Detailed marking instructions for each question

Question			Generic scheme	Illustrative scheme	Max mark
1.			**Ans: 9600 (mm)** •[1] Strategy: know to calculate minimum length of brick x 50 •[2] Process/communication: answer	•[1] $(194 - 2) \times 50$ •[2] 9600	**2**
Notes: **1.** Any attempted unit conversions must be correct for award of •[2]					
Commonly Observed Responses : **1.** For $(194\times50)-2$ leading to 9698. award 1/2 ×✓ **2.** For $(194+2)\times50$ leading to 9800. award 1/2 ×✓ **3.** For 194×50 leading to 9700. award 0/2 ×× *page 05*					

Question			Generic scheme	Illustrative scheme	Max mark
2.	(a)		**Ans: (£)2600** • [1] Strategy: know to calculate 2·5% of £6000 • [2] Process: calculate 2·5% of £6000 • [3] Strategy/process: add commission to basic salary	 • [1] evidence • [2] 150 • [3] 2600	**3**

Notes:

1. Accept $6000 \div 2 \cdot 5$ as evidence of knowing to calculate 2·5%.

2. •[3] is only available for adding commission to £2450.

Commonly Observed Responses:

1. For 2·5% of £9000=£225 leading to a final answer of £2675.
award 2/3 ×✓✓

2. For 2·5% of £2450=£61·25 leading to a final answer of £2511·25.
award 2/3 ×✓✓

3. For 2·5% of £3000=£75 leading to a final answer of £2525.
award 2/3 ×✓✓

4. For 2·5% of £(9000-2450)=£163·75 leading to a final answer of £2613·75.
award 2/3 ×✓✓

Question			Generic scheme	Illustrative scheme	Max mark
2.	(b)		**Ans: (£)1870·39** • [1] Strategy: attempt to calculate gross pay – total deductions • [2] Process: calculate net pay	 • [1] evidence • [2] 1870·39	**2**

Notes:

1. For reference: total deductions = 729·61

Commonly Observed Responses:

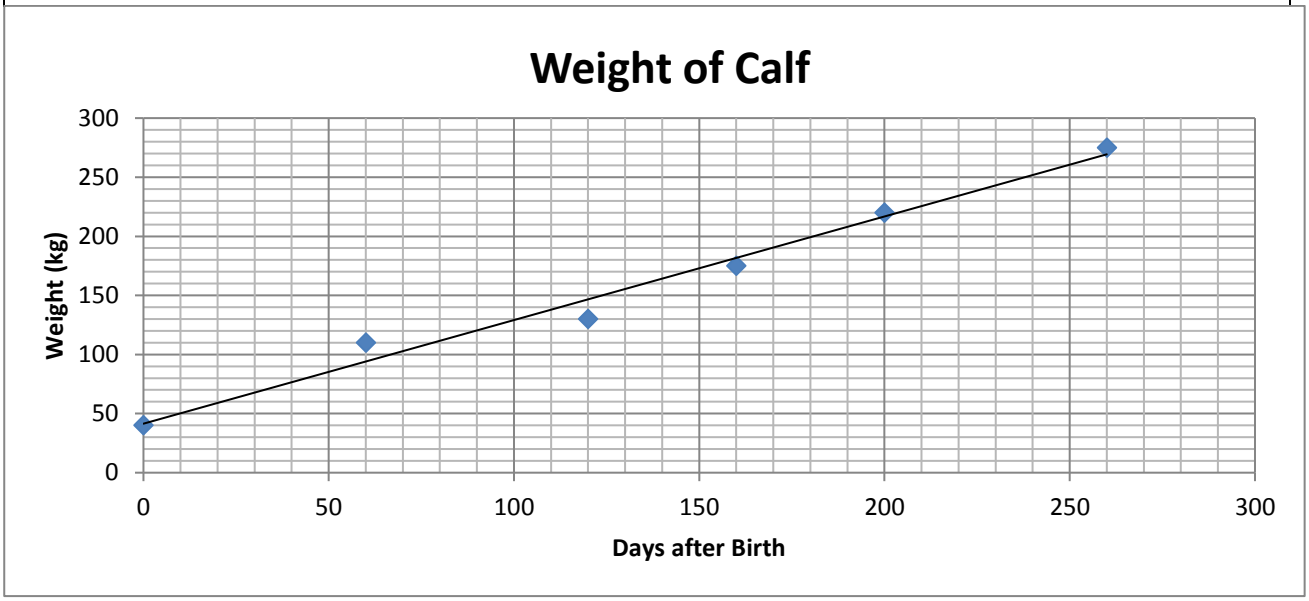
1. For candidates who calculate a gross salary in part (a) of £2675 leading to a net pay of £1945·39. award 2/2 ✓✓

2. For candidates who calculate a gross salary in part (a) of £2511·25 leading to a net pay of £1781·64. award 2/2 ✓✓

3. For candidates who calculate a gross salary in part (a) of £2525 leading to a net pay of £1795·39. award 2/2 ✓✓

4. For candidates who calculate a gross salary in part (a) of £2613·75 leading to a net pay of £1884·14. award 2/2 ✓✓

Question			Generic scheme	Illustrative scheme	Max mark
3.	(a)		**Ans: Points plotted correctly** •[1] Communication: 4 points correct •[2] Communication: all 6 points correct	D 0 60 120 160 200 260 W 40 110 130 175 220 275	**2**
Notes: **1.** If candidate inverts **all** coordinates award 1/2					
Commonly Observed Responses:					
	(b)		**Ans: Line of best fit** •[1] Strategy: consistent line of best fit	•[1]	**1**
Notes:					
Commonly Observed Responses:					
	(c)		**Ans: (days)** •[1] Communication: answer consistent with line of best fit	•[1]	**1**
Notes: **1.** Accept answer rounded to the nearest 10 days.					
Commonly Observed Responses:					



Question			Generic scheme	Illustrative scheme	Max mark
4.			**Ans: No, supported by working.** •[1] Strategy: know how to calculate gradient •[2] Process: know how to compare gradients of new trail and blue trail •[3] Strategy/ communication: consider the blue gradient and consistent conclusion	•[1] 1·6/8 •[2] 4/20 (3/20 does not need to be explicitly stated) or 8/40 and 6/40 or 0·2 and 0·15 or equivalent •[3] No, supported by working	**3**

Notes:

1. For 1·6/8 followed by "No" with no other working. award 1/3

2. For 1·6/8 =5 followed by blue gradient 6·666… leading to "Yes". award 2/3

3. •[2] can only be awarded for two gradients with the same denominator, or the same numerator, or for two decimal fractions.

4. •[3] can only be awarded where two gradients with the same denominator, or the same numerator, or for two decimal fractions have been compared.

5. **Special case**: If a candidate's answer for new trail is a top heavy fraction only •[3] is available. This mark is only available if reference is made to a gradient from the table.

Commonly Observed Responses:

Question			Generic scheme	Illustrative scheme	Max mark
5.	(a)		**Ans: Bands D and A** •[1] Communication: state bands required	•[1] $10 \times 14 + 1 = 141$, she needs bands D and A	**1**

Notes:

1. Bands D and A without working — award 1/1
2. For 140 lbs leading to bands D and A — award 1/1
3. D and A circled on the table — award 1/1
4. Accept 10 x 14 =141 bands D and A (treat as bad form) — award 1/1
5. For any incorrect calculation leading to bands D and A — award 0/1

Commonly Observed Responses:

	(b)		**Ans: Shop 2** •[1] Process: calculate cost for shop 1 •[2] Process: calculate cost for shop 2 •[3] Communication: conclusion consistent with working	•[1] 49·50 •[2] 45·48 •[3] Shop 2	**3**
			Alternative Strategy: •[1] Process: calculate discount for 1 shop •[2] Process: calculate discount for other two shops •[3] Communication: conclusion consistent with working	•[1] 26·30 or 30·32 or 27·81 •[2] remaining two •[3] Shop 2	

Notes:

1. •[3] can only be awarded for comparing 3 costs or 3 discounts.

Commonly Observed Responses:

1. Shop 1 £49·50, Shop 2 £30·32, Shop 3 £47·99 leading to conclusion Shop 2 — award 1/3 ✓××

Question			Generic scheme	Illustrative scheme	Max mark
6.			**Ans: (£)6 286 500** •[1] Strategy/process: calculate one(£1)share •[2] Process: calculate total number of shares •[3] Process: calculate total amount	 •[1] 2 794 000 ÷ 4 = 698 500 •[2] 2·50 + 2·00 + 4·00 + 0·50 = 9 •[3] 9 × 698 500 = 6 286 500	**3**
			Alternative Strategy 1 •[1] Strategy/process: calculate one (50p) share •[2] Process: calculate total number of shares •[3] Process: calculate total amount	 •[1] 2 794 000 ÷ 8 = 349 250 •[2] 1 + 4 + 5 + 8 = 18 •[3] 18 × 349 250 = 6 286 500	
			Alternative Strategy 2 •[1] Strategy/process: calculate the amount for any teacher other than Mr Young •[2] Process: calculate the amount for another teacher •[3] Process: calculate amount for final teacher and total amount	 •[1] Miss Smith 1 397 000 or Mr Jones 349 250 or Mr Ross 1 746 250 •[2] either of remaining two •[3] 1 397 000 + 349 250 + 1 746 250 + 2 794 000 = 6 286 500	

Notes:

1. •[2] can be implied by subsequent working.

Commonly Observed Responses:

1. For 2 7940 00 ÷ 9 = 310444·44
310444·44 × 4 = 1241777·76. award 2/3 ×✓✓

Question			Generic scheme	Illustrative scheme	Max mark
7.	(a)		**Ans: 20 (cm^2)** •[1] Strategy: know how to calculate composite area •[2] Process: calculate area	 •[1] Evidence of any valid strategy •[2] eg $24-4=20$	**2**
Notes: **1.** Accept $8+2\times2=20$ as bad form.					
Commonly Observed Responses: **1.** For $2\times8+1\times4+1\times4=24$. **award 1/2 ✓×** **2.** For calculation of two rectangles eg $4\times3+4\times2=20$ **award 1/2 ×✓**					
	(b)		**Ans: (£)30** •[1] Process: calculate the number of badges per pack •[2] Process: calculate the cost of enamel for 1 badge •[3] Process: calculate selling price	 •[1] 180 ÷ 20 = 9 •[2] 90 ÷9 = 10 •[3] 10 + 3 + 17 = 30	**3**
			Alternative Strategy: •[1] Process: calculate the number of badges per pack •[2] Process: calculate the total cost of 9 badges •[3] Process: calculate selling price	 •[1] 180 ÷ 20 = 9 •[2] $9\times3 + 9\times17 + 90=270$ •[3] 270 ÷ 9 = 30	
Notes: 1. If the cost of the enamel is not considered then only •[1] is available. 2. In the alternative strategy, if the candidates answer to •[2] is not divisible by 9, •[3] is only available for an answer rounded or truncated to 2 decimal places.					
Commonly Observed Responses:					

Question	Generic scheme	Illustrative scheme	Max mark
8.	**Ans:** $\frac{12}{100}\left(=\frac{3}{25}\right)$		**3**
	• [1] Strategy: evidence of identifying the blood groups that B+ can help	• [1] eg AB+ and B+	
	• [2] Communication: interpret stacked bar chart	• [2] 3 people AB+ and 9 people B+	
	• [3] Process: calculate fraction	• [3] $\frac{3+9}{100}=\frac{12}{100}\left(=\frac{3}{25}\right)$	

Notes:

1. Correct answer with no working. award 3/3

2. Accept 0·12, 12% or any fraction equivalent to $\frac{12}{100}$

3. For any answer **other** than $\frac{12}{100}, \frac{62}{100}, \frac{15}{100}, \frac{9}{100}$ & $\frac{3}{100}$, with no working award 0/3

Commonly Observed Responses:

1. For an answer of $\frac{62}{100}$ (B+ row is taken from the chart instead of the B+ column) (with no working) award 2/3 ×✓✓

2. For an answer of $\frac{15}{100}$ (the complete bars for AB and B are taken from the chart) (with no working) award 2/3 ×✓✓

3. For an answer of $\frac{9}{100}$ (B+ only) award 1/3

4. For an answer of $\frac{3}{100}$ (AB+ only) award 1/3

Question			Generic scheme	Illustrative scheme	Max mark
9.	(a)		**Ans: 27·42 (cm)**		**4**
			•[1] Strategy: correct substitution in Pythagoras' Theorem	•[1] eg $10^2 - 6^2$	
			•[2] Process: calculate the missing side	•[2] $x = 8$	
			•[3] Process: calculate length of the semi-circle	•[3] 3·14 x 6 ÷ 2 = 9·42	
			•[4] Process: calculate the perimeter of the shape	•[4] 10 + 8 + 9·42 = 27·42	

Notes:

1. •[1] and •[2] are available for correct answer without working (Pythagorean triple).

2. •[1] cannot be awarded if candidate writes $6^2 - 10^2$.

3. •[2] can be awarded if candidate writes $6^2 - 10^2$ leading to x = 8.

4. •[4] is only available for adding 10 to two previously **calculated lengths**.

5. •[4] is not available if the candidate states that they are adding calculated **areas**.

Commonly Observed Responses:

1. For 3·14 x 6+10+ 8 leading to a final answer of 36·84. award 3/4 ✓✓×✓

2. For $\frac{1}{2}$ x 3·14 x 3^2 +10+ 8 leading to a final answer of 32·31. award 3/4 ✓✓×✓

3. For 3·14 x 3^2 +10+ 8 leading to a final answer of 46·26. award 3/4 ✓✓×✓

4. For $\frac{1}{2}$ x 3·14 x 6 +10 + 8 + 6 + 6 leading to a final answer of 39·42 award 3/4 ✓✓✓×

Question			Generic scheme	Illustrative scheme	Max mark
9.	(b)		**Ans: 13·56 (cm^2)** •[1] Strategy: know how to calculate area of rectangular strip •[2] Process: calculate the area of the strip	•[1] evidence •[2] $(27{\cdot}42 - 0{\cdot}3) \times \frac{1}{2} = 13{\cdot}56$	**2**

Notes:

1. •[1] is available for evidence of subtracting 0·3 and then multiplying by 0·5

Commonly Observed Responses:

1. For $27{\cdot}42 \times \frac{1}{2} = 13{\cdot}71$ award 1/2 ×✓

2. For $0{\cdot}3 \times 0{\cdot}5 = 0{\cdot}15$ award 0/2 ××

[END OF MARKING INSTRUCTIONS]