SUNCITY SCHOOL
sadaiva agrani

Class: XI A

Name: **Subject: PHYSICS**

Topic: Laws of motion **Date:**

1. If force is acting on a moving body perpendicular to the direction of motion, then what will be its effect on the speed and direction of the body?
2. The two ends of spring – balance are pulled each by a force of 10kg.wt. What will be the reading of the balance?
3. A lift is accelerated upward. Will the apparent weight of a person inside the lift increase, decrease or remain the same relative to its real weight? If the lift is going with uniform speed, then?
4. A soda water bottle is falling freely. Will the bubbles of the gas rise in the water of the bottle?
5. Two billiard balls each of mass 0.05kg moving in opposite directions with speed 6m/s collide and rebound with the same speed. What is the impulse imparted to each ball due to other.
6. A nucleus is at rest in the laboratory frame of reference. Show that if it disintegrates into two smaller nuclei, the products must be emitted in opposite directions.
7. Explain why passengers are thrown forward form their seats when a speeding bus stops suddenly.
8. A man weighs 70kg. He stands on a weighting machine in a lift, which is moving
   (a) Upwards with a uniform speed of 10m/s.
   (b) Downwards with a uniform acceleration of $5m/s^2$.
   (c) Upwards with a uniform acceleration of $5m/s^2$. Take $g = 9.8m/s^2$.
   What would be the readings on the scales in each case what would be the reading if the lift mechanism failed and it came down freely under gravity?
9. (a) State impulse – momentum theorem?
   (b) A ball of mass 0.1kg is thrown against a wall. It strikes the wall normally with a velocity of 30m/s and rebounds with a velocity of 20m/s. calculate the impulse of the force exerted by the ball on the wall.
10. Ten one rupee coins are put on top of one another on a table. Each coin has a mass *m* kg. Give the magnitude and direction of
    (a) The force on the 7^{th} coin (counted from the bottom) due to all coins above it.
    (b) The force on the 7_{th} coin by the eighth coin and
    (c) The reaction of the sixth coin on the seventh coin.