3. FORCE AND LAWS OF MOTION

1. What force is required to produce an acceleration of $2m/s^2$ in a body of mass 0.8 kg?
2. A force acts for 0.15 on a body of mass 1.2 kg initially at rest. The force then ceases to act and the body moves through 2m in the next one second. Find the magnitude of force.
3. A ball of mass 10g is initially moving with a velocity of 50m/s. On applying a constant force on ball for 2.0s. It acquires a velocity of 70 m/s.Calculate:-
   (a) Initial momentum of ball
   (b)Final momentum of ball
   (c)Rate of change of momentum
   (d)Acceleration of ball
   (e)The magnitude of force applied
4. A cricket ball of mass 100g moving with a speed of 30m/s is brought to rest by a player in 0.03s. find:
   (a) The change in momentum of ball
   (b)The average force applied by the player.'
5. A bullet of mass 50gm. moving with an initial velocity 100m/s strikes a wooden block and comes to rest after penetrating a distance 2cm in it, calculate (i) initial momentum of the bullet (ii) final momentum of the bullet (iii) retardation caused by the wooden block (iv) resistive force exerted y the wooden block.
6. Calculate the magnitude of the force which when applied on a body of mass 0.5 kg produces an acceleration of 5m/s.