2. FORCE AND LAWS OF MOTION (IX)

1. What do you understand by balanced and unbalanced force?
2. List the factors affecting unbalanced force?
3. What do you understand by 'state of motion'?
4. In ideal situation what would happen when a marble rolls down an inclined plane. What this experiment concludes?
5. Explain why some of the leaves may get detached from a tree if we vigorously shake its branch.
6. Explain 'safety belt is worn to prevent accidents'.
7. What is inertia, how is it related to mass.
8. 'While catching a fast moving cricket ball a fielder gradually pulls his hands backward with the ball.' Why?
9. When F=0, V=u for whatever time t is taken. Explain?
10. What do you understand by 'momentum'?
11. A constant force acts on an object of mass 5kg for a duration of 2 sec. It increases the object velocity from 3m/s to 7m/s. Find the magnitude of applied force. Now if the force was applied for a duration of 5sec. What would be final velocity?
12. Which would require a greater force – accelerating a 2kg mass at $5m/s^2$ or 4 kg mass a $2m/s^2$?
13. A motorcar is moving with a velocity of 108km/h and it takes 4sec to stop after the brakes are applied. Calculate the force exerted by the brakes on motorcar. Mass of car-1000kg.
14. A force of 5N gives a mass M, an acceleration of $10m/s^2$ and a mass acceleration of $20m/s^2$. What acceleration would it give if both the masses were tied together?
15. A stone of 1kg is thrown with a velocity of 20m/s and it comes to rest after travelling a distance of 50m. Find the force of friction between two surfaces.