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

Ans $54\ km/h = 54 \times \frac{5}{18} = 15\ m/s$

$36\ km/h = 36 \times \frac{5}{18} = 10\ m/s$

$18\ km/h = 18 \times \frac{5}{18} = 5\ m/s$

1st Case

Speed = 15 m/s

Time = 20 s

Distance = Speed x Time = 15 x 20 = 300 m

2nd Case

Speed = 10 m/s

Time = 30 s

Distance = 10 × 30 = 300m

3rd Case

Speed = 5 m/s

Time = 10 s

Distance = 5 × 10 = 50 m

Total distance = 300 + 300 + 50 = 650m

Total time = 20 + 30 + 10 = 60 s

Average Speed = $\frac{650}{60} = \frac{65}{6}$ m/s = 10.8 m/s

2. Define acceleration and give its SI unit. When is acceleration of a body negative? Give two examples of situations in which acceleration of the body is negative.

The rate of change of velocity of a body is called its acceleration. The SI unit of acceleration is m/s^2.

If the velocity of the body is decreasing it is consider to be negative.

Ex:- When the car stops and applies brakes.

When we flop down on our bed.

3. Destinguish between uniform motion and non-uniform motion. Is uniformly accelerated motion uniform motion? Give one example each of uniform and non-uniform motion.

Ans

UNIFORM MOTION	NON-UNIFORM MOTION
* A body is said to have a uniform motion if it covers equal distances in equal intervals of time.	* A body is said to have a non-uniform motion if it covers unequal distances in equal intervals of time.

Yes, uniformly accelerated motion is uniform motion.

Example of uniform motion:-
Movement of blades of a ceiling fan.

Example of non-uniform motion:-
If a car covers 10 meters in first two seconds, and 15 meters in next two seconds.