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**Question 1:**
When will you say a body is in **(i)** uniform acceleration? **(ii)** non-uniform acceleration?

**Answer 1:**
**(i)** A body is said in uniform acceleration when its motion is along a straight line and its velocity changes by equal magnitude in equal interval of time.
**(ii)** A body is said in non-uniform acceleration when its motion is along a straight line and its velocity changes by unequal magnitude in equal interval of time.

**Question 2:**
A bus decreases its speed from 80 km/h to 60 km/h in 5 s. Find the acceleration of the bus.

**Answer 2:**
Here, $u = 80\ km/h = \dfrac{80 \times 1000}{3600}\ \text{ms}^{-1} = \dfrac{200}{9}\ \text{ms}^{-1}$

$v = 60\ km/h = \dfrac{60 \times 1000}{3600}\ \text{ms}^{-1} = \dfrac{150}{9}\ \text{ms}^{-1}$

$t = 5\ s$

Therefore, acceleration, a = ?

We know that, v = u + at

$$\Rightarrow a = \frac{\text{v-u}}{\text{t}} = \frac{\left(\dfrac{150}{9} - \dfrac{200}{9}\right)}{5} = \frac{-\dfrac{50}{9}}{5} = -\frac{10}{9} = \text{-1.1 ms}^{-2}$$

Therefore, Acceleration is -1.1 ms⁻².

**Question 3:**

A train starting from a railway station and moving with uniform acceleration attains a speed of 40 km/h in 10 minutes. Find its acceleration.

**Answer 3:**

Here we have,

Initial velocity, u = 0 m/s

Final velocity, v = 40 km/h = = $\frac{40 \times 1000}{3600}$ ms$^{-1}$ = $\frac{100}{9}$ ms$^{-1}$

Time (t) = 10 minute = 60 × 10 = 600 s

Acceleration (a) =?

We know that, v = u + at

$$\Rightarrow a = \frac{v - u}{t} = \frac{\left(\frac{100}{9} - 0\right)}{600} = \frac{1}{54} = 0.0185 \text{ ms}^{-2}$$

$\Rightarrow$ a = 0.0185 ms$^{-2}$