

Task

(14) Given mass = 500 kg

and $L = 10\text{m}$; $b = 5\text{m}$; $H = 2\text{m}$.

$\therefore$ volume of the body = $L \times b \times H$

$= 10 \times 5 \times 2 = 100\text{ m}^3$

(15) Density of the body = $\frac{\text{Mass}}{\text{Volume}}$

$\Rightarrow$ Density = $\frac{500}{100} = 5\text{ kg/m}^3$

(16) As the mass of the body is doubled, then the density also doubled i.e. density = $2 \times 5 = 10\text{ kg/m}^3$

(17) Given mass = 5 kg

Acceleration = 2 m/s^2

$\therefore$ Force = mass $\times$ acceleration

$= 5 \times 2$

$= 10\text{ N}$.

Task

Advanced:-

(4) $0.25\text{ quintal} = 0.25 \times 100 = 25\text{ kg}$

(5) $8.7\text{ metric ton} = 8.7 \times 1000 = 8700\text{ kg}$

(6) $15\text{ metric ton} = 15 \times 10\text{ quintal} = 150\text{ quintal}$

⑦ Given displacement = 150 m

time = 10 sec

$$\therefore \text{velocity} = \frac{\text{displacement}}{\text{time}}$$

$$= \frac{150}{10} = 15 \text{ m/s}$$

⑧ Displacement = 2 m

work = 20 J

$$\therefore \text{work} = \text{Force} \times \text{displacement}$$

$$\Rightarrow 20 = F \times 2$$

$$\Rightarrow F = \frac{20}{2} = 10 \text{ N}$$