① A car travels at 54km/h for first 20s, 36 km/h for next 30s and finally 18 km/h for next 10s. Find its average speed.

→ Distance = 54 + 36 + 18 = 108 km/h
Time = 20 + 30 + 10 = 60s

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

$$= \frac{108}{60} \quad \frac{54}{30} \quad \frac{27}{15} \quad 9 \quad 5$$

$$\text{Speed} = \frac{9}{5} \text{ km/sec}$$

② → Acceleration - Acceleration of a body is defined as the rate of change of its velocity with time.

$$\text{Acceleration} = \frac{\text{change in velocity}}{\text{time taken}}$$

SI unit - $ms^{-2}$

For a body moving in a straight line we consider it to be moving with.

(a) positive acceleration if the speed increases with time -

(b) negative acceleration if speed decreased with time.

An example of uniform acceleration is: a ball rolling down a frictionless inclined plane.

| ③ → uniform motion | Non-uniform motion |
| --- | --- |
| (1) When a body covered equal distance in equatrical time is called uniform motion. | (1) When a body covered an equal distance are equal interval of time. |
| (2) Ex - Rotation of fan Rotation of earth on its axies | (2) Ex - A student is coming to school by bicycle. |