Question Number	Scheme	Marks
4(a)	$2T\sin\beta = 3mg$ OR $\dfrac{T}{\sin(90^o-\beta)} = \dfrac{3mg}{\sin 2\beta}$	M1
	$T = \dfrac{3mg}{2\sin\beta}$ OR $T = \dfrac{3mg\cos\beta}{\sin 2\beta}$	A1
		(2)
(b)	For A or B: $(\uparrow)\quad R = mg + T\sin\beta$ OR For whole system: $(\uparrow)\ 2R = 3mg + mg + mg$ OR For AC or BC: $(\uparrow)\quad R + T\sin\beta = mg + 3mg$	M1 A1
	$R = 2.5mg$	A1
		(3)
(c)	$F = T\cos\beta$	M1A1
	$F = \dfrac{4}{5}\times 2.5mg$	B1 **ft**
	Eliminate T and solve for $\tan\beta$	M1
	$\tan\beta = \dfrac{3}{4}$	A1
		(5)
		(10)
	Notes for question 4	
4(a)	M1 Resolve vertically for C with usual rules or use triangle of forces	
	A1 Answer. Allow $\cos(90^o-\beta)$ for $\sin\beta$ or $\sin(90^o-\beta)$ for $\cos\beta$	
4(b)	M1 Resolve vertically for A or B, for whole system or for AC or BC with usual rules	
	A1 Correct equation	
	A1 Correct answer	
4(c)	M1 Resolve horizontally for A with usual rules	
	A1 Correct equation	
	B1 **ft** for $F = \dfrac{4}{5}\times$ their R (allow magnitude if $R<0$) seen anywhere (B0 for just F =4/5 R)	
	M1 Eliminate T and solve for $\tan\beta$ *correctly*.	
	A1 $\dfrac{3}{4}$ oe	