

5.9 A car of mass m starts from rest and acquires a velocity along east $\mathbf{v} = v\hat{\mathbf{i}}$ ($v > 0$) in two seconds. Assuming the car moves with uniform acceleration, the force exerted on the car is

- (a) $\frac{mv}{2}$ eastward and is exerted by the car engine.
- (b) $\frac{mv}{2}$ eastward and is due to the friction on the tyres exerted by the road.
- (c) more than $\frac{mv}{2}$ eastward exerted due to the engine and overcomes the friction of the road.
- (d) $\frac{mv}{2}$ exerted by the engine .

$$(9) \quad a = \frac{v - 0}{t} = \frac{v}{2}$$

$$F = ma = \frac{mv}{2}$$

Since, car is moving towards east, the force is exerted eastward. by the friction on the tyres exerted by the road.