1. When a carpet is beaten with a stick, dust comes out of it, Explain
2. Differentiate between mass and weight of an object.
3. A truck starts from rest and rolls down a hill with a constant acceleration. It travels a distance of 400 m in 20 s. Find its acceleration. Find the force acting on it if its mass is 7 tonnes
4. Using a horizontal force of 200 N, we intend to move a wooden cabinet across a floor at a constant velocity. What is the friction force that will be exerted on the cabinet?
5. The formula for momentum is:
6. Why are car seatbelts crucial for safety during a sudden stop?
7. An object experiences a net zero external unbalanced force. Is it possible for the object to be travelling with a non-zero velocity? If yes, state the conditions that must be placed on
8. What is the unit of impulse?
9. A person rowing a boat pushes the water backward with their oars. The boat moves forward. This illustrates which of Newton's Laws?
10. A car of mass 1000 kg is moving with a velocity of 72 km/h. If the braking force applied by the brakes is 5000 N, calculate the distance the car travels before coming to rest.
11. An object of mass 'm' moving with velocity 'v' has momentum 'p'. If the velocity is doubled, its momentum will be:
12. A heavy object has more inertia than a light object because it has:
13. Assertion: It is difficult to balance oneself on a bicycle that is at rest. Reason: The rotational inertia of the wheels keeps the bicycle stable when it is moving.
14. Differentiate between static friction and kinetic friction.
15. An object of mass 100 kg is accelerated uniformly from a velocity of 5 m/s to 8 m/s in 6 s. Calculate the initial and final momentum of the object. Also, find the magnitude of the force exerted on the object.
16. Why does a karate player break a slab of ice with a single blow?
17. An object of mass 1 kg travelling in a straight line with a velocity of 10 m/s collides with and sticks to a stationary wooden block of mass 5 kg. Then they both move off together in the same straight line. Calculate the total momentum just before the impact and just after the impact. Also, calculate the velocity of the combined object.
18. A force of 100 N is applied to a 20 kg mass at rest. After 5 seconds, the force is removed. What is the velocity of the mass at this instant?
19. A boy of mass 40 kg jumps with a horizontal velocity of 5 m/s onto a stationary cart of mass 20 kg with frictionless wheels. What is their common velocity after the boy jumps on the cart?

20. The tendency of an object to resist a change in its state of motion is called: