FORCE AND LAWS OF MOTION (ix)

1. What do you understand by balanced force and unbalanced force?
2. Only the carom coin at the bottom of a pile is removed when a fast moving carom coin (striker) hits it. Give reason.
3. Why does one fall in the forward direction when a moving bus brakes to a stop and fall backwards when it accelerates from rest?
4. What is momentum? How does a karate player break a step of ice with a single blow?
5. How can be first law of motion mathematically stated from second law of motion.
6. A force of 5N gives a mass m1 an acceleration of 10m/s2 and a mass m2 an acceleration of 20 m/s2. What acceleration would it gives if both the masses were tied together.
7. What is third law of motion?
8. When a sailor jump in forward direction, the boat moves backwards. Give reason.
9. If action is always equal to the reaction, explain how a horse can pull a cart.
10. Explain why is it difficult for a fireman to hold a hose which ejects large amount of water at a high speed.
11. Two objects of masses 100 gm and 200gm 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 moves at a velocity of 1.67 m/s. determine the velocity of II ball.
12. From a gun of mass 4 kg a bullet of mass 50 gm is fired with an initial velocity of 35m/s. Calculate the initial recoil velocity of the gun.
13. An object of mass 100kg is accelerate uniformly from a velocity of 5m/s to 8m/s. Calculate the initial and final momentum and magnitude of the force exerted on the object.