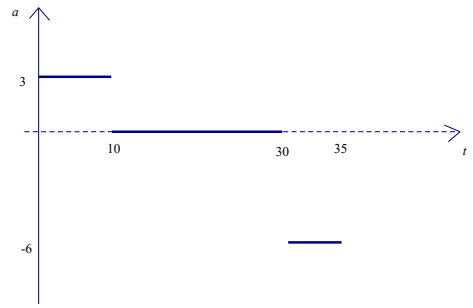
Question Number	Scheme	Marks	Notes
6a i	Acceleration = $3\left(\text{ms}^{-2}\right)$	B1	
ii	Decceleration = $6\left(\text{ms}^{-2}\right)$	B1	Must be positive (–) 6 is B0
		[2]	
6b		B1ft B1ft	Give BOD for the middle section. Any 2 horizontal lines correct 3 correct horizontal lines and no other solid lines, and 10, 30, 35, 3, -6 marked. Condone dotted vertical lines N.B. Follow their accelerations for one +ve and one -ve.
		[2]	
6c	Distance travelled $=\frac{(20+35)}{2}\times 30$ Or = $\frac{1}{2}\times 10\times 30+(20\times 30)+\frac{1}{2}\times 5\times 30$ Or $=\frac{1}{2}\times 3\times 10^2+(20\times 30)+\frac{1}{2}\times 6\times 5^2$	M1	Or equivalent method for total distance Unsimplified expression must be correct for this mark
	= 825 (m)	A1	Accept 830
		[2]	
6d	Distance travelled by motorcycle $=\frac{1}{2}\times A\times 15^2\left(=\frac{225A}{2}\right)$ or $\frac{1}{2}\times 15V$ seen	M1	Allow *a* for *A*. Condone 20 for 15
	Using equal distances travelled by both at *t* = 20 to set up an equation in *A* only (i.e. must also use *V* = 15*A* if necessary)	M1	Condone 20 for 15

	$\frac{225A}{2}=\frac{1}{2}\times10\times30+10\times30$ Or: $\frac{225A}{2}=\frac{(20+10)}{2}\times30$ Or: $\frac{1}{2}\times15V=\frac{(20+10)}{2}\times30$ and (V =) 60 = 15 A	A1	Correct unsimplified equation in *a* or *A* only
	(A =) 4	A1	
		[4]	
		(10)	