

## Chapter 10

### GRAVITATION

#### EXAMPLE- 9:

A force of 20 N acts upon a body whose weight is 9.8 N. What is the mass of the body and how much is its acceleration? [ $g = 9.8 \text{ m/s}^2$ ].

#### Solution:

Given,  $F = 20 \text{ N}$ ,  $g = 9.8 \text{ m/s}^2$ ,  $W = 9.8 \text{ N}$

(i) We know  $W = mg$

$$m = \frac{W}{g} = \frac{9.8}{9.8} = 1 \text{ kg}$$

$$m = 1 \text{ kg}$$

(ii)  $F = ma$

$$a = \frac{F}{m} = \frac{20}{1}$$

$$a = 20 \text{ m/s}^2.$$

#### EXAMPLE- 10:

What is the weight of an object whose mass is 5 kg?

#### Solution:

Given  $m = 5 \text{ kg}$ ;  $g = 9.8 \text{ m/s}^2$

$$W = mg = 5 \times 9.8 = 49 \text{ N}.$$