Ch-8 Force and Laws of Motion

1. State two effects of force.
2. If first law of motion holds true, why does a ball rolling on the ground, stops on its own?
3. What would happen if there was no friction on the Earth?
4. What would happen if gravitational force of the Sun suddenly vanishes?
5. What did Galileo observe by placing two inclined planes facing each other and rolling down a marble ball from top end of one of them?
6. What is the negative effect of friction on your shoe soles?
7. You are applying force on the pan of single pan weighing balance and the pointer points to 100 g. What is the force in newtons applied by you?
8. An athlete always runs some distance before taking a jump. Why?
9. A cricket ball of mass 70 g moving with a velocity of 0.5 m/s is stopped by a player in 0.5 s. What is the force applied by the player to stop the ball?
10. In a cricket match, why does a player lower his hands slightly while catching the ball?
11. Two cars having masses in the ratio 4 : 5, accelerate in the ratio 2:3. Find the ratio of forces exerted by each of them.
12. What do you mean by law of conservation of momentum?
13. Why do roads on mountains have inward inclination at sharp turns?
14. Why is it dangerous to jump out of a moving bus?
15. How do safety belts of cars help in preventing accidents?
16. Explain how momentum gets conserved in collision of two bodies?
17. How are Newton's three laws of motion related?
18. Explain inertia and momentum in detail.
19. Define force and its various types. What is its unit?
20. Give three examples exhibiting inertia in our daily life
21. What change will a force bring in a body?
22. From a rifle of mass 5kg, a bullet of mass 50gram is fired with an initial velocity of 50m/s. Calculate the initial recoil velocity of the rifle.
23. Explain how Newton's second law of motion is used in sports?
24. Why does one get hurt on jumping from a great height to the floor?
25. What is a balanced force?
26. Why do passengers tend to fall sideways when the bus takes a sharp u turn?
27. Why should a passenger hold on to prevent himself from swaying in a turning bus?
28. Why can dust be removed by shaking it, or beating it by a carpet?
29. Why does an athlete take a longer jump if he comes running from a distance than when he jumps suddenly from the take-off line?
30. What happens when you shake a wet piece of cloth? Explain, why?
31. Why is it advised to tie a rope on the luggage while you travel by the bus?
32. How does a boat move forward into the water when the boatman presses one end of the pole against the ground?
33. Why is it difficult for a fireman to handle the hose, which ejects large amount of water at a high velocity?