$R = 1$ All are connected in
Parallel

$R_{eff} = \frac{R}{n} = \frac{1}{5} = 0.2\,\Omega$

WS-~~10~~ 8

friction

7th foundation

① we know

coefficient of friction $= \frac{f}{N}$

$$[\mu] = \frac{[f]}{[N]} = \frac{MLT^{-2}}{MLT^{-2}} = M^0L^0T^0 \rightarrow \text{No dimension}$$

② when Normal reaction is halved $N' = \frac{N}{2}$

frictional force also halved $f' = \frac{f}{2}$

Since $\mu = \frac{f}{N} \Rightarrow \mu' = \frac{f'}{N'} = \frac{\frac{f}{\cancel{2}}}{\frac{N}{\cancel{2}}} = \frac{f}{N} = \mu$

$\therefore$ coefficient of friction remain same unchanged

(8)

when mass increases due to air resis[tance]
which acts an opposing force. $F_{net} = mg - R$
$= m(g-a)$

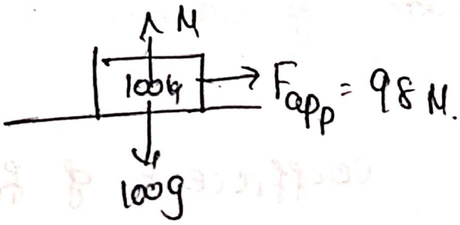
$g - a \rightarrow$ increases

$\therefore$ m_1 will have more acceleration and have more velocity $\therefore$ m_1 will reach ground early.

(5)

As the coefficient of friction does not depend on the area of surface, both ~~bo~~ of the breaker will be equally effective.

(6)



Normal reaction $N = mg = 100g = 100 \times 9.8$
$= 980$ N

Here the applied force is just enough to move the body so it acts as maximum value of static friction $f_s = 98$ N

$\therefore$ Acc to law of static friction $f_s = \mu_s N$

$\Rightarrow 98 = \mu_s \times 980$

$\Rightarrow \mu_s = \frac{98}{980} = \frac{1}{10} = 0.1$

Scanned with OKEN Scanner

(7) Given $m = 350\ gm$; $\mu_s = \frac{3}{4}$

The value of limiting friction $f_s = \mu_s N$

$\Rightarrow f_s = \mu_s mg$

$= \frac{3}{4} \times 350 \times 980$

$= \frac{3}{4} \times 35 \times 98 \times 100$

$= 2572 \times 10^3$

$\Rightarrow 2.57 \times 10^5\ dy$

$= 2.57\ N. \rightarrow A$

(8)

Given

$m = 6\ kg$; $F = 12\ N$; $g = 10\ m/s^2$

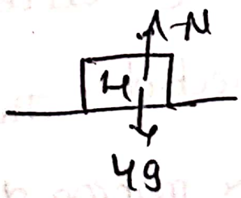
Here the body is in uniform motion means that Applied force just balanced with force of friction

Friction $= 12\ N$

(9)

Given

$F = 4\ N$; $m = 4\ kg$; $\mu = 0.2$.



Normal reaction $N = mg = 4g$.

frictional force $f_s = \mu N = \mu mg$

$= 0.2 \times 4 \times 10$

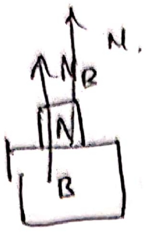
$= 8\ N$

$\therefore f_s > F_{applied}$ the body remains at rest

$\therefore$ acceleration $\underline{a = 0}$

Scanned with OKEN Scanner

(12)



According to the question

contact force = Normal force

For the body to be in equilibrium Net force acting on the body is zero.

Hence frictional force = 0

option B correct

Since frictional force between the surfaces is zero, but the surfaces are not necessarily frictionl This clearly implies that there is no relative motion between the surfaces. Hence they do not slip

option D correct

∴ B, d are correct

(14)

when two surfaces in contact are polished to an extreme degree and become exceedingly smooth, they become intimately connected. The adhesion force enters the Picture now. the motion of one surface over another becomes slowed as a result of this force, resulting in an increase in friction