**POINT SENIOR SECONDARY BOARDING SCHOOL, RAJARHAT**

**Class - lX**

**Subject : Science**

**Assignment on Chapter 5**

**Solve the following numericals:**

**1. A bullet of mass 40g is horizontally fired with a velocity 300m/s from a pistol of mass 4kg. What is the recoil velocity of the pistol?**

**2. Two balls 'A' and 'B' of masses 40g and 50g are moving at the speeds of 40m/s and 30m/s respectively. If after colliding, B starts moving with a velocity of 25m/s , what is the velocity of 'A'?**

**3. A hockey ball of mass 200g traveling at 10m/s is struck by a hockey stick so as to return it along its original path with a velocity at 5m/s. Calculate the change of momentum occurred in the motion of the hockey ball by the force applied by hockey stick.**

**4. Two objects, each of mass 1.5kg, are moving in the same straight line but in opposite directions. The velocity of each object is 2.5m/s before the collision during which they stick together. What will be the velocity of the combined objects after collision?**

**5. What is the momentum of bullet of 20 g when it is fired from a gun with a velocity of 100m/s?**

**6. A ball of mass 150g moving with a velocity of 15m/s is brought to rest by a player in 0.1s. Calculate the force acting on the hands of the player.**

**7. Two objects of masses 100g and 200g are moving along the same line and direction with velocities of 2m/s and 1m/s, respectively. They collide and after the collision, the first object moves at a velocity of 1.67m/s. Determine the velocity of the second object.**

**8. An automobile vehicle has a mass of 1500 kg. What must be the force between the vehicle and road if the vehicle is to be stopped with a negative acceleration of 1.7m/s²?**