

## Force and Laws of motion

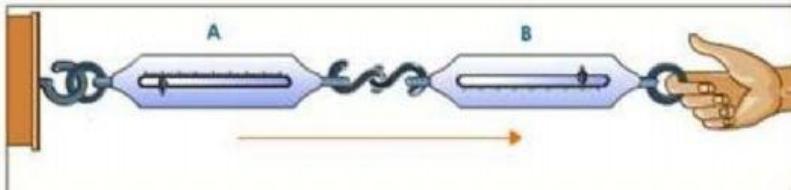
1. A goalkeeper in a game of football pulls his hands backwards after holding the ball shot at the goal. This enables the goalkeeper to:

- (a) Exert large force on the ball
- (b) Increases the force exerted by the ball on hands
- (c) Increase the rate of change of momentum
- (d) Decrease the rate of change of momentum

2. An object of mass 2 kg is sliding with a constant velocity of 4 m/s on a friction less horizontal table. The force required to keep the object moving with the same velocity is:

- (a) 32 N
- (b) 0 N
- (c) 2 N
- (d) 8 N

3. Newton's third law of motion explains the two forces namely 'action' and 'reaction' coming into action when the two bodies are in contact with each other. These two forces:



- (a) Always act on the same body
- (b) Always act on the different bodies in opposite directions
- (c) Have same magnitude and direction
- (d) Acts on either body at normal to each other

4. In a rocket, a large volume of gases produced by the combustion of fuel is allowed to escape through its tail nozzle in the downward direction with the tremendous speed and makes the rocket to move upward.



Which principle is followed in this take off of the rocket?

- (a) Moment of inertia
- (b) Conservation of momentum
- (c) Newton's third law of motion
- (d) Newton's law of gravitation

5. A water tank filled upto  $2/3$  of its height is moving with a uniform speed. On sudden application of the brake, the water in the tank would

- (a) Move backward
- (b) Move forward
- (c) Come to the rest
- (d) Be unaffected

6. Velocity versus time graph of a ball of mass 50 g rolling on a concrete floor is shown in the figure below. What will be the frictional force of the floor on the ball?

