Question Number	Scheme	Marks
4a)	Initially $T_{IN} = mg\cos 60$	M1
	$T_{IN} = \frac{mg}{2}$	A1
		(2)
4b)	Energy to the lowest point $\frac{1}{2}mv^2 - mg(l) = -mg(l\sin 30)$	M1A1A1
	$T_{FI} - mg = m\frac{v^2}{r}$	M1A1
	$T_{FI} = m\left(\frac{gl}{l}\right) + mg$	DM1
	$T_{FI} = 2mg = 4T_{IN}$ *	A1* (7)
		[9]
(a)		
M1	Equation of motion towards centre at A. Must have $v = 0$. Weight must be resolved and tension not resolved. Allow with cos or sin of 60° or 30°.	
A1	Correct tension	
(b)		
M1	Energy equation from A to the lowest point. One KE and a difference in GPE required.	
A2	Correct equation. -1 for each error.	
M1	Equation of motion at the lowest point, with acceleration in either form. Tension and weight needed.	
A1	Correct equation. Acceleration must now be in the correct form.	
DM1	Solve to find tension at the lowest point. Must reach T = ... but need not be simplified. Depends on both M marks in (b)	
A1*	Achieve the **given** result, from fully correct working. c.s.o.	
NB	If the equations in (b) are found at a general point, mark the equations as above. The final M mark will require some evidence of maximising the tension.	