	1	**0**	The candidate was awarded **0 marks** as they have not implemented input validation.	
		input of reading	Award 1 mark if not implemented within input validation loop	1	**1**	The candidate was awarded **1 mark** for their input statement. Note that 1 mark out of 4 is awarded for an input with no input validation.	
		error message		1	**0**	The candidate was awarded **0 marks** as they have not implemented input validation.	

Round reading to 0 decimal places		1	**0**	The candidate was awarded **0 marks** as they have not rounded their user input. Note that this would have been difficult as the signal reading is stored as a string.
1 mark for correct conditions **1 mark** for using rounded reading	Strong: Reading > 80 Poor: Reading < 30 (Medium: Reading>=30 and <=80)	2	**0**	The candidate was awarded **0 marks** as none of the conditions are correct and they have not used rounded reading in the comparisons. Note that the candidate could still have gained a mark here despite comparing a string and an integer as Visual Basic, with "Option Strict Off", would automatically convert the string to a real number.
Single variable used to store signal pattern	Variable names may differ in code	1	**0**	The candidate was awarded **0 marks** as the signal letters are stored in a second array.
Pattern concatenated		1	**1**	The candidate was awarded **1 mark** as they concatenate their array element to produce the pattern.
Suitable message and signal pattern output		1	**0**	The candidate was awarded **0 marks** as they have not displayed a message. Note that in VB it would be acceptable to display the message as a label object.
Five (rounded) readings displayed as output with suitable messages within a loop	For example: For loop = 1 to 5 Print "Reading", loop, "is", reading(loop) End loop	1	**0**	The candidate was awarded **0 marks** as the signal readings as displayed using five separate print statements.

	Matches design: • same top level sequence (loop 5, display, loop 5) • nested if statements (or elseif) with correct structure used to determine signal strength letter		2	0	The candidate was awarded **0 marks** as their code does not match the overarching design of the program.
2b	The test table completed to produce the required signal pattern output (MPSPS) for **1 mark**	Test table should contain real or integer values within the following ranges: Reading 1: >=30 and <=80 Reading 2: <30 Reading 3: >80 Reading 4: <30 Reading 5: >80 Input must be numeric. Do not accept % symbols.	1	1	The candidate was awarded **1 mark** as their test data should result in the correct signal pattern.
	Printed evidence of one successful run of the test table data		1	0	The candidate was awarded **0 marks** as they have not shown evidence of inputs as required by the task.

2c	Completion of extreme test data for upper and lower limits of each signal strength **1 mark** for each pair:
	 • poor:
	   ✓ 0
	   ✓ 29
	 • medium:
	   ✓ 30
	   ✓ 80
	 • strong:
	   ✓ 81
	   ✓ 100
		Candidates may write values in any order.
		
		 Accept any values that round to the values given.
		
		 Check rounding according to language used.
			3	2	The candidate was awarded **2 marks** for identifying extreme test data for medium and strong signals.
					
					 The candidate could have been awarded a further mark if they replaced the value 31 with 29.
					
					 Note that the order of the six extreme values was not important when this task was marked.

Testing (5)

| 2d | Evaluation of the following:

Fitness for purpose (1 mark)
• comparison of their solution (code and testing) with program analysis and expected output

Efficiency (1 mark)
• efficient use of at least one coding constructs

Robustness (1 mark)
• how robust the program is, including if it copes with unexpected inputs

Readability (2 marks)
• two comments on the readability of the candidate's own code | All evaluations must contain an element of evaluation rather than simple statements of terms. For example "I have used white space to highlight structures in my program" not "I have used white space".

Efficiency answers may refer to:
• loops used instead of five individual inputs or outputs
• single variable only required for signal pattern rather than array of characters
• complex selection structure could have been used in place of separate "ifs"
• array used instead of five variables for readings | 5 | 4 | The candidate was awarded **1 mark** for "fitness for purpose" as their two answers together (one written and one typed) discuss that they have met the requirements of the programming tasks.

The candidate was awarded 1 **mark** for "efficiency" as their code describes the use of an array in preference to separate variables.

The candidate was awarded **0 marks** for "robustness" as their answer does not refer to their own code which has no input validation.

The candidate was awarded **2 mark** for "readability of code" as their answer refers to white space and meaningful variables names. The code shows use of white space between structures and meaningful variables. | Evaluation (5) |

Task	Expected response	Additional guidance	Marks available	Marks awarded	Commentary on allocation of marks	
3	**Web design and development**					
3a	Functional requirements could include the following for **1 mark** each: • display text about Grieve Crafts • display the product graphics (photographs) • display text about the product being built • link takes user to external information (about source wood)		2	**1**	The candidate was awarded **1 mark** for identifying that the page should take the user "via hyperlink" to another site, Wikipedia. The candidate's second answer did not refer to an action that should be carried out by the code.	Analysis (2)
3b	Using the printout of the HTML file, confirm the following for **1 mark** each: • all text and graphics content added, in the correct order, within structural head, title, body, elements: p, h1, h2, div etc and organised into three sections • link from words "wooden pallets", in Our Best Seller section, to external Wikipedia page about pallets • link to external CSS file added in section	Text and graphics checklist: • Company Name • About Our Company, heading & paragraph • Our Best Seller, heading & paragraph • Three photos • Three descriptions for photos	8	**3**	The candidate was awarded **1 mark** for "all text and graphics content added". The candidate was awarded **0 marks** for "link from words wooden pallets" as the position of the link did not match the design. The candidate was awarded **1 mark** for successfully "linking to an external CSS file".	Implementation (8)

Task	Expected response	Additional guidance	Marks available	Marks awarded	Commentary on allocation of marks
3	**Web design and development**				
	Using the printout of the CSS file and associated HTML elements to confirm the following for **1 mark** each: • Company Name styled correctly (alignment may be in CSS or HTML) • Both sub-headings styled correctly using the same CSS rules • Paragraphs and photo descriptions styled correctly using a single rule, applied four (or five) times • Three graphic sizes correct (CSS or HTML) • Syntactically correct colours applied in CSS to: three page sections page background	Helvetica, 24pt (24px), white, align right Helvetica, 18pt (18px) (black not required as default) Helvetica, 12pt (12px) (black not required as default) Width 200px, height 200px Page background • Lightblue • #ADD8E6 • Any light blue colour Top section • Darkred • #8B0000 • Any dark red colour Middle and bottom sections • Pink • #FFC0CB • Any pink colour			The candidate is awarded **0 marks** as the styling of the company name is only partially completed (font-size: 24pt in internal stylesheet, Helvetica in external stylesheet). The candidate is awarded **0 marks** as the styling of the sub-headings is only partially completed (font-size: 18pt in internal stylesheet, Helvetica in external stylesheet). The candidate is awarded **0 marks** as the styling of the paragraphs is only partially completed (font-size: 12pt in internal stylesheet, Helvetica in external stylesheet). The candidate is awarded **1 mark** for adding a width and height of 200 pixels to all three image elements. The candidate is awarded **0 marks** for styling the section and background colours. Although the colours are correctly assigned only the background colour has been externally styled as required by the task.