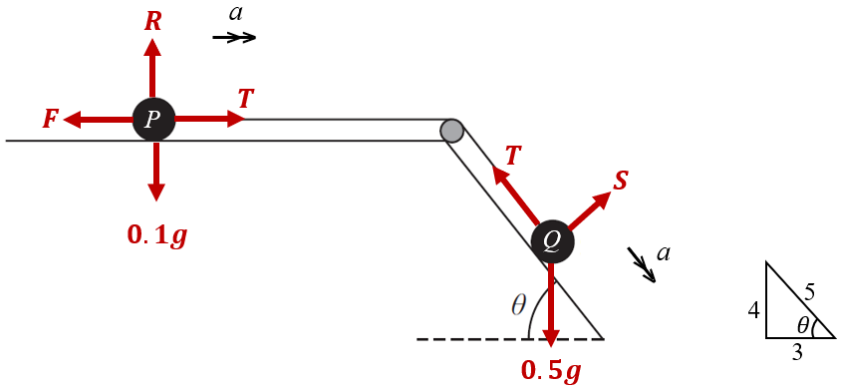
Question Number	Scheme	Marks
		
5 (a)	Correct use of *suvat* to form an equation in *a* only.	M1
	$0.75 = 0 + \frac{1}{2}a(0.5)^2$	A1
	$(a =)\ 6$	A1
	Correct use of N2L for Q	M1
	$0.5g\sin\theta - T = 0.5a$	A1ft
	$(T =)\ 0.92$ (N)	A1
		(6)
5 (b)	$R = 0.1g$	B1
	Correct use of N2L with *P*	M1
	Either *P*: $T - F = 0.1(6)$ Or system: $0.5g\sin\theta - F = (0.5+0.1)(6)$	A1
	Use of $F = \mu R$ for *P*, $\mu \times$ their *R*	M1
	$\mu = 0.327$ or 0.33	A1
		(5)
		[11]

Notes

Note: only penalise use of 9.81 once per whole question, only penalise over/under accuracy once per whole question.

5 (a)	
M1	Use of *suvat* to form sufficient equation(s) to form an equation in *a* only. If using more than one equation, award the method mark when an equation in *a* only has been reached.
A1	Correct equation in *a* only
A1	Correct acceleration

M1	Correct use of N2L for Q to form an equation in T (and a). There is no need to substitute for the trig value or acceleration but M0 if $a = g$. Dimensionally correct and correct terms. Condone sin/cos confusion and sign errors. Including m with every mass term is an A error.
A1ft	Correct equation in T (no need to replace trig). Maybe in a or follow through their calculated a.
A1	Correct answer, must be a decimal.
5(b)	**Note: If both surfaces are assumed to be rough, max possible mark B1 M0A0 M1A0**
B1	Correct expression for R for P seen or implied
M1	Use of N2L horizontally for P or for the whole system (indicated by the mass in the ma term). No need to replace T or a but M0 if $a = g$. If the equation is seen in earlier working, it must be used in (b) to earn the marks here. Dimensionally correct and correct terms. Condone sin/cos confusion and sign errors. Including m with every mass term or g in the ma term is an A error.
A1	Correct unsimplified equation. (Allow with their tension from part (a) if using N2L for P only)
M1	Use of $F = \mu R$. Must be used with their R for P, not simply stated as a formula.
A1	$\mu = 0.327$ or 0.33 Must be a decimal with 2 or 3sf.