

## KINEMATICS

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3-3 A car moving with a velocity of  $36 \text{ kmh}^{-1}$  is brought to rest in 5 seconds; calculate its deceleration.

DATA:-

$$\begin{aligned}\text{Initial velocity} &= 36 \text{ kmh}^{-1} \\ &= \frac{36 \times 1000}{3600} = 10 \text{ ms}^{-1}\end{aligned}$$

$$\text{Final velocity} = 0 \text{ ms}^{-1}$$

$$\text{Time} = 5 \text{ seconds}$$

$$\text{Acceleration (negative)} = ?$$

SOLUTION:-

$$a = \frac{v_f - v_i}{t}$$

$$a = \frac{0 - 10}{5}$$

$$a = -\frac{10}{5}$$

$$a = -2 \text{ ms}^{-2}$$

(Negative sign shows deceleration)

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