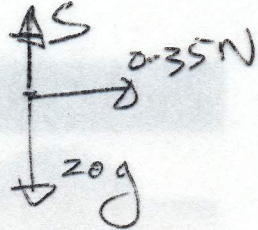


1998

Q4(B) BlocksMass

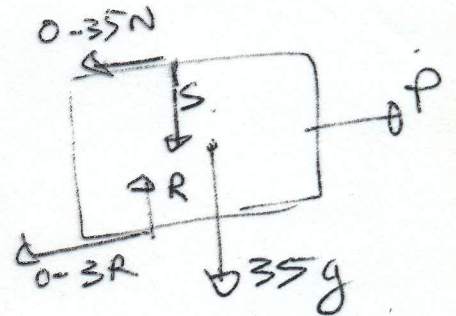
(A)

20

 $a \rightarrow$ 

(B)

35

 $a \rightarrow$ accel
(no slipping yet)forces

Key due to friction force on (A) and was given 5 marks

$$\text{N.I.} : \uparrow S - 20g = 0 \quad (1)$$

$$\uparrow -S + R - 35g = 0 \quad (2)$$

$$\Leftrightarrow 0.35(S) = 20a \quad (3)$$

$$\leftarrow P - 0.35(S) - 0.3R = 35a \quad (4)$$

$$(1) \text{ and } (3) \Rightarrow 0.35(20g) = 20a$$

$$\Rightarrow \boxed{a = 0.35g \text{ m/s}^2}$$

$$\text{Also } (2) \Rightarrow -20g + R - 35g = 0$$

$$\Rightarrow \boxed{R = 55g} \quad (5)$$

$$\therefore (4) \Rightarrow P - 0.35(20g) - 0.3(55g) = 35(0.35g)$$

$$\Rightarrow P = 35.75g$$

$$\Rightarrow \boxed{P = 350.35 \text{ Newtons}} \quad (5)$$